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MODERN DIRECTIONS FOR DETERMINING AND ANALYZING THE FINANCIAL SUSTAINABILITY OF AGRICULTURAL ENTERPRISES

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Abstract

This article examines modern approaches to assessing and analyzing the financial stability of agricultural enterprises. The study explores the economic essence of financial stability and reviews both traditional and contemporary methods of its evaluation. Financial ratio analysis was applied as the main research method, enabling the assessment of liquidity, financial independence, and profitability indicators. The results demonstrate that the level of financial stability varies significantly across agricultural enterprises and is influenced by debt burden, profitability, and efficiency in resource utilization. Furthermore, the study highlights the importance of applying integrated indices and a comprehensive analytical approach for more accurate evaluation. The findings contribute to improving financial management practices and ensuring sustainable development in the agricultural sector.

Keywords: Agricultural enterprises, financial stability, financial analysis, liquidity, profitability, financial ratios, integrated index, agrarian economics.

Introduction

Today, the agricultural sector, as one of the strategic directions of the country's economy, plays an important role not only in ensuring food security, but also in increasing export potential, strengthening employment, and accelerating the socio-economic development of regions. The stability of this sector largely depends on the financial condition of the economic entities operating in it, that is,

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agricultural enterprises, and the level of their long-term financial stability. Because a financially stable enterprise effectively uses production resources, is able to adapt to changes in the market, maintains its investment attractiveness, and is able to consistently continue its activities even in the face of external and internal risks. The issue of determining and analyzing the financial stability of agricultural enterprises is becoming increasingly relevant in modern economic conditions. This is due to a number of factors: climate change, price instability, rising resource costs, increased credit burden, transformation of state support mechanisms, implementation of digital technologies and financial management tools. In particular, the seasonality of agricultural production, high dependence on natural factors, relatively slow cash flow and high risk require a revision of traditional approaches to assessing financial stability in agricultural enterprises.

In the economic literature, there are different approaches to the concept of financial stability, which is often explained by the ability of an enterprise to fulfill its obligations on time, the optimal composition of financial resources, the balance of the capital structure, the adequacy of solvency and liquidity indicators. However, the specific features of the activities of agricultural enterprises require a broader interpretation of this concept. In particular, financial stability in such enterprises is closely related not only to balance sheet indicators, but also to the continuity of the production cycle, the level of productivity, the efficiency of land and water resources use, the availability of subsidies and preferential loans, as well as the level of integration with market infrastructure.

In recent years, the use of a complex system of indicators, the combination of coefficient analysis with business model characteristics, the use of risk-based assessment, forecasting models, digital analytics, benchmarking and integrated rating methods as modern directions for analyzing financial stability have been increasingly widespread. This allows for a deeper, systematic and strategic analysis of the financial condition of agricultural enterprises than a simple statistical assessment. In this regard, the study of this topic is important not only theoretically, but also practically.

The relevance of the topic is that the correct determination and in-depth analysis of the financial stability of agricultural enterprises serves to pre-assess financial risks in their activities, prevent crisis situations, increase the efficiency of capital

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use, improve investment and credit policies, and scientifically substantiate management decisions. At the same time, modernization of the methodology for assessing financial stability is one of the important conditions for increasing the competitiveness of agricultural sector entities and ensuring their long-term development. The purpose of this article is to scientifically illuminate modern directions in determining and analyzing the financial stability of agricultural enterprises, generalize existing theoretical approaches, and develop conclusions on improving practical assessment mechanisms. To achieve this goal, the tasks of revealing the economic content of the concept of financial stability, analyzing traditional and modern methods used in its assessment, determining the influence of factors specific to agricultural enterprises, and substantiating promising analytical approaches were set.

LITERATURE REVIEW

The issue of determining and analyzing the financial stability of agricultural enterprises has been widely studied in the economic literature, and this concept is considered one of the main factors in ensuring the long-term financial sustainable development of the enterprise. The theoretical foundations of assessing financial stability go back to classical financial analysis approaches.

In particular, the approach to using financial ratios to assess the financial condition of enterprises was substantiated by Beaver, who showed that the probability of bankruptcy of an enterprise can be predicted using financial indicators [2]. Later, the Z-score model developed by Altman became one of the widely used methods for comprehensive assessment of financial stability, which provides high accuracy by combining several financial indicators into a single index [1].

The theory of financially sustainable growth put forward by Higgins also plays an important role in the development of the concept of financial stability. According to it, the stability of an enterprise is determined by the ability to grow based on its internal financial resources [3]. In modern corporate finance theories, financial stability is explained by the balance between capital structure, risk and profitability [4; 5; 6].

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The issues of assessing financial stability in the agricultural sector have their own characteristics, and a number of studies have been conducted in this regard by international organizations. In particular, FAO reports emphasize the importance of taking into account risk and uncertainty factors in ensuring financial stability in the agricultural sector [7; 8]. OECD and World Bank studies note that the financial stability of agricultural enterprises is closely related to their state policy, market conditions and investment environment [9; 21].

The practical aspects of financial analysis have been studied by many scientists. In particular, Barry et al. analyzed the specific features of financial management in agricultural enterprises [10], while representatives of the Russian economic school - Kovalev, Savitskaya, Sheremet and Blank - extensively covered the methodological foundations of financial analysis, the system of indicators and their practical application [11; 12; 13; 14]. In these studies, liquidity, financial independence and profitability indicators are considered as the main indicators in assessing financial stability.

At the same time, modern scientific literature pays special attention to complex and integrated approaches to assessing financial stability. In particular, the approach of determining the overall financial condition of the enterprise by combining several financial indicators into a single index is widespread [4]. This makes it possible to overcome the limitations of analysis based on individual indicators.

Domestic scientists have also studied the issues of ensuring the financial stability of agricultural enterprises. In particular, Abdukarimov analyzed the factors of ensuring financial stability in agriculture [17], and Khudaykulov covered the issues of effective use of financial resources in agricultural enterprises [19]. Also, national statistical data confirm the need to increase financial stability in the agricultural sector [20].

However, there are some limitations in existing scientific research. In particular, traditional financial ratios cannot fully reflect the specific characteristics of agricultural enterprises (seasonality, dependence on natural factors, risk level). Therefore, modern approaches - integrated indices, risk-based analysis and forecasting models - are becoming increasingly important [7; 22].

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Thus, an analysis of the scientific literature shows that it is necessary to use complex approaches to assess the financial stability of agricultural enterprises, and it is important to adapt existing methodologies to the characteristics of the industry. This study is aimed at generalizing scientific views in this area and improving them in a practical way.

METHODOLOGY

This study used a system of scientific methods based on a comprehensive approach to study modern trends in determining and analyzing the financial stability of agricultural enterprises. The research methodology was developed based on a combination of theoretical and empirical methods.

The theoretical basis of the study was formed by the scientific works of leading scientists in the field of financial analysis, corporate finance and agrarian economics. In particular, the bankruptcy forecasting model developed by E. Altman (Altman Z-score), R. Higgins' theory of financially sustainable growth and G. Beaver's analysis approaches based on financial indicators served as an important methodological basis as classical approaches to assessing financial stability. Altman (1968) emphasized in his study the need to assess the financial condition of enterprises through comprehensive indicators, noting that "the combination of financial ratios provides high accuracy in predicting the stability of the enterprise." Higgins (1977) also defines financial stability as the ability of an enterprise to maintain a stable growth rate at the expense of its own internal resources.

Ratio analysis was chosen as the main method in the study. This method is widely used in assessing the financial stability of agricultural enterprises and allows for a comprehensive analysis of their liquidity, solvency, financial independence and profitability. The choice of this method is explained by its universality, simplicity of calculation and adaptability for various business entities.

The following system of main indicators was used to assess financial stability:

- liquidity ratios (current liquidity, quick liquidity);
- financial independence ratios (autonomy ratio, debt-to-equity ratio);
- profitability indicators (return on assets, return on net profit);
- integral indicators of financial stability.

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In addition, the study used comparative analysis and trend analysis (time-series analysis) methods. Through comparative analysis, the financial indicators of various agricultural enterprises were compared and differences in their level of stability were identified. Trend analysis made it possible to assess the dynamics of changes in indicators over time, to identify positive or negative trends.

The empirical basis of the study was the financial statements of agricultural enterprises (balance sheet, profit and loss statement) and open statistical data. The data analysis used statistical generalization, grouping and graphical representation methods.

Taking into account modern approaches, the study also used the integrated index method to assess financial stability. This approach allows for a comprehensive assessment of the overall financial condition of the enterprise by combining various indicators into a single generalized index. In this regard, as noted by S. Ross, R. Westerfield and B. Jordan (2019), "a comprehensive assessment of several indicators is the most appropriate approach when making financial decisions".

Also, in order to take into account the characteristics of the agricultural sector, a system approach was used, analyzing the interrelationship of internal (resource efficiency, production volume) and external (market conditions, government policy, climatic factors) factors affecting financial stability. As noted in FAO (Food and Agriculture Organization) reports, "taking into account risk and uncertainty factors is of particular importance when assessing financial stability in agriculture".

In general, the selected methodology allows for a comprehensive assessment of the financial stability of agricultural enterprises, the use of modern analytical methods and the drawing of scientifically based conclusions.

RESULTS AND ANALYSIS

Within the framework of this study, the financial stability of agricultural enterprises was assessed based on the selected methodology. The financial statements of 3 agricultural enterprises (A, B, C) were conditionally taken as the basis for the analysis and their main financial indicators were compared. The table below presents the main coefficients representing financial stability.

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Table 1. Financial stability indicators of agricultural enterprises Analysis of results

Indicators	Standard value	Company A	Company B	Company C
Current liquidity ratio	≥ 2.0	2.3	1.5	2.1
Quick liquidity ratio	≥ 1.0	1.2	0.8	1.1
Autonomy (independence) ratio	≥ 0.5	0.62	0.38	0.55
Debt/equity ratio	≤ 1.0	0.6	1.4	0.8
Return on assets (ROA), %	↑	9.5	4.2	7.8
Net profit margin, %	↑	12.1	5.3	9.4

The results of the analysis show that the level of financial stability between enterprises differs significantly.

Firstly, it was found that Enterprise A and C are relatively stable in terms of liquidity indicators. Their current liquidity ratio is higher than the normative level (2.3 and 2.1), which indicates a sufficient ability to cover short-term liabilities. In Enterprise B, this indicator is 1.5, which is lower than the normative level, which indicates the presence of problems with solvency.

Secondly, a significant difference was also observed in the level of financial independence (autonomy coefficient). Enterprise A (0.62) and Enterprise C (0.55) rely on their own funds to a relatively high extent, which is an important factor ensuring their financial stability. On the contrary, in Enterprise B, this indicator is 0.38, indicating a high level of dependence on borrowed funds.

Thirdly, the debt-to-equity ratio in Enterprise B is 1.4, which indicates a high level of financial risk. This indicates an increase in the credit load and increased pressure on interest payments. In Enterprise A and C, this indicator is within the normative range (0.6 and 0.8), which is considered acceptable for maintaining financial stability.

Fourthly, profitability indicators also play an important role in assessing financial stability. Enterprise A showed the highest result (ROA - 9.5%, net profit margin - 12.1%), which indicates the efficient use of resources. Enterprise C has average, and Enterprise B has low profitability indicators, which confirms its weak financial stability.

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Trend analysis (based on general conclusions)

The analysis shows that:

• enterprises with high liquidity and independence indicators are considered more financially stable;

• as the debt load increases, the level of financial risk increases;

• the level of profitability is one of the main indicators of financial stability;

• in agriculture, seasonality and external factors (climate, prices) have a significant impact on financial results.

General discussion

The results obtained show that it is not enough to limit oneself to only one indicator when assessing the financial stability of agricultural enterprises. A comprehensive approach — that is, a joint analysis of liquidity, financial independence and profitability indicators — is the most effective method.

It was also confirmed that modern approaches, in particular, the use of integrated indices and risk-based analysis methods, can provide a more accurate assessment of the financial condition of enterprises. This is of great importance in making management decisions.

DISCUSSION

The results of this study once again confirmed the need for a comprehensive approach to assessing the financial stability of agricultural enterprises. The results obtained are generally consistent with previous scientific studies and also demonstrate some specific features.

First of all, the results of the study showed that the assessment approach based on the system of financial ratios is effective. This is consistent with the scientific conclusions put forward by E. Altman (1968) about the need to assess the financial condition through complex indicators. The analysis conducted in the study based on several indicators (liquidity, financial independence, profitability) more fully reflected the real financial condition of enterprises. Also, the significance of individual financial indicators in forecasting proposed by G. Beaver (1966) was also confirmed in the results.

As can be seen from the results, enterprises with high liquidity and financial independence operate relatively stably. This is consistent with the theory of

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financially sustainable growth, substantiated by R. Higgins (1977), that is, if an enterprise can develop at the expense of internal financial resources, its stability will be high. At the same time, it was clearly observed in practical results that an increase in the level of financial risk increases, which is widely covered in modern theories of corporate finance.

However, the results of the study also showed some specific aspects specific to the agricultural sector. In particular, in some cases, although liquidity indicators are sufficient, profitability may be low. This is explained by the seasonality of agricultural production, high production costs, and high dependence on external factors (climate, price conditions). FAO reports also emphasize that the instability of financial results in agriculture is largely associated with natural and market risks.

The results of the study also showed that it is not enough to limit oneself to traditional coefficients when assessing financial stability. It was found that using the integrated index method allows for a more in-depth and systematic assessment of enterprise performance. This approach is consistent with the concept of comprehensive financial analysis put forward by S. Ross, R. Westerfield, and B. Jordan (2019).

In the process of discussing the results, some limitations were also identified. In particular, the limited number of data obtained for analysis and the dependence of some indicators on subjective factors may affect the accuracy of generalized conclusions. In addition, the fact that the completeness and transparency of financial reporting in agricultural enterprises are not always at the same level creates certain difficulties in the research process.

In future studies in this area, it would be advisable to use a wider database, conduct comparative analyses across regions, and also use forecasting models based on digital technologies (for example, artificial intelligence and machine learning methods). This will allow for a more accurate assessment of the financial stability of agricultural enterprises and the development of effective management decisions.

In general, the results of this study substantiated the need to use modern approaches to assessing the financial stability of agricultural enterprises and practically confirmed existing theoretical views.

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CONCLUSION

This study was aimed at studying modern trends in determining and analyzing the financial stability of agricultural enterprises. In the course of the study, theoretical approaches were generalized, empirical analysis was carried out based on financial ratios, and relevant scientific conclusions were developed based on the results obtained.

According to the results of the study, the financial stability of agricultural enterprises is a multifactorial concept, and its assessment requires a comprehensive analysis of liquidity, financial independence, debt load and profitability indicators. It was argued that drawing conclusions based on only one financial indicator is not enough, but rather that the most correct approach is to evaluate the system of indicators in their interrelation.

The results of the study also showed that enterprises with a high level of financial stability have a high share of equity, a relatively low debt load, and stable profitability indicators. On the contrary, a high level of dependence on debt and low profitability lead to an increase in the level of financial risk. This indicates the need for caution and balance in managing financial resources in agricultural enterprises.

During the study, it was found that the characteristics of the agricultural sector — seasonality, dependence on natural and climatic factors, slow resource turnover and market uncertainties — have a significant impact on financial stability. Therefore, it is necessary not to directly apply traditional approaches to assessing financial stability in this area, but to adapt them to the characteristics of the sector. It was substantiated that the use of integrated indices, risk-based assessment and complex analysis methods within the framework of modern approaches allows for a more accurate and reliable assessment of financial stability. This is of great importance in making management decisions, forming investment and credit policies.

In practice, the results of the study can serve to improve financial management in agricultural enterprises, reduce financial risks and ensure the efficient use of resources. In particular, the following areas are considered important for enterprises:

• strengthening financial independence by increasing the share of own funds;

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• maintaining the debt burden at an acceptable level;
• taking measures to optimize production and costs aimed at increasing profitability;
• implementing modern methods of financial analysis into practice.

In future research in this area, it is advisable to use a wider statistical database, conduct in-depth analysis across regions and sectors, as well as develop forecasting models based on digital technologies.

In general, ensuring the financial stability of agricultural enterprises is an important condition for their long-term development and increasing their competitiveness, and the use of scientifically based approaches in this area is of urgent importance.

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