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Theory Of Econometric Modeling Based On Factors Influencing The Development Of Agricultural Sectors

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ABSTRACT

The theoretical aspects of econometric modeling of the development of the agricultural sector are described. The search and implementation of new approaches, models and methods for the development of the agricultural sector are described in detail. The factors influencing the development of the agricultural sector were studied and a functional model was developed.

KEYWORDS

Agriculture, Agriculture, Farming, Horticulture, Econometrics, Econometric Model, Functional Model, Integrated Modeling, Evaluation Criteria, Database, System Analysis And Forecasting.

INTRODUCTION

A number of scientific works on econometric modeling and forecasting of the development of agricultural production in the context of globalization, including the improvement of systematic analysis of the production process of agricultural products, assessment of important factors affecting them, forecasting. Scientific research is being conducted on the widespread use of econometric models, comparative evaluation of statistical information systems, the introduction of

automated information systems for comparative evaluation of production indicators and their indicators, and the creation of an open data portal. The main scientific directions in this process are to accelerate the process of intensive production, ensure transparency and openness of statistics on the volume of agricultural production, improve the method of econometric and statistical calculation through the effective use of international standards and principles.

Resolution of the President of the Republic of Uzbekistan "On measures to radically improve the system of protection of the rights and legitimate interests of farmers, dehkans, farms and landowners, the efficient use of agricultural land" dated October 9, 2017. In order to ensure the implementation of the Decree No. PF-5199 "Improving the knowledge and skills of farmers, members of farms and landowners in the field of agricultural production, providing them with the necessary information and data and other services, as well as the state of labor relations on farms do not meet today's requirements" [2]. Therefore, the main goal of the state social policy in the Republic is to create an economic environment and conditions that will meet the basic needs of the population in society through the development of the agricultural sector.

THE MAIN FINDINGS AND RESULTS

As a result of reforms aimed at modernization, technical and technological re-equipment of economic sectors in our country, structural changes are taking place in the agricultural sector, as well as in other sectors. In this regard, the Action Strategy for the Development of the Republic of Uzbekistan states that "the promotion and dissemination of modern technologies and practices for the use of private lands, farming, efficient and rational use of existing land plots and their high yields and incomes" [1] has been identified as an important direction. As a result, it serves to increase the economic efficiency of agricultural production and to fulfill the tasks set out in other regulations aimed at improving the organizational and economic mechanism.

Theories of econometric modeling of the development of the agricultural sector shape the direction of public administration in the socio-economic development of the regions. However, their study is not limited to, as they are largely based on theories of regional economic growth. The development and introduction of new approaches, models and methods for the development of the agricultural sector is required.

The role of agriculture in the current situation is determined by the following factors:

New jobs are constantly being created in the industry;

The sector will increase its share in the country's GDP;

Due to the industry, the time spent on farming will be reduced, which will improve the quality of life of the population.

The importance of econometric modeling of the agricultural sector is reflected in the following:

Rational use of material, labor and monetary resources;

Serves as a leading tool in the analysis of economic and natural processes;

It will be possible to make some adjustments to the population during the forecasting of the development of the agricultural sector;

It will be possible not only to analyze the agricultural sector in depth, but also to discover their unexplored new laws. They can also be used to predict the future development of the agricultural sector;

along with the automation of computational work, it will facilitate intellectual labor, and will enable the organization and management of the labor of agricultural workers on a scientific basis.

The growth of economic prosperity of the Republic and the positive changes in economic life will create a new kind of demand, increase consumer demand for the quality of agriculture.

The development of the agricultural sector is aimed at meeting the diverse needs of the population. The modernization of the agricultural sector plays a special role in this. However, not all of them meet modern requirements. That is why it has been identified as a priority.

In the current conditions of market relations, agricultural enterprises and organizations operating in the Republic are required to submit proposals that meet international standards. They need to deliver timely, convenient and safe farm products to consumers.

In this context, econometric modeling of the development of the agricultural sector is of particular importance; Because in market conditions:

First, there are elements of risk and uncertainty;

Second, resources are limited;

Third, there is competition between producers and consumers;

Fourth, to predict the future state of economic indicators, and so on.

The agricultural sector is diverse and differs from each other in specific features.

Because a agricultural network is a complex process network, its viability depends on how well it fits into the object being modeled.

Because it is difficult to represent all aspects of an object in a single model, it does reflect important features and characteristics of the object. It should be noted that the overly simplified model does not meet the requirements. The more complex the model, the harder it is to solve the problem.

In the context of modernization of the country, a number of problems need to be addressed in order to expand the use of econometric modeling, taking into account the climate, consumer culture, market economy conditions of each region. For example:

To eliminate differences in the agricultural sector between the regions;

Modeling the priority development of local farming entities;

Improving the competitive environment between local farmers;

Prioritize the development of advanced technological processes that produce competitive products by introducing modern advanced technologies on the ground;

Modeling the full involvement of local production funds and labor in the agricultural sector, ie the management of the limited use of society's limited resources;

It is necessary to introduce modern technologies, develop entrepreneurship and business, achieve self-sufficiency and social

equality in order to develop the agricultural sector and increase production capacity.

It is advisable to divide all the factors affecting the agricultural sector into the following groups:

Material and technical factors: mechanization and electrification of production, level and quality of automation, level of applied technologies, development of science, etc.;

natural historical factors: improvement of soil and climatic conditions by chemical, reclamation, irrigation and other means, selection, genetics and other factors in the field of animal husbandry and agriculture;

Organizational and economic factors: specialization, concentration of production organization, application of best practices, nature, level of management systems and methods, etc.;

Economic factors: production planning and forecasting, economic analysis, accounting and control, labor normalization, work tariffs, etc.;

Social factors: factors related to the identification and development of human abilities - physical, psychological, intellectual, the development of positive attitudes to work and its results, and the exclusion of negative factors.

The last three groups of factors are more or less related to the sum of production relations that are characteristic of this stage of production development. Therefore, they have a certain social character, so we can talk about their content, that is, the predominance of the organizational - economic and economic nature of the third and fourth groups of

factors, and in fact the social, social - The fifth group of factors, which combines economic, socio-psychological factors, is about the predominance of social content.

Such grouping of social factors influencing the development of the agricultural sector allows full use of management in the development of development.

In order to assess the composition of the agricultural sector and determine its classification, it is necessary to develop the characteristics and criteria that characterize the functions performed by the agricultural sector in the system of reproduction of the economy and their specific features.

Agricultural production has long been a part of human economic activity and social life. It is the products of agriculture as an institution of the economic community, the interaction of people, the existence of useful activities - a necessary condition of human society and life. It should be noted that it is no exaggeration to say that the level of development of agricultural production will increase not only at the level of its productive forces, but also taking into account its economic and cultural status.

So, it is clear that with the development of productive forces in society, the production of agricultural products, the economic aspects are strengthening, and most importantly, the demand for agricultural products by the population is growing.

The issues of strategic planning are not limited to the understanding of the object or economic process under study, but also the application of knowledge gained in the study in the practice of market economy, the experience of positive

impact on it to achieve goals also implies. The use of a systematic approach in the development of a strategy for the development of the agricultural sector, the study and evaluation of quantitative and qualitative aspects of the laws of possible processes, allows to study the structural mechanisms of a complex market economy and evaluate them perspective. [4]

Our goal is to analyze the local farming network and improve its models. To do this, we need to focus on the following tasks:

A systematic methodology of complex problems in the field of agriculture is developed based on a systematic approach and general concepts. In the analysis, we take into account the internal and external environment of the agricultural sector. This means that not only internal factors, but also external economic, geopolitical, social, demographic, environmental and other factors must be taken into account.

Each system of the agricultural sector includes its own elements of farming, while at the same time reflecting the elements of the lower levels of the system. In other words, the elements of the agricultural sector are interconnected by many different systems without interfering with each other.

In order to ensure the completeness of the agricultural system to the population, a systematic approach to each element of its structure is desirable.

To do this, the population considers the agricultural sector as a complex system, the quantitative and qualitative aspects of which are studied. Imitation plays an important role in

the analysis of the agricultural sector, which is considered a complex economic process.

Special functions are considered, attention is paid to the algorithms of the system. By function, we mean the properties that lead to a goal. At the same time, the functions of the system are evaluated on the basis of a functional approach. Determining the activity of the system provides an opportunity to determine its state, the laws governing the management of systems. An important aspect of this is the emergence of hierarchical subordination between these parts and is reflected in the relative independence of these parts. This will help the population to develop an integrated systemic simulation of all elements of the agricultural sector on the basis of a single system.

In this case, each process is considered as a complex system. The result is a process of interconnected elements that together form certain features and functions of an economic process.

To understand the essence of this problem, we can also express our functional model in terms of the volume of each type of farm product:

$$DX_{it}=f_2(Ye_{it}, Mo'_{it}, S_{rit}, T_{bit}, Au_{i(t-1)}) + W; \quad (1)$$

Here: DX_{it} – the volume of agricultural products of type i grown in the year; Ye_{it} – the area allotted for the cultivation of a particular type of agricultural product;

Mo'_{it} – the amount of mineral fertilizers allocated for the cultivation of certain types of agricultural products; S_{rit} – the amount of water allocated for the cultivation of a particular type of agricultural product; T_{bit} – the number of machines involved in the

cultivation of a particular type of farm product;
 $Au_{(t-1)} - t-1$ yeari – the amount of demand for this type of agricultural products, W – external factors.

One of the most important elements in the development of the agricultural sector is the need for cultivated products, because if there is no need for cultivated products, there will be no results from cultivation. Therefore, it is necessary to calculate the per capita consumption of agricultural products. The level of agricultural output per capita is calculated as follows: The level of agricultural output per capita is calculated as follows:

$$I_{Dxi} = \frac{D_{xi}}{A_{ui}} \quad (2)$$

Here: I_{Dxi} - i - level of availability of agricultural products of type; D_{xi} - i - the amount of agricultural products grown in the species; A_{ui} - i - the number of people in need of a particular type of farm produce.

The dynamics of changes in the volume of agricultural production is determined as follows:

$$O'_{Dx} = \frac{D_{x(t)}}{D_{x(t-1)}} \quad (3)$$

Here: $D_{x(t-1)}$ - volume of agricultural production last year; $D_{x(t)}$ - the volume of agricultural production grown this year.

One of the important elements for improving the functioning of the agricultural sector and achieving economic development is the implementation of large-scale work to improve the supply of drinking water, gas, electricity, sewage and transport and municipal services. is calculated.

One of the most important factors related to the agricultural sector is the use of transport services:

Effective organization of transport services;

Reduction of delivery time from producers to consumers;

This allows for a drastic reduction in product quality degradation.

The road system in the area does not meet the requirements:

Reduction of the number of vehicles, premature wear of parts;

Increase in shipping costs, decrease in efficiency, deterioration of product quality;

Which leads to the fact that the goods can not be delivered to consumers within the specified period.

This will ensure the movement of the agricultural sector and the economic mechanism. This method is widely used in the analysis and forecasting of development trends in agricultural processes. This is because the effects of the developmental processes are considered to be generalized.

Therefore, the assessment of the level of each farm (economic strength) is determined by the quality of efficiency and the rotation of the farm. [5, 6]

$$D_q = HI \quad (4)$$

Here: D_q - is the economic power of the farming system; I - product supply and turnover of agricultural products; H - is the economic efficiency indicator.

If the efficiency is low, but the supply of all products and the turnover of agricultural

products is high, the economic power will be high. For example, the former Soviet Union was second only to the United States in terms of economic power, despite its lower economic performance than developed countries.

(4) According to the formula, in Uzbekistan, despite the low quality of agricultural products, the efficiency of agriculture as a result of population growth leads to an increase in economic power.

CONCLUSION

Farming is a complex socio-economic category. Theoretical research should improve the modeling of the development of the agricultural sector. In practice, it is necessary to improve the scientific and methodological basis for the complex modeling of innovative projects in the field of agriculture.

To study the specific scientific and methodological basis of the management system of the agricultural sector in the context of modernization of the economy, to determine the main directions of the sector, to create an effective management system in the industry, as well as to form management activities and structure. It is necessary to develop a mechanism for effective management of the industry. Increasing the effectiveness of management mechanisms in the development of the agricultural sector, the effective organization of the organizational and economic mechanism of the agricultural sector should be considered as a key direction in ensuring economic development.

The organizational and economic mechanism of development of the agricultural sector includes management subjects, management functions, management objects,

communication systems, management methods, management goals and objectives, and requires them to operate in an effective system. All the elements of the organizational and economic mechanism are inextricably linked, and their complementarity is the main criterion for their effective functioning in the market.

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