# RETHINKING FINANCIAL DISTRESS DETERMINANTS: INSIGHTS FROM THE AGRO-INDUSTRIAL SECTOR

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ABSTRACT

This paper examines the determinants of financial distress in the agro-industrial sector of the Republic of Serbia. The empirical analysis is based on panel data for 20 large companies from the food production sector in the period 2019–2024. Financial distress was operationalized using the revised Altman Z′ indicator, with an extended classification threshold (Z′ < 1.8). Binary logistic regression was applied to assess the impact of selected variables. The findings have shown that the capital structure is the dominant determinant of financial distress, while indicators of profitability and operating cash flows do not show a statistically significant influence. At the same time, company size stood out as a significant factor, with larger companies more likely to face financial difficulties. The findings indicate that financial distress is not primarily conditioned by operational performance, but primarily by the structural characteristics of financing indicating the need for the development of integrative and multidimensional analytical approaches in this area.

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## Introduction

Since the 2000 market reforms and the EU Stabilization and Association process, WBC have expanded trade and strengthened economic cooperation, with the EU perspective driving regional integration (Monastiriotis, 2008; Handjiski, Lucas, Martin, & Sarisoy Guerin, 2010). Economic integration brings benefits such as greater stability, easier access to EU funds, expanded markets, stronger competition, and faster adoption of international food standards (Tomić, Popović, Vlahović, 2010). "Agriculture and the food industry in the strategic planning and development documents of the Republic of Serbia represent one of the sectors on whose comparative advantages the country's economic policy should be based and which are expected to start a new investment and development cycle" (Vapa Tankosić & Mirkov, 2025, p.1506). Vapa Tankosić and Stojsavljević (2014, p.196) also point out that "agricultural and food industry provide over 15 million workplaces in the EU, accounting for 8,3% of all employed citizens of the Union". However, the results indicate that the agricultural sector in AP Vojvodina is underdeveloped due to low farm specialization and small farm size, with an average economic size of €8,953—about three times lower than the EU-28 average (Đurić, Prodanović, Čavlin, & Lukač Bulatović, 2020).

The European Union recognizes Serbia's potential providing financing through IPA support for the development of the agricultural sector "as new opportunities for farmers are present in the next program period from 2021-2027 within the IPARD III program, with the main focus on young farmers, organic agriculture and all investments that are in line with the Green Agenda" (Vapa Tankosić, 2023p. 963). The climate change and environmental focus create new opportunities to stimulate green sustainable investment (Ivaniš, Vapa Tankosić, Ignjatijević & Lekić, 2025), also in the agro-industrial sector.

The contemporary research on financial distress pointed to its importance as one of the key problems in corporate finance, in the context of increased uncertainty and volatility in the business. Although a number of models have been developed to identify financial difficulties, the results of these studies have not always been consistent, especially when looking at different sectors and institutional contexts (Campbell et al., 2008). The previous literature was mainly based on the assumption that profitability and liquidity are key indicators of financial distress. However, recent research indicated that the predictive power of these indicators may be limited (Balcaen & Ooghe, 2006). Despite this, there is still no unified view on which dimensions of financial operations play a dominant role in explaining financial distress. Modern financial crises indicate and make visible the shortcomings of traditional financial systems (Čavlin, Vapa-Tankosić & Egić, 2021).

A particular problem in the literature was related to insufficient understanding of the interrelationships between different financial indicators. Most of the existing models were based on linear combinations of variables, whereby the complexity of interactions between different dimensions of the company's financial position remained insufficiently explored. This is especially pronounced in sectors with a specific financing structure and pronounced investment cycles, such as the agro-industrial sector.

Although some studies indicated the importance of structural factors, such as capital structure, their relative role in relation to operational performance was not sufficiently empirically confirmed, especially in the context of developing countries and specific sectors of the economy. This situation indicated the existence of a research gap in understanding the determinants of financial distress.

Based on the aforementioned doubts and limitations in the existing literature, the aim of this research was to identify the key determinants of financial distress in the agro-industrial sector of the Republic of Serbia, with a special focus on the relative importance of different dimensions of the financial position of companies. The research starts from the assumption that financial distress cannot be adequately explained by individual indicators, but is the result of the interaction of several business dimensions.

In accordance with the set goal, the main research hypothesis was formulated that the structural factors of financing have a statistically significant impact on financial distress in relation to the operational performance of the company. In addition, auxiliary hypotheses related to (1) the limited discriminatory power of profitability indicators and operating cash flows, as well as (2) the statistically significant impact of company size on the probability of financial distress were tested.

Unlike the majority of previous research that looks at financial distress through isolated financial indicators, this research starts from the assumption of a differentiated and mutually conditioned influence of different dimensions of the financial position of the company, with a special focus on the sector-specific context of agro-industry.

## Literature review

Financial distress is one of the central research questions in the field of financial analysis and corporate finance. In the literature, it is most often defined as a state in which a company has difficulties in meeting its financial obligations, which may precede insolvency or bankruptcy (Altman, 2000; Beaver, 1966). Unlike formal bankruptcy proceedings, financial distress is viewed as a process that develops over time, and its symptoms can be identified through financial indicators.

Early empirical models of financial distress were based on the analysis of individual financial raids. Beaver (1966) was among the first to show that certain financial indicators can have significant predictive power in identifying companies in financial difficulties. Later, Altman (1968; 2000) developed multiple discrimination models (Z-score), which combine multiple financial indicators into a single index of financial stability. These models represent the basis of modern approaches to the analysis of financial distress.

Further development of the methodology led to the application of probabilistic models, such as logistic regression (Ohlson, 1980), as well as hazard models (Shumway, 2001), which enable a dynamic assessment of the probability of the occurrence of financial distress. These approaches emphasize the importance of combining several financial indicators and represent the methodological basis of modern empirical research.

In the literature, financial distress is most often explained through several key dimensions of financial operations, among which profitability, liquidity, indebtedness, and efficiency of operations stand out (Altman, 2000; Campbell et al., 2008). In certain sectors, especially those with pronounced investment cycles and a specific financing structure, structural factors can play a dominant role in explaining financial distress.

In this sense, a growing number of authors indicate the need for integrative approaches in the analysis of financial distress, which overcome the limitations of models based on individual indicators or linear combinations of variables (Balcaen & Ooghe, 2006). More modern approaches point to the importance of hybrid and interpretable models that enable the integration of different dimensions of the financial position and their better understanding (Čavlin et al., 2025). Such approaches start from the assumption that financial distress is a multidimensional phenomenon, resulting from the mutual interaction of various aspects of the company's financial operations.

Starting from the mentioned theoretical assumptions, this research aims to examine the relative importance of different dimensions of the financial position of the company in explaining the financial distress in the agro-industrial sector. Special focus is placed on the relationship between operational performance and structural characteristics of financing, as well as on their mutual interaction in the context of the financial stability of the company.

## Materials and methods

The aim of this research is to identify the key determinants of financial distress in the agro-industrial sector of the Republic of Serbia, using a quantitative approach based on financial indicators and statistical modeling. The empirical analysis is based on panel data that includes observations on a company-year basis for the period from 2019 to 2024. The sample consists of 20 large companies from sector 10 (food production), which includes companies with more than 500 employees, which are legally required to report ESG in the Republic of Serbia. The data were collected from official financial reports available through the database of the Agency for Business Registers of the Republic of Serbia (https://www.apr.gov.rs, 2026).

The revised Altman Z′-score model is used as a proxy for financial distress and is defined as:

$$Z' = 0.717X_1 + 0.847X_2 + 3.107X_3 + 0.420X_4 + 0.998X_5$$

where: $X_1$ = working capital / total assets, $X_2$ = retained earnings / total assets, $X_3$ = EBIT / total assets, $X_4$ = equity / total liabilities, $X_5$ = sales / total assets

The model classifies firms into three zones: safe ($Z' > 2.90$), grey ($1.23 < Z' < 2.90$), and distress ($Z' < 1.23$) (Altman, 2000). Financial distress was operationalized as a binary dependent variable, based on the value of the revised Altman Z′ indicator. In order to ensure a sufficient number of distressed observations and stability of the model, an extended classification criterion ($Z' < 1.8$) was applied, which included companies

with an increased risk of financial difficulties (Altman, 2000). At the same time, this threshold enables the inclusion of a wider range of companies with potential financial difficulties, which improves the analytical relevance of the model. Different dimensions of a company's financial position are the independent variables used in the model. Thus, continuity indicators include Q1 (EBITDA margin) and Q2 (operating cash flow to current liabilities), while profitability includes R1 (return on assets) and R2 (return on sales). Then, activity indicators include A1 (asset turnover ratio) and A2 (accounts receivable turnover ratio), while structural indicators include S1 (equity to total assets ratio) and S2 (operating cash flow to total liabilities). In addition, firm size (SIZE), measured as the natural logarithm of total assets, is included as a control variable.

First, a descriptive statistical analysis was conducted, with the aim of looking at the basic characteristics of the distribution of variables (Hair et al., 2019). Then the classification of companies according to zones of financial distress was carried out. In the next step, a correlation analysis was conducted, in order to identify potential multicollinearity between the independent variables and to improve the specification of the model (Gujarati & Porter, 2009).

Finally, binary logistic regression was applied to assess the impact of selected variables on the probability of financial distress. The logistic model can be represented by the following function:

$$P(Y=1) = \frac{1}{1+e^{-(\beta_0+\beta_1 X_1+\beta_2 X_2+\cdots+\beta_k X_k)}}$$

where P(Y=1) represents the probability of occurrence of financial distress, Xi-independent variable, while βi - denote the estimated parameters of the model.

Logistic regression has been widely applied in financial distress research, as it allows estimating the probability of occurrence of a binary outcome based on a set of financial indicators (Hosmer, Lemeshow, & Sturdivant, 2013; Ohlson, 1980).

The model was evaluated based on standard statistical indicators, including the Likelihood Ratio test and the pseudo coefficient of determination (Nagelkerke $R^2$), which provided an assessment of its statistical significance and explanatory power.

This methodological approach enables a systematic analysis of financial distress as a complex phenomenon, while simultaneously looking at different dimensions of the company's financial position and their mutual relationship.

## Results and discussion

Empirical analysis in this paper aims to identify the key determinants of financial distress in the agro-industrial sector of the Republic of Serbia, based on a set of financial indicators that include various dimensions of business operations. The analysis is based on panel data that includes observations by company-year principle, for selected large

companies from Sector 10 (production of food products), in the period 2019-2024. The sample includes companies from key sub-sectors of the food industry, including meat processing, dairy production, confectionery industry and production of other food products, thus providing basic sectoral coverage of the agro-industrial system. In accordance with the methodological framework defined in the previous chapter, financial distress is operationalized as a binary variable, based on the value of the revised Altman Z′ indicator. In addition to the standard threshold, an extended criterion ($Z < 1.8$) was applied in the analysis, in order to include a wider range of companies with an increased risk of financial difficulties and to ensure the statistical stability of the model. The empirical part of the research is structured in several interconnected steps. First, the structure and representativeness of the sample is analyzed. Then, an overview of the descriptive statistics of the selected financial indicators is given, with the aim of seeing their distribution and variability.

**Table 1.** Structure of the sample

| | |
|---|---|
| Number of firm-year observations | 120 |
| Analysis period | 2019-2024 |
| Distressed observations | 31 |
| Non-distressed observations | 89 |
| Average employees (2024) - Mean | 953 |
| Median (2024) | 845.5 |
| Total assets (2024) - Mean | 14.87 |
| Median (2024) | 12.96 |
| Operating revenues (2024) - Mean | 14.15 |
| Median (2024) | 12.42 |

*Note:* Financial values are expressed in millions of RSD.
*Source:* Authors' data elaboration

The structure of the sample shown in Table 1 indicates that the distribution is of particular importance, because the mentioned sub-sectors are characterized by different production cycles, levels of capital intensity and cost structures, which can affect their financial performance and exposure to financial distress. This ensures that the analysis does not reflect the specifics of one segment, but a wider spectrum of business models within the agro-industrial sector.

In addition to numerical representation, the sample also ensures an appropriate level of representativeness in terms of key economic indicators, such as total assets, income and employment. This enables the results of the analysis to reflect the structural characteristics of the sector, and not just the individual specifics of the analyzed companies.

Based on the above, it can be concluded that the sample provides an adequate basis for conducting empirical analysis and making relevant conclusions about the determinants of financial distress in the observed sector.

**Table 2.** Values of financial indicators

| Code | Mean | Median | Std.Dev | Min | Max | P 0.25 | P 0.75 |
|---|---|---|---|---|---|---|---|
| **K1** | 0.11 | 0.10 | 0.06 | -0.02 | 0.33 | 0.07 | 0.23 |
| **K2** | 0.38 | 0.21 | 0.62 | -1.01 | 4.31 | 0.09 | 0.40 |
| **R1** | 0.02 | 0.04 | 0.02 | 0.00 | 0.05 | 0.00 | 0.04 |
| **R2** | 0.02 | 0.03 | 0.02 | 0.00 | 0.05 | 0.01 | 0.04 |
| **A1** | 0.96 | 1.03 | 0.10 | 0.85 | 1.08 | 0.03 | 1.06 |
| **A2** | 4.98 | 4.81 | 0.38 | 4.47 | 5.59 | 4.66 | 5.24 |
| **S1** | 0.54 | 0.52 | 0.18 | 0.15 | 0.91 | 0.40 | 0.68 |
| **S2** | 0.24 | 0.16 | 0.37 | -0.37 | 2.22 | 0.07 | 0.27 |

*Source:* Authors' data elaboration

The results of the values of financial indicators, shown in Table 2, indicate significant variability of financial indicators within the observed sample, which reflects the heterogeneity of the analyzed companies and additionally confirms the complexity of the agro-industrial sector.

Differences between mean and median values, as well as a wide range of minimum and maximum values of individual indicators, indicate the presence of asymmetric distributions and potential extreme values. In such conditions, the median can be considered a more reliable indicator of central tendency, which is in line with recommendations in empirical research on financial performance (Hair et al., 2019). In particular, the presence of asymmetry in certain indicators is indicated by differences between the median and interquartile values.

Observed by groups of indicators, it can be observed that indicators of operating cash flow and liquidity (K2) show pronounced variability, which indicates different levels of the ability of companies to service short-term liabilities from operating flows. On the other hand, profitability indicators (R1) show relatively lower values and limited dispersion, which may indicate a weaker differentiation of the company in terms of profit performance.

Capital structure indicators (S1) indicate significant differences in the way companies are financed, whereby some companies have a high proportion of their own capital, while others are more dependent on external financing. These differences may play an important role in explaining financial distress, which will be further examined in the regression analysis.

Overall, descriptive statistics confirm that the analyzed set of variables includes different dimensions of the company's financial position and provides an adequate basis for further empirical analysis, especially in the context of identifying the determinants of financial distress.

**Table 3.** The results of the classification of companies

| Description | Criteria | Number of observations | Share |
|---|---|---|---|
| | Altman standard | | |
| Distress zone - standard | <1.23 | 15 | 12.50% |
| Grey zone | 1.23< Z'<2.9 | 70 | 58.33% |
| Safe zone | >2.9 | 35 | 29.17% |
| Total | | 120 | 100.00% |
| Distress zone - extended | < 1.8 | | |
| Distress zone | <1.8 | 31 | 25.83% |
| Safe zone | >1.8 | 89 | 74.17% |
| Total | | 120 | 100.00% |

*Source:* Authors' data elaboration

The results of the classification of companies according to zones of financial distress, shown in Table 3, indicate a significant presence of companies with an increased risk of financial difficulties. Additional analysis of the structure of distress observations indicates their distribution in several sub-sectors of the agro-industry, without a clear concentration in one segment. Distressed companies were identified within the meat industry (Zlatiborac, Carnex, Yuhor), the fruit and vegetable processing sector (Nectar), the dairy industry (Imlek), the bakery industry (Don-Don), as well as in the confectionery industry and snack production segments (Pionir, Nestlé).

At the same time, it is noticeable that some companies record the continuity of distress over several consecutive years (eg Zlatiborac, Imlek, Pionir), while in others distress occurs in shorter episodes. This pattern indicates that the financial distress in the agro-industrial sector is not exclusively determined by the sector, but is the result of a combination of specific financial and operational characteristics of the company.

In accordance with the methodological approach, for the purposes of logistic regression, the distress zone is coded as a value of 1, while all other observations are classified as 0.

**Table 4.** Results of the correlation analysis

| Code | K2 | R1 | S1 | SIZE |
|---|---|---|---|---|
| **K2** | 1 | -0.183406792 | 0.225007488 | 0.251024072 |
| **R1** | | 1 | -0.074623453 | 0.217528596 |
| **S1** | | | 1 | 0.04867199 |
| **SIZE** | | | | 1 |

*Source:* Authors' data elaboration

The results of the correlation analysis shown in Table 4 indicate a low degree of mutual connection between the selected independent variables, which confirms the absence of pronounced multicollinearity in the model.

Most of the correlation coefficients are in the low to moderate range, with no correlation exceeding the 0.8 threshold, which is often used in the literature as indicative of potential multicollinearity problems (Gujarati & Porter, 2009).

**Table 5.** The results of the binary logistic regression

| Variable | B | Std. Error | p-value | Exp(B) |
|---|---|---|---|---|
| K2 | -0.451 | 0.488 | 0.356 | 0.637 |
| R1 | -11.044 | 13.36 | 0.408 | < 0.001 |
| S1 | **-9.082*** | 2.072 | **< 0.001** | 0.0001 |
| SIZE | **1.185*** | 0.423 | **0.005** | 3.27 |
| Constant | -15.419** | 6.47 | 0.017 | — |

*Source:* Authors' data elaboration

*** p < 0.01, ** p < 0.05

Dependent variable: Distress (Z′ <1.8)

The results of the binary logistic regression, shown in Table 5, indicate that the overall statistical significance of the model was confirmed by the value of the Likelihood Ratio test ($p < 0.001$), while the value of the pseudo coefficient of determination (Nagelkerke $R^2 = 0.289$) indicates a satisfactory level of explained variance for models of this type.

The analysis of individual coefficients shows that the capital structure indicator (S1 – the ratio of own capital and total assets) has the most statistically significant impact on financial distress ($p < 0.001$). The negative sign of the coefficient indicates that a higher share of own capital reduces the probability of financial difficulties. The extremely low odds ratio ($Exp(B) \approx 0$) further confirms the strong protective effect of the capital structure, suggesting that financial stability largely depends on the way the company is financed.

In addition, company size shows a statistically significant positive effect on the probability of financial distress ($p = 0.005$). The value of the odds ratio ($Exp(B) = 3.27$) indicates that an increase in firm size increases the probability of financial distress by approximately three times, controlling for other variables. This finding may indicate greater business complexity and greater exposure to risks in larger companies.

Unlike the mentioned variables, indicators of operating cash flow (K2) and profitability (R1) did not prove to be statistically significant in explaining financial distress. Although they have the expected signs of the coefficients, their statistical insignificance suggests that in the observed sector operating performance alone is not sufficient to reliably distinguish between distressed and non-distressed companies.

Taken as a whole, the results indicate that financial distress in the agro-industrial sector is not primarily determined by short-term operational results, but above all by the structural characteristics of financing, with the significant role of company size as a controlling factor, which additionally confirms the need for a multidimensional approach in the analysis of financial distress.

**Table 6.** Results of the adequacy of the applied logistic model

| Statistic | Value |
|---|---|
| Pseudo $R^2$ (Nagelkerke) | 0.289 |
| LLR p-value | < 0.001 |

*Source:* Authors' data elaboration

The quality indicators of the model, shown in Table 6, confirm the adequacy of the applied logistic model for the analysis of financial distress.

The value of the pseudo coefficient of determination (Nagelkerke $R^2 = 0.289$) indicates a moderate level of explained variance, which is in line with expectations for binary logistic regression models in financial distress research, where the occurrence of this phenomenon is influenced by a wider set of factors that go beyond the framework of financial indicators. This result additionally confirms that financial distress is a complex and multidimensional phenomenon, which cannot be fully explained by a limited set of financial indicators.

The statistical significance of the model as a whole was confirmed by the Likelihood Ratio test (LLR $p < 0.001$), which indicates that the set of included variables significantly contributes to the explanation of the probability of the occurrence of financial distress. This result confirms that the model has a satisfactory discriminating ability between distressed and non-distressed observations.

The results additionally indicate the differentiated role of individual variables in the model. Firm size shows a positive and statistically significant effect, with the odds ratio (Exp(B) = 3.27) indicating that an increase in firm size increases the probability of financial distress by approximately three times, controlling for other factors.

This finding suggests that financial distress cannot be viewed exclusively through business performance, but requires a broader analytical framework that includes the interplay of different dimensions of the company's financial position.

This confirms the need for an integrative approach in the analysis of financial distress, which overcomes the limitations of individual indicators and enables a deeper understanding of the mechanisms that lead to financial difficulties.

Overall, the results presented in Tables 1–6 indicate a consistent analytical structure in which the descriptive characteristics of the sample, the distribution of financial distress, and the interrelationships between variables together provide a reliable basis for identifying the key determinants of financial distress in the agro-industrial sector. The results of the empirical analysis indicate the differentiated role of certain financial dimensions in the explanation of financial distress, whereby certain dimensions are distinguished by their importance in relation to others. In this sense, the next chapter is dedicated to a more detailed interpretation of the obtained findings and their review in the context of the existing literature and the specifics of the agro-industrial sector.

## Discussion

The results of the empirical analysis indicate a specific structure of the determinants of financial distress in the agro-industrial sector, which differs to a certain extent from the findings of previous research. Although numerous works have identified profitability and liquidity as key predictors of financial distress (Altman, 2000; Beaver, 1966), the results of this research indicate that the capital structure plays a dominant role in the observed sector, while operating indicators do not show a statistically significant impact.

The dominant importance of the capital structure indicator (S1) is consistent with research findings that emphasize the importance of financial leverage and the ratio of own and others' capital in explaining financial distress (Ohlson, 1980; Shumway, 2001). This finding is consistent with recent research emphasizing that financial stability and vulnerability are not determined solely by firm-level performance indicators, but also by structural and institutional factors within the financial system, including regulatory mechanisms and risk-sharing arrangements (Suljić Nikolaj et al., 2022). In this context, firm-level financial indicators should be interpreted as part of a wider set of interrelated factors that jointly shape financial vulnerability across sectors and economic environments.

Companies with a larger share of own capital have greater resistance to shocks and a lower risk of insolvency, which is confirmed by the results of this paper. However, the intensity of this effect, expressed through an extremely low odds ratio, may indicate a potentially more significant role of the financing structure in the agro-industrial sector compared to other sectors.

On the other hand, the lack of statistical significance of profitability indicators (R1) and operating cash flow (K2) represents a finding that deviates from classic models of financial distress. In the literature, profitability is often cited as one of the key early indicators of financial difficulties (Beaver, 1966; Altman, 2000), while cash flows reflect a company's ability to service obligations in the short term. However, the results of this research suggest that in the observed sector these variables do not have sufficient discriminatory power between distressed and non-distressed companies. These findings are consistent with the underlying structure of the Altman Z′ model, which incorporates leverage and financial structure as key components, further reinforcing the observed importance of capital structure in explaining financial distress.

This finding can be explained by the specifics of the agro-industrial sector, which is characterized by relatively stable operating flows, but at the same time significant dependence on the financing structure and long-term investment cycles. Similar findings are recorded by more modern research, which indicates that in certain sectors, traditional financial indicators lose their predictive power, while structural factors become dominant (Campbell et al., 2008).

A particularly interesting result refers to the company size variable (SIZE), which shows a positive and statistically significant impact on financial distress. This finding contradicts

a body of literature that suggests that larger firms have a lower risk of distress (Fama & French, 1993). However, the results of this research indicate that larger companies in the agro-industrial sector may be exposed to greater operational and financial risks, due to the complexity of operations, greater investment requirements and greater exposure to market fluctuations. This implies the development of new financial products and services that are particularly relevant for environmental protection (Tarkhanova, 2018).

In the literature, the interdependence of profitability and liquidity is often highlighted as a key factor in business efficiency (Prdić, 2023). However, the results of this research indicate that in the observed sector these dimensions do not have a statistically significant impact on financial distress, which suggests that their role may be limited in a specific sectoral context. The obtained results are partially in accordance with previous research in the agro-industrial sector (Čavlin et al., 2023a; Čavlin et al., 2023b), but at the same time indicate a more dominant importance of structural factors. Additionally, the distribution of distressed companies by sub-sector does not indicate their concentration in one segment, but the presence of financial difficulties in different parts of the agro-industry, which further confirms the complexity and multidimensional nature of this phenomenon.

This finding represents a contribution to the existing literature, as it indicates that the determinants of financial distress do not act uniformly, but that their relative importance depends on the sectoral and structural context, which calls into question the universality of traditional models based on linear combinations of financial indicators. This confirms the need for integrative approaches in the analysis of financial distress, which enable the simultaneous observation of multiple dimensions of the company's financial position (Čavlin & Vapa-Tankosić, 2021). Taken as a whole, the results of this research indicate that financial distress cannot be adequately explained by individual indicators, but represents a multidimensional phenomenon arising from complex relationships between different dimensions of the company's financial position. The absence of statistical significance of certain indicators does not imply their irrelevance, but indicates their dependence on the wider context in which they operate.

## Conclusion

Through a theoretical framework that indicates the limitations of traditional approaches, a methodological approach based on panel analysis and logistic regression enabled an empirical insight into the complexity of this phenomenon in a specific sectorial context of the financial position of companies in the agro-industrial sector of the Republic of Serbia.

The findings indicated a clear differentiation between the role of individual financial indicators. While operating indicators, such as profitability and cash flows, showed a limited ability to distinguish between distressed and non-distressed companies, capital structure stood out as a dominant factor in financial distress. At the same time, the size of the company showed a statistically significant impact, whereby larger companies may be exposed to a higher level of financial risks, which indicates the more complex

nature of their operations. The findings have confirmed that financial distress is not the result of individual financial weaknesses, but the result of the interaction of different dimensions of the company's financial position. These findings directly answer the research question of the work and indicates the need to overcome approaches based on isolated observation of financial indicators.

The contribution of this work is reflected in the empirical confirmation of the sectoral specificity, as well as in indicating the dominant role of structural factors in relation to operational performance. This contributes to the existing literature, especially for sectors with pronounced investment and financial specificities. At the same time, the results point to the need to develop analytical approaches that enable an integrated view of multiple dimensions of financial operations.

The limitations of the research are the size of the sample and its sectoral orientation, which may affect the possibility of generalizing the results. In addition, the analysis is based on financial indicators available from standard reports, which does not include the potential impact of non-financial factors.

In this sense, future research can be aimed at expanding the sample to other sectors and countries, as well as at including additional dimensions of financial and non-financial operations. A particularly significant direction of further research is related to the development of integrative and diagnostic models that enable the simultaneous observation of multiple dimensions of the company's financial position. Viewed in a broader context, the understanding of financial distress requires a shift in focus from individual indicators to more complex analytical frameworks that reflect the real dynamics of modern business operations.

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**Conflict of interests**

The authors declare no conflict of interest.

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