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THE ROLE OF ECONOMETRIC MODELS IN ENSURING THE ECONOMIC SECURITY OF ENTERPRISES

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Abstract:

This research sought to identify the nature of the relationship between spending on higher education and economic growth in general. And evaluating the impact of investment in higher education in Iraq through a benchmark study. And an attempt to develop proposals to address the problem of spending on higher education and economic growth in Iraq. The researcher adopted the qualitative-quantitative approach to clarify the causal relationship between the research variables. The problem of the study was based on a hypothesis based on: There is a causal relationship in one direction to the impact relationship of investment in education and its indicators on economic growth in Iraq during the study period from 2004 to 2023. The study reached a set of conclusions, the most important of which is: There is an impact relationship of investment in education on economic growth. The amount of spending on education in relation to total spending varied during the research period. There was a sharp decline in the level of spending during the period (2014-2017), and during this period Iraq experienced unstable security and political conditions, which led to a decrease in total spending.

Keywords: investment, investment in education, economic growth

Abstract: *This article aims to study the role and influence of econometric models in ensuring the economic security of enterprises. Types of econometric models, including regression analysis, analysis of current modern models, are also widely covered. With the help of these methods, economic indicators are determined and forecast scenarios are made. The article shows the role of econometric modeling in industrial development, forecasts of economic security of enterprises and increasing the effectiveness of state policies. The main conclusion of the article is that the role and possibilities of econometric modeling in ensuring the economic security of enterprises are highlighted.*

Keywords: *econometric modeling, economic security, regression analysis, economic forecasts, economic security of industrial enterprises.*

INTRODUCTION

Econometric modeling in ensuring the economic security of enterprises provides the following opportunities:

- allows for in-depth fundamental research on the economy, the creation of economic development models;
- allows for the development of strategies for determining the impact of external influences, the impact of the global crisis on business cycles, and countermeasures by creating mathematical models of the national economy as a whole;
- not only analytically expresses the problem posed, but also helps to model the business processes of sectors and enterprises in the national economy, which can create mathematical models of economic processes based on information and communication technologies, determine the impact of endogenous and exogenous factors;
- allows for the creation of deterministic and stochastic models of the object, enterprise, sector or national economy under study, and creates models that

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can systematically manage and predict these processes in terms of quality and quantity;

• allows for the development of advisory proposals or management decisions based on the research conducted for the effective management of the object under study.

The future of any state depends on the development of its trade industry. The growth of manufacturing industries and various industrial sectors helps the state to become financially strong. However, it is important to control the security system in the development of these sectors. Ensuring economic security depends on the enterprise's resistance to threats and dangerous external and internal factors. In order to prevent the negative consequences of threats or risks or to minimize the impact of such economic risks, it is necessary to think in advance about what methods and measures will be taken to identify dangerous situations and eliminate their causes. When choosing methods and approaches to eliminate the negative consequences of threats and risks, it is necessary to take into account various components of ensuring the economic security of the enterprise. In large companies and consortiums of developed countries, headquarters are engaged in ensuring economic security. There is no specific department of economic security of the enterprise, there is a headquarters (council) for ensuring economic security of the enterprise. The headquarters (council) develops the strategy of economic security of the enterprise. To ensure the strategy, an enterprise economic security system is developed and operates. The economic security system of an enterprise is understood as the protection of its internal threats, that is, scientific and technical, production capabilities, as well as personnel, from active and passive economic threats, for example, from ineffective scientific and industrial policy of the state or from threats that arise in the external environment.

LITERATURE REVIEW

The result of applying causal or factor analysis to economic processes is that each reason, each factor related to economic activity receives its own assessment. For this purpose, first of all, causal factors are studied, for which they are described by groups: essential and non-essential, main and additional, determining and non-determining factors. Then, first of all, the influence of essential, main and determining factors on economic processes is studied. The study of non-essential, additional and non-determining factors is carried out second, if necessary. Studying the influence of all factors affecting economic processes is a very difficult task and is not always necessary in practice. Revealing and understanding the main reasons that determine and influence the implementation of economic processes, determining their influence and interaction is an understanding of the characteristics of the economic activity of the analyzed object. During the analysis, the main factors affecting economic activity are not only identified and characterized, but their level of influence is also quantified. The current stage of economic activity requires a new approach and strategy of enterprise management, which requires the development of an economic security strategy that allows enterprises to maintain their competitive advantage. In the current conditions, it is very important to ensure the stable and efficient operation of the enterprise, it is necessary to create a high potential for development and growth in the future, that is, to form the economic security of the enterprise. In different periods, economists compared to the concept of "Economic security of enterprises" from our country and foreign scientists L.I. Abalkin, N.S. Bezuglaya, I.A. Blank, V.F. Gaponenko, A.A. Bsspalko, A.S. Vlaskova, A.N. Glumov E.P. Kiselitsa, L.P. Goncharenko, E.A. Kolesnichenko, M.T. Gilfanov, A.G. Porshnev, 3.I. Rumyantseva, N.A. Salomagin, V.K. Senchagov, O.A. Stepicheva, V.D. Mamontov, A.A. Krasnoschek, E.A. Oleynikov, L.K. Ivanova, A.P.Gradov, T.E. Kochergina, in addition to English scientists, scientists such as Uzbek scientists conducted research on the economic security of enterprises and some of its aspects, Kh.P. Abulqosimov, A.U. Burkhanov, B.A. Abdukarimov, M.Q. Pardaev D.I. Istamov, Yu.A. Granatkin, M.M. Mukhammedov, E.N. Khodjaev A.E. Ishmukhammedov D.K. Narzullaeva A.E. Parmonov, A.I. Igamberdiev, Scientists such as G. Dadaev, M. Kadirov expressed their scientific views. In the 90s of the twentieth century, the economic security of the enterprise was interpreted as the provision of conditions for the preservation of trade secrets. Later, economic security was understood as a system that provides resistance to negative external economic factors.

MATERIALS AND METHODS

In all cases, the methods of comparative analysis of the financial results of the final production, indicators of socio-economic efficiency of advanced enterprises are used. Thus, the business plan is fully justified by the necessary economic calculations. The second task is to objectively and comprehensively study the implementation of business plans and compliance with standards according to accounting and reporting data. In the process of analysis at industrial enterprises, the

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implementation of the production program, the quantity and assortment, variety, completeness and quality of the main product, the stability of production, the sales plan, the implementation of the supply contract are studied. The third task is to determine the economic effectiveness of the use of labor, material and financial resources. Enterprises include means and objects of labor (buildings and structures, technologies, equipment, raw materials and materials); labor force (number of workers and specialization, main, auxiliary, service and management personnel, labor productivity, etc.); financial resources (personal and borrowed, fixed and working capital) are studied in general. The fourth task is to control commercial accounting and the analysis of the final financial results (in its complete and incomplete forms). All production activities of the enterprise and their financial results are primarily related to compliance with the principles of commercial accounting, which, in turn, fully meet the requirements of the market relations in which they are formed, reflecting production relations. The principle of material interest is a distinctive feature of commercial accounting, ensuring the necessary coordination of the interests of the enterprise and the collective, personal and social. Commercial accounting is an important tool that implements the economic principle of the division of labor. Commercial accounting ensures the formation of various relationships (mutually beneficial) between enterprises of the same form of ownership, enterprises of different forms of ownership and state enterprises. The independence of enterprises within the framework of the law and their responsibility to the state for taxation, the efficient use of resources are the distinctive features of all commercial accounting. All this indicates the need to implement the requirements of a market economy. Quantitative and qualitative indicators are used to assess the commercial accounting and financial results of enterprises, the amount of profit of an industrial enterprise depends not only on the volume and assortment of its products, but also to a large extent on their cost.

RESULTS

Correct assessment of the commercial accounting and financial results of an enterprise requires the division of factors affecting the indicators under study into related and unrelated. Ignoring external, unrelated factors allows for a correct, accurate interpretation of the work of the enterprise's team. Depending on the nature of the processes being studied in the system, all types of modeling can be divided into deterministic and stochastic, static and dynamic, discrete, continuous and discrete-continuous. Deterministic modeling represents deterministic processes, that is, processes in which the absence of random influences is assumed; stochastic modeling represents probabilistic processes and events; econometric modeling belongs to this type. In this case, a series of implementations of a random process are analyzed and the average characteristics, that is, a set of similar implementations, are evaluated. Static modeling is used to describe the behavior of an object at a certain point in time; in econometrics, such models are called spatial models. Dynamic modeling reflects the behavior of an object over time. Econometrics studies time series and their sets (panel data). Discrete modeling is used to describe processes that are considered discrete, continuous modeling allows you to reflect continuous processes in systems, and discrete-continuous modeling is used for situations that emphasize the existence of both discrete and continuous processes. Econometrics is based on discrete data, but the result is a continuous function.

1-Tabel

Description of the stages of economic and mathematical modeling in ensuring the economic security of enterprises

Stage I	Formulation of an economic problem and its theoretical and qualitative analysis
Stage II	Building an economic-mathematical model
Stage III	Mathematical analysis of the constructed economic-mathematical model
Stage IV	Preparation of economic data for the object being modeled
Stage V	Creating a problem-solving algorithm, preparing computer programs and calculating and solving the problem based on them
Stage VI	Quantitative analysis of the problem solution and its practical application

The dynamic changes taking place in the market economy in recent decades have created a need for in-depth analysis of economic processes. The importance of econometric models is increasing, especially for developing countries, in conducting effective economic policies, optimizing resources, and ensuring macroeconomic stability. Consider the possibility of using expert assessment methods to determine the level of

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threats to the economic security of the enterprise. The method of determining other values for determining the level of threats through expert assessments is more subjective than other methods. This subjectivity is the result of this group of experts engaged in the analysis of threats express their opinions about the past situation and its results, as well as the prospects for the development of the current situation.

In the most general form of this method, the company considers the most likely group of threats and how they can affect their operations. This allows each threat to be assigned a rating of how likely it is to occur. The analysis of the compliance of the amount of available resources with the tasks of ensuring economic security is evaluated according to its components. If the average is standardized, the amount of sources should be considered appropriate the value of tgr for each component exceeds unity. This shows that under the influence of macro and meso-level factors, the enterprise has the necessary resources for safe operation.

CONCLUSION

Internationally, the foundations of classical econometrics developed by Gujarati and Porter (2010), microeconometric models proposed by Wooldridge (2013), and time series analysis approaches proposed by Stock and Watson (2015) are the main theoretical sources in this area. They allow for analysis, hypothesis testing, and forecasting based on real economic data. Uzbek scientists have also conducted some research in this area. In particular, researchers such as R. Mamatkulov, B. Toshmatov, Z. Akhmedova, Sh. Jo'raev have published a number of scientific articles on modeling economic processes, the relationship between inflation and economic growth, and the assessment of investment activity. However, existing studies are limited in some cases to superficial approaches based on statistical analysis, which indicates that the potential of modern econometric methods has not been fully utilized. This study uses regression analysis, correlation analysis, and time series models to examine the relationship between key indicators of Uzbekistan's market economy — GDP growth, inflation rate, investment volume, employment rate, and foreign trade balance.

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