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Implementation of the CA-Score Method to Assess the Financial Performance of Agricultural Sector Companies in Indonesia

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Abstract

This study aims to analyze the condition of financial distress as an indicator of financial performance for agricultural sector companies listed on the Indonesia Stock Exchange (IDX). A quantitative descriptive approach was employed, utilizing secondary data—specifically the financial statements of agricultural sector companies—obtained from the official IDX website and the companies' own financial reports. The analysis utilized the CA-Score model, which assesses financial condition based on the ratios of shareholders' investment to assets, earnings before tax and financial expenses to assets, and sales to assets. The results indicate that among the 12 sampled companies, three (25%)—Daya Guna Samudra Tbk. (DGSA), Nusa Palapa Gemilang Tbk. (NPGF), and Jaya Agra Wattie Tbk. (JAWA)—recorded CA-Score values above 0.30, thereby categorizing them as experiencing financial distress. Meanwhile, the remaining nine companies (75%) fell into the non-financial distress category. The findings suggest that while the majority of agricultural sector companies maintain a relatively sound financial condition, certain companies require attention regarding the improvement of profitability, asset utilization efficiency, and capital structure management to minimize the risk of future financial distress.

Keywords CA-Score, financial distress, agricultural sector, Indonesia Stock Exchange.

INTRODUCTION

The agricultural sector in Indonesia needs to receive greater attention in efforts to improve technological development, human resource quality, infrastructure, and policies related to farmers' welfare. The agricultural sector plays an important role in strengthening the national economy by creating employment opportunities and reducing poverty. Strengthening the agricultural sector is therefore a strategic step toward maintaining economic stability and achieving Indonesia's food self-sufficiency.

Companies play a very important role in supporting the development of the agricultural sector through various forms of investment, innovation, and partnerships with farmers. As one of the stakeholders in economic development, companies are not

only oriented toward achieving profits but also have a responsibility to contribute to the sustainability of the agricultural sector, which serves as a pillar of national food security. Corporate support for the agricultural sector can be realized through the provision of production facilities, the adoption of modern technologies, technical assistance, improved access to financing, and the development of more efficient supply chains. In addition to increasing agricultural productivity and competitiveness, corporate involvement can improve farmers' welfare, create added value for agricultural products, and promote regional economic growth. Therefore, synergy among companies, the government, and communities is an important factor in creating an agricultural sector that is productive, sustainable, and capable of addressing various economic and environmental challenges.

Investment in the agricultural sector has long-term prospects because it is closely related to the continuously increasing demand for food as the population grows. In addition to considering potential financial returns, investors are increasingly paying attention to sustainability aspects, such as environmentally friendly agricultural practices, social responsibility, and good corporate governance through Environmental, Social, and Governance (ESG) principles. This situation presents a challenge for companies in attracting investors' interest. In general, investors tend to favor companies with strong financial performance because such companies are believed to be capable of providing high returns and greater investment security. Only companies with good performance are able to meet investors' expectations.

Furthermore, the agricultural sector has unique characteristics because seasonal and weather changes can affect agricultural activities (Guido et al., 2020), resulting in significant fluctuations in income (Sari, 2023). The sector also requires highly complex inventory management due to the perishable nature of agricultural products and the diverse types of products produced (Syah et al., 2023).

Therefore, financial distress conditions in companies need to be identified and analyzed as early as possible before they develop into more serious problems. Early detection of financial distress provides management with an opportunity to take corrective actions and implement improvement strategies immediately, thereby minimizing the risks faced by the company. Accordingly, companies need to conduct analyses to predict the potential occurrence of financial distress so that appropriate preventive and corrective measures can be formulated. One approach that is widely used to predict such conditions is financial ratio analysis, which reflects the company's financial performance and condition.

According to Wirawan and Pangestuti (2022), financial distress is a condition in which a company's operating cash flow is unable to meet its short-term obligations. This condition can serve as an early indicator of declining financial health and signal that the company may face bankruptcy if appropriate corrective actions are not taken promptly.

The CA-Score method is a technique that can be used to assess a company's financial performance. According to Widiantari (2026), the CA-Score method employs several financial ratios that reflect shareholders' capital position, the level of profits generated, and the company's sales value as the basis for analysis.

The CA-Score model is a bankruptcy prediction model developed in 1987 under the leadership of Jean Legault at the Université du Québec à Montréal (UQAM), Canada. This model was developed using the stepwise Multiple Discriminant Analysis (MDA) method. Research conducted by Legault and Véronneau demonstrated that the CA-Score model was able to classify failed and non-failed companies with an accuracy rate of approximately 83%, making it a relatively reliable tool for predicting financial distress, particularly among small and medium-sized manufacturing companies (Legault, 1987).

Over time, the CA-Score model has been widely used in research to compare its predictive ability with other models, including the Altman Z-Score, Springate, Ohlson, Fulmer, Taffler, and Zmijewski models. The study by Dukalang et al. (2024) showed that the CA-Score model achieved an accuracy rate of 97.14%, with a Type II Error of 2.86%, making it the model with the highest accuracy compared with the Altman, Zavgren, Ohlson, Fulmer, and Taffler models in the sample of manufacturing companies examined. These findings indicate that CA-Score can serve as an effective early warning system for detecting financial distress.

Wahidah (2021) found that CA-Score was one of the models with the highest level of accuracy among banking companies. Meanwhile, studies by Putri et al. (2023) and Widdy (2023) involving retail and manufacturing companies showed that CA-Score remained capable of identifying financial difficulties, although its level of accuracy was influenced by industry characteristics and the research period.

This study focuses on agricultural sector companies, a sector that has not been specifically examined using the CA-Score model in previous research. Therefore, this study aims to assess the financial condition of agricultural sector companies using the CA-Score model.

METHODS

The sample consisted of agricultural sector companies that met the established sampling criteria. The data used in this study were obtained by downloading financial information from the official website of the Indonesia Stock Exchange. In addition, data were obtained by accessing the financial statements of the companies selected as research samples. According to Kartika and Hariyani (2019), Putri et al. (2023), Widdy (2023), and Dukalang (2024),

FINDINGS AND DISCUSSION

After the data were collected, they were processed and analyzed. In this study, the CA-Score values were classified into two categories to identify the potential for corporate bankruptcy. A company was classified as potentially experiencing bankruptcy if it obtained a CA-Score value > -0.3. Conversely, a company with a CA-Score value < -0.3 was predicted not to be in a condition leading to bankruptcy. Table 1 presents the results of the CA-Score calculations for each company included in the research sample.

Table 1. Results of the CA-Score Calculation

No.	Code	X1	X2	X3	CA-Score	Description
1	BEEF	0.69	0.299	0.99	0.16	NFD*
2	WMPP	0.39	0.286	0.92	0.15	NFD
3	BISI	0.36	0.276	0.91	0.15	NFD
4	DGSA	0.42	0.230	0.95	0.35	FD**
5	DSFI	0.02	0.565	0.98	0.16	NFD
6	BTEX	0.02	0.545	1.00	0.16	NFD
7	DYNA	0.01	0.398	1.44	0.23	NFD
8	NPGF	-0.53	0.393	0.75	0.42	FD
9	FAPA	0.01	0.143	0.51	0.08	NFD
10	JAWA	0.01	0.196	0.57	0.38	FD
11	LSIP	0.07	0.312	0.72	0.12	NFD
12	SGRO	0.01	0.196	0.47	0.08	NFD

Based on Table 1, which presents the results of the financial distress potential analysis using the CA-Score method for agricultural sector companies listed on the Indonesia Stock Exchange (IDX) during the 2023–2024 period, the data show that three companies obtained CA-Score values above 0.3 and were categorized as experiencing financial distress. These companies were Daya Guna Samudra Tbk. (DGSA), with a score of 0.35; Nusa Palapa Gemilang Tbk. (NPGF), with a score of 0.42; and Jaya Agra

Wattie Tbk. (JAWA), with a score of 0.38. Therefore, DGSA, NPGF, and JAWA were categorized as being in a financial distress condition. These companies face a relatively high risk of business failure if they do not immediately improve their financial and operational management.

Furthermore, Estika Tata Tiara Tbk. (BEEF), Widodo Makmur Perkasa Tbk. (WMPP), BISI International Tbk. (BISI), Dharma Samudera Fishing Industries Tbk. (DSFI), Bumi Teknokultura Unggul Tbk. (BTEX), Dynaplast Tbk. (DYNA), FAP Agri Tbk. (FAPA), PP London Sumatra Indonesia Tbk. (LSIP), and Sampoerna Agro Tbk. (SGRO) obtained scores below 0.3, indicating that they were categorized as financially healthy or non-financial distress companies. These companies demonstrated relatively stable financial conditions and were considered capable of meeting their short-term and long-term obligations.

The results indicate that 75% of the companies in the sample had relatively sound financial conditions, while 25% showed indications of financial difficulties. This condition suggests that most agricultural sector companies were still able to maintain their financial performance, although several companies faced financial pressures that could potentially affect business continuity if improvements were not implemented promptly.

NPGF obtained the highest CA-Score, at 0.42, followed by JAWA with a score of 0.38 and DGSA with a score of 0.35. Based on these scores, it can be concluded that the three companies had financial ratio characteristics that, according to the criteria applied in this study, indicated potential financial distress. These conditions may have been influenced by various factors, such as declining profitability, high operating expenses, low efficiency in asset utilization, or changes in the companies' capital structures. Therefore, these companies need to improve operational efficiency, strengthen profitability, and optimize asset and capital management to reduce the risk of financial difficulties.

Conversely, BEEF, WMPP, BISI, DSFI, BTEX, DYNA, FAPA, LSIP, and SGRO obtained CA-Score values below 0.30. This indicates that these companies had relatively stable financial conditions according to the criteria used in this study. Nevertheless, CA-Score values approaching the category threshold, such as DYNA's score of 0.23, should remain a concern because changes in economic conditions or declines in financial performance may increase the risk of financial distress in subsequent periods.

The findings of this study indicate that the CA-Score model can be used as an early warning system to identify companies potentially experiencing financial distress. This finding is consistent with Dukalang et al. (2024), who stated that the CA-Score model has strong capabilities in detecting financial distress and demonstrated

relatively high accuracy compared with several other bankruptcy prediction models. In addition, Putri et al. (2023) and Widdy (2023) found that the CA-Score model can be utilized as a tool for evaluating corporate financial conditions, although its predictive accuracy may vary according to industry characteristics and the research period. Nevertheless, the findings of this study are not entirely consistent with previous research.

Based on these results, it can be concluded that the CA-Score model provides useful information for management, investors, and creditors in assessing corporate financial conditions. For management, the results of the analysis can serve as a basis for formulating strategies to improve financial performance. For investors and creditors, this information can serve as one of the considerations in making investment and financing decisions.

The findings of this study can also serve as a basis for assessing the financial health of agricultural sector companies listed on the Indonesia Stock Exchange. This is important for investors, management, and other stakeholders when making business decisions and policies. Financial distress in a company serves as a signal that management needs to pay special attention to formulating strategies for improving financial performance. For investors and creditors, information regarding a company's financial condition can be used as a basis for considering investment and financing decisions.

CONCLUSION

Based on the analysis using the CA-Score model, the CA-Score values for the 12 agricultural sector companies ranged from 0.08 to 0.42. Applying the criterion that a CA-Score exceeding 0.30 indicates financial distress, the study found that three companies—DGSA, NPGF, and JAWA—fell into this category. Conversely, the remaining nine companies—BEEF, WMPP, BISI, DSFI, BTEX, DYNA, FAPA, LSIP, and SGRO—were found not to be in financial distress, as evidenced by CA-Score values below 0.30.

Overall, 25% of the companies in the sample showed indications of financial distress, while 75% were in relatively sound financial health. These results indicate that the majority of the agricultural sector companies studied maintain a reasonably healthy financial position. However, the companies identified as experiencing financial distress need to improve their financial performance—specifically regarding profitability, asset utilization efficiency, and capital structure management—to minimize the risk of financial difficulties in the future.

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