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EVALUATING THE ROLE OF THE INDUSTRIAL SECTOR IN STRENGTHENING THE FINANCIAL SECURITY OF TEXTILE ENTERPRISES THROUGH CLUSTER-BASED APPROACHES

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Abstract. *In this paper have been provided a cluster analysis of the industrial sector in ensuring financial security in the textile industry of the country. For the purpose of preliminary analysis, the author dynamically assessed the regional differences in the values of generalization indicators of operational efficiency and factor indicators of production efficiency.*

Keywords: *textile, industry, regional specificity, textile industry, mesofactors, profitability, net profit, factors, patterns.*

1.Introduction

The COVID-19 pandemic had a significant impact on the global economy, severely affecting various sectors, including the textile industry. Worldwide, it caused a decline in cotton prices, a drop in export and import volumes, widespread supply chain disruptions, and production halts. Governments across the globe, including Uzbekistan, were compelled to introduce emergency measures to contain the spread of the virus.

Despite the challenges, the textile industry in Uzbekistan was not left behind in these global effects. According to official statistics, as of September 1, 2020, the number of industrial enterprises and organizations in the country had reached 78.5 thousand — a 15.7% increase compared to the same period in 2019. The textile sector emerged as one of the most dynamically developing branches of the Uzbek economy during this time, reinforcing its role as a key industry for attracting foreign investment and boosting exports.

However, the year 2020 tested the resilience of global industries. The coronavirus crisis posed a dual threat — to both human health and the economic infrastructure of nations. Uzbekistan's textile industry experienced the same disruptions as other countries: price

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instability, reduced global demand, logistical delays, and operational standstills. Yet, what distinguishes Uzbekistan's experience is its rapid and effective response. Timely measures were implemented to support the industry, resulting in the restoration of enterprise operations and preservation of existing jobs.

As a result, the country's textile sector managed to continue its growth trajectory in terms of production and exports. These outcomes underscore the importance of financial security as a core factor in the sustainability and resilience of any enterprise. Therefore, managing the financial security of textile enterprises becomes a strategically relevant task, especially in times of global uncertainty and crisis.

2.Literature review

The issue of ensuring the financial stability and security of enterprises has been widely addressed in global economic research, reflecting its growing importance amid evolving risks and market uncertainties. Internationally, substantial academic attention has been paid to the gradual strengthening of financial resilience through improved financial management practices, strategic financial planning, and the development of robust methodological frameworks for evaluating financial stability.

Foundational work in this area can be traced to representatives of the classical school of economic theory, such as A. Marshall, J. Mill, D. Ricardo, and A. Smith, who laid the theoretical groundwork for understanding financial mechanisms and their role in economic security. These early economists highlighted the relationship between resource allocation, market efficiency, and sustainable enterprise development — ideas that have evolved into modern concepts of financial security.

In recent decades, the scope of financial security has expanded, integrating themes such as risk prevention, threat mitigation, and systemic resilience. Prominent scholars like Amade S.M., Amirsele A., Amore L., Ahmad S., de Derian, and V. Delas [1-5] have examined financial security threats and articulated strategies for their prevention. Their work emphasizes the need for predictive risk modeling, proactive policy design, and integrated management approaches to strengthen enterprise-level resilience in an increasingly volatile global environment. Financial security issues, financial security threats and prevention strategies Amade S.M. [6], Amirsele A. [7], Amore L. [8], Ahmad S. [9], de Derian [10], V. Delas [11], and others.

Economists from the CIS countries have conducted a number of studies on the problems of assessing and managing the economic and financial security of enterprises, including those

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based on the concept of competitiveness; development of a mechanism for the implementation of the management concept aimed at creating a modern system of financial risk management in credit and financial institutions; prevention of bankruptcy and merger; analysis of the Monte Carlo model for financial risks; conceptual aspects of financial and economic risk assessment in enterprises; management of financial risks arising in the process of mergers and acquisitions on the basis of interaction with shareholders; ensuring financial stability of joint-stock companies, development of organizational and economic methods and models of financial security of enterprises, etc.

The issues of ensuring economic security and financial security at the macro and micro levels, their assessment and management were discussed by scientists of our country - A.Burkhanov [12], H.Abulkasimov [13], Pardaev M.K. [14], Ortiqova D. [15], D.I.Istamov [16], A.E.Ishmuhammedov [17] and others. The work of these authors will undoubtedly make a significant contribution to the theory of financial security of the enterprise. However, due to the complexity and versatility of the problem of financial security of the enterprise, not all aspects of it have been sufficiently studied in these studies. There is a need to scientifically substantiate the application of generally accepted management methods in order to ensure and assess the financial security of enterprises, to adapt the experience of foreign qualifications to the conditions of Uzbekistan, to develop a methodology for ensuring financial security of enterprises in our country.

Problems of management of enterprise information systems and information security in our country by local economists-scientists Abdulaev M. [18] and others. The issues of economic and financial security of enterprises were discussed by economists Abulkasimov H.P. [19] and Burkhanov A.U. Studied by [10].

Initially, the concept of “financial security” was considered as part of economic security and was not separated as an independent element. Therefore, the history of the concept of "financial security" can be considered as the history of economic security.

The concept of financial security of an enterprise occupies a central position in modern economic theory and practice, particularly in contexts marked by instability, competition, and risk. Various scholars, both foreign and local, have explored this multifaceted concept, each offering unique perspectives that, taken together, provide a comprehensive framework for understanding and evaluating the financial security of enterprises.

According to economist Gukova A.V., financial security is fundamentally defined by an enterprise’s ability to independently formulate and implement a financial strategy in

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uncertain and competitive conditions, aligning this with its broader corporate objectives. In this view, financial security is not merely a passive condition but an active and dynamic capacity of the enterprise to safeguard its financial health and competitive standing.

Gukova outlines several key components of this state:

Ensuring financial balance, stability, solvency, and liquidity in the long term, which allows the enterprise to meet its obligations and sustain operations regardless of external fluctuations.

Meeting the ongoing need for financial resources required for sustainable growth and expansion, ensuring that development is not hindered by resource constraints.

Maintaining financial independence, reducing excessive reliance on external funding sources, which could expose the enterprise to additional risks or loss of control.

Resisting and adapting to existing and emerging financial risks, including market volatility, capital structure disruptions, or threats that might lead to forced liquidation or substantial financial loss.

Enabling flexibility in decision-making, so that management can quickly respond to changing market or internal conditions.

Protecting the financial interests of the enterprise's owners, ensuring their investments are secure and yielding returns.

This multidimensional approach emphasizes that financial security goes beyond mere profitability or liquidity; it reflects an enterprise's strategic preparedness and resilience in the face of uncertainty.

Echoing similar sentiments, Protsenko E.A. defines financial security in his research as the ability of a business entity to develop in a planned manner while maintaining financial and economic stability, liquidity, and reproductive capacity. Here, the emphasis lies on long-term planning, sustainable financial flows, and the capacity for expanded reproduction — that is, the ability to reinvest, grow, and adapt over time without jeopardizing stability.

Meanwhile, Uzbek scholar Burhanov A.U. offers an even broader and more systemic definition that integrates macroeconomic and institutional dimensions. He draws a distinction between the financial security of the country and that of an individual enterprise, although recognizing their interdependence. [10]

However, due to the complexity and versatility of the problem of financial security of the enterprise, not all aspects of it have been sufficiently studied in these studies. There is a

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need to scientifically substantiate the application of generally accepted management methods in order to ensure and assess the financial security of enterprises, to adapt the experience of foreign qualifications to the conditions of Uzbekistan, to develop a methodology for ensuring financial security of enterprises in our country. At the same time, it is necessary to analyze the cyclical dynamics of the industrial sector in ensuring financial security in the textile industry of Uzbekistan.

3.Analysis and results

The economic literature provides work on the analysis of the financial stability of enterprises, taking into account the impact of macroeconomic conditions over time. Some scientists study the financial stability of enterprises in industry using mathematical models that include the parameters of dynamic models of macroeconomic indicators. Characterizing their oscillations over time. This allowed the authors to take into account the specific conditions of their activities in different periods in determining the models of financial stability of enterprises.

The same issue is relevant for the industry of the Republic of Uzbekistan in general, as well as for its textile industry. The main hypothesis adopted by the author during this study was as follows: the development (dynamics) of the textile industry in the provinces is directly related to the dynamics of industrial production in general. This hypothesis is based on the assumption (hypothesis) that by analyzing the progressive and cyclical components of the industrial production dynamics in the country, it is possible to reveal the relationship between the progressive and cyclical dynamics of production by industries and sectors of the region.

The theory of economic cycles cannot explain the interaction of fluctuations in economic conditions. Economic theory explains well the stable processes in the economy. Dynamic processes and processes that require the accumulation of even more financial resources make it almost impossible to explain the behavior of the stock market from the point of view of economic theory. Attempts to explain complex economic processes using magnifying and accelerating tools were proposed by Keynes at the beginning of the development of economic theory, but these studies were not continued.

However, statistical and econometric methods are very suitable for solving the above problem. This study includes:

Assessment of the parameters of progressive and cyclical components of the dynamics of industrial production in the regions of the Republic of Uzbekistan;

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Combined grouping of the regions of the Republic of Uzbekistan on the parameters of trend-cyclical components of the dynamics of industrial production, combining the following:

➢ grouping regions by types of linear trend (up or down);

Grouping regions by parameters of the series periodic component of industrial production growth rates.

Identification of specific economic types of regions, taking into account the results of combined grouping.

The proposed model for assessing the parameters of progressive and cyclical dynamics of industrial production in the j region of the Republic of Uzbekistan is as follows:

· Assessment of the parameters of progressive and cyclical components of the dynamics of industrial production in the regions of the Republic of Uzbekistan;

· Combined grouping of the regions of the Republic of Uzbekistan on the parameters of trend-cyclical components of the dynamics of industrial production:

➢ grouping regions by types of linear trend (up or down);

➢ Grouping of regions by parameters of the series periodic component of growth rates of industrial production.

· Identification of specific economic types of regions, taking into account the results of combined grouping.

$$\bar{y}_j = a_0 + a_1 * t + a_2 \mathrm{Sin}(k*t) + a_3 \mathrm{Cos}(k*t),$$

here:

$\bar{y}_j$ – Calculated values of the components of the progressive horse cycle of the time series of annual growth rates of industrial production in the j-region of the Republic of Uzbekistan;

t – years, t = 2000,….,2018 years.

a_0 , a_1 – model parameters that define the translation component of the time series;

k– a parameter that determines the wavelength (period) of cyclic oscillations;

a_2 , a_3 – parameters that contribute to the overall model of harmonic oscillations.

The formula is used to determine the wavelength (period, years):

$$L = 2\pi/k$$

The quality of the model is assessed using a multi-correlation coefficient R^2 as well as a multi-correlation coefficient (D), which allows to determine the specific gravity of the explained change (percentage of actual values of industrial production growth rates in the region correspond to standard indicators).

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Based on the evaluation of the model parameters, it was found that the above model reliably described the time series under study: the explained change by regions was 55-78%.

As a result, the model produced for the Republic of Uzbekistan is as follows:

$$\hat{y}_1 = 108{,}19 + 0{,}096*t + 1{,}912 \text{ Sin } ((-0{,}679)*t) - 1{,}155 \text{ Cos}((-0{,}679)*t).$$

This model explains the 66% change in the annual growth rate (D) of industrial production in the Republic of Uzbekistan as a whole.

According to the analysis of the model parameters, the Republic of Karakalpakstan, Andijan, Jizzakh, Kashkadarya, Namangan, Syrdarya regions have a type of growth trend, and the rest have a declining type. The length of the cycle of industrial production in the regions varies from 4.21 (Tashkent) to 9.37 (Navoi region).

It should be noted that the forecast data calculated according to the 2020 model in the cluster regions 1 and cluster regions 2 show that the growth rates of industrial production decreased compared to the average annual level. 3.5 and 0.4% points, respectively. It follows that the coronavirus crisis situation was due to a decline in industrial production in both groups of regions due to the regular cyclical situation.

It should be noted that the trend-cyclical model forecast for 2020 in cluster regions 1 and cluster regions 2 gives a decrease in the growth rate of industrial production compared to the average. The annual rate is 3.5 and 0.4% points, respectively. It follows that the state of the coronavirus crisis coincided with a decline in industrial production in both groups due to the regular cyclical situation.

Based on the results of the evaluation of the parameters of the above dynamic models, four regions with long-term dynamic characteristics of the industrial trend were identified, which are determined by the main dynamic characteristics. A combination of these components of cyclicity and dynamics. The composition of these regionally known species is as follows:

Cluster 1 (1 cluster, upward type of economic growth):

Samarkand, Tashkent, Khorezm, Tashkent;

Cluster 2 (cluster 1, declining type of economic growth):

Andijon, Jizzak, Namangan,

Cluster 3 (cluster 2, type of growing economic growth): Bukhara, Navoi, Surkhandarya.

Cluster 4 (2 clusters, declining type of economic growth): Republic of Karakalpakstan, Kashkadarya, Syrdarya, Fergana.

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Based on data on the growth rates of industrial production by type of economic activity in 2010-2018. It was found that the general state of industrial growth in the regions has a significant impact on the state of textile production.

Calculations of the correlation coefficients of the annual growth rates of industrial production by type of economic activity show that the largest ratio of the volume of textile production to industrial growth in the region occurs with a delay of 4 years.

It should be noted that the trend-cyclical model forecast for 2020 in cluster regions 1 and cluster regions 2 gives a decrease in the growth rate of industrial production compared to the average. The annual rate is 3.5 and 0.4% points, respectively. It follows that the state of the coronavirus crisis coincided with a decline in industrial production in both groups due to the regular cyclical situation.

4.Conclusions

In studying the financial stability of textile enterprises in the regions of the Republic of Uzbekistan, it is necessary to take into account the cyclical factor, as crises aggravate the financial condition of the enterprise. The conducted research allowed to identify the trends of progressive and cyclical development of industrial production in the regions of the Republic of Uzbekistan, as well as to divide the regions into groups by types of progressive and cyclical development. The data obtained are of great predictive value, as they allow to forecast the dynamics of the cycle at the regional level and, therefore, to take preventive measures to mitigate the effects of the crisis for industry in different regions of Uzbekistan. Thus, the proposed model can serve to improve the economic security of Uzbekistan.

Similar data were obtained for the textile industry of the regions of Uzbekistan, which allows to predict the decline in production in the textile industry and thus take preventive measures. In addition, it was found that the cyclical dynamics in the textile industry depends on the cycle phase in the industry as a whole: for the Republic of Uzbekistan, the delay between the textile industry and the cycle phase in the industrial period is an average of 4 years. This situation can be taken into account in the development of anti-crisis measures in the textile industry, which is important in ensuring the economic security of Uzbekistan.

To reduce internal risks and threats to the financial security of the enterprise, first of all, it is necessary to control the financial security of the enterprise, according to the author, financial security service (service) should be established in large textile enterprises and they should report directly to the CEO.

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In order to establish an effective system of financial security for the enterprise, it is necessary to develop appropriate documents for the enterprise, which should identify internal and external threats, as well as criteria that can be considered as a breach of financial security of the enterprise. In other words, criteria must be defined that allow the assessment of an enterprise's compliance with financial security requirements. The Financial Security Service assesses compliance with these criteria and passes the information to senior management of the enterprise.

At the same time, the principles of requirements for borrowers should be developed, which should meet the requirements of financial security of the enterprise. At the same time, the Security Service should express its opinion on the importance of the reports submitted to assess financial security (as well as to monitor compliance with the financial interests of the enterprise).

In addition, an information system should be established for comprehensive and objective monitoring, including the identification and forecasting of internal and external threats to the financial security of the enterprise. Based on the information obtained, it is necessary to develop a set of rapid and long-term measures to combat the negative factors, as well as to prevent and eliminate the possible negative consequences of threats.

References:

1. Action Strategy for the five priority areas of development of the Republic of Uzbekistan for 2017-2021. https://lex.uz/docs/4168749.

2. Marshall A. Principles of economic science. T. 1. and 2. - M .: Publishing house of the ROO, 1996;

3.Mill J. Fundamentals of Political Economy. Per. from eng. - T. 1-3. - M .: Progress, 1980-1981 .;

4. Ricardo D. The beginning of political economy and taxation. Volume 1. Per. from eng. - M .: Gospolitizdat, 1955 .;

5. Smith A. Research on the nature and causes of the wealth of peoples. - M .: Eksmo, 2007. - Series: Anthology of Economic Thought - 960 p.

6.Amadae, S.M. (2017) Perpetual anarchy: From economic security to financial insecurity. Finance and Society, 3(2): 188-96.;

7.Amicelle, A. (2017) When finance met security: Back to the War on Drugs and the problem of dirty money. Finance and Society, 3(2): 106-23.

8.Amoore, L. (2011) Data derivatives: On the emergence of a security risk calculus for our times. Theory, Culture & Society, 28(6): 24-43.;

9.Ahmad S., Ng Ch., McManusc L. Enterprise risk management (ERM) implementation: Some empirical evidence from large Australian companies. Procedia - Social and Behavioral Sciences 164 (2014) 541 – 547;

10.Der Derian, J. (1995) The value of security: Hobbes, Marx, Nietzsche and Baudrillard. In: Lipschutz, R. (ed.) On Security. New York, NY: Columbia University Press, 24-45.;

11. Delas V., Nosova E., Yafinovych O. Financial Security of Enterprises. Procedia Economics and Finance 27 (2015) 248 – 266;

12.Burxanov A.U. Financial security. Textbook. Economics. 2019, 164 p .;

13.Abulqosimov X.P. Economic security. T .: Akademiya, 2012, 111 - p .;

14.Pardaev M.K., Aminov Z.Yu. Economic security of the enterprise and ways to ensure it. Risola. Samarkand: Zarafshon, 2008.- 47 pages;

15. Artikova D. "Economic security" (Textbook). –T .: TDIU, 2010. 150 pages .;

16. Istamov D.I., Yu.A. Granatkin, M.M. Mukhammedov, E.N. Khodzhaev. Economic security of the enterprise and protection of trade secrets. Samarkand. 1995. - 152 pp.;

17. Ishmuxammedov A.E. Economic security. Study guide. - T .: TDIU, 2004. - 176 p.

18. Abdullaev M., Zaynutdinova U. Algorithmization of enterprise information systems management processes. Scientific electronic journal "Economy and Innovative Technologies". № 6, November-December, 2019, pages 144-154.(http://iqtisodiyot.tsue.uz/sites/default/files/maqolalar/17_Abdullayev_Zaynutdinova.pdf)

19. Abulqosimov H.P. Economic security of the state. Study guide. –T .: Akademiya.2012.

20. Burxanov A.U. Financial security. Study guide. –Tashkent: Manaviyat, 2019. -37 pages.