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Financial Distress Analysis Using the Altman Z-Score Model on Textile Companies in Indonesia Stock Exchange

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ABSTRACT
This study aims to analyze the level of financial distress among textile companies listed on the Indonesia Stock Exchange. The novelty of this research lies in its use of recent post-pandemic data and its specific focus on the Indonesian textile industry—an economically significant sector that has received limited scholarly attention. Using a descriptive quantitative approach, the study employs secondary data in the form of financial statements. Eight textile companies were selected based on data availability. The Altman Z-Score model is applied to evaluate financial health and classify companies into three categories: distress, grey, and safe zones. The results reveal that only one company is in the safe zone, two are in the grey zone, and five are in the distress zone. Theoretically, these findings reinforce the relevance of the Altman Z-Score model in the context of emerging markets. Practically, the study underscores the urgent need for enhanced financial management and the implementation of early warning mechanisms to prevent bankruptcy in the textile sector.

INTRODUCTION

The textile industry plays a central role in meeting human clothing needs, making it one of the essential sectors in daily life as part of the fulfillment of basic necessities, specifically clothing (Ulmasruroh, 2020). Generally, this industry encompasses activities such as processing fibers into yarn, fabric, and various textile products that serve as raw materials for garments and other apparel-related goods (Ranjani et al., 2023). In addition to its vital role in meeting public needs, the textile industry also makes a significant contribution to the national economy. According to data from Statistics Indonesia (BPS, 2025), in 2024 the textile industry contributed 4.26% to the manufacturing sector's Gross Domestic Product (GDP) and employed approximately 957,122 workers (Fadilah, 2024). However, despite its contributions to the economy, the national textile industry has faced serious challenges in recent years. One of the key issues is the increasing volume of imported textile products, including the rising popularity of thrifting or the resale of second-hand imported clothing (Yonatan, 2025). This phenomenon has led to a shift in consumer preferences toward more affordable and diverse imported textile products, ultimately weakening the competitiveness of local products. As a result, many domestic textile companies have experienced declining revenues. This condition is reflected in the recent trends of Indonesia's textile

export and import activities in Figure 1.

The figure 1 above illustrates the export and import growth trends of Indonesia's textile industry from 2020 to 2024. It can be observed that textile imports have consistently increased compared to exports, even since 2020. Meanwhile, exports have remained relatively stagnant and only began to increase in 2024. This persistent export-import imbalance not only affects statistical figures but also poses direct consequences for the sustainability of domestic textile businesses. The Indonesian Filament Yarn and Fiber Producers Association (APSyFI) reported that between 2022 and 2024, at least 60 textile companies went bankrupt, resulting in the dismissal of approximately 250,000 workers. This phenomenon highlights the growing pressure on the sustainability of Indonesia's textile industry (Yunianto, 2024).

Such pressure is driven by various structural factors, ranging from high dependence on imported raw materials—leading to increased production costs—to low investment certainty, which hampers business expansion. In addition, high energy costs and the use of outdated production machinery further weaken the competitiveness of the domestic textile industry (RI, 2022). In response to these challenges, the government has introduced several policies to support the textile sector. These policies include import requirements, import approval, surveyor reports, and customs supervision as regulated under Ministry of Trade Regulation No. 36/2023 (Purwanto, 2024). However, in 2024, the government revised this regulation through Ministry of Trade Regulation No. 8/2024 to address the problem of import congestion at ports.

Despite the serious pressures faced by Indonesia's textile industry, particularly concerning bankruptcy and financial instability, academic attention to this sector over the past decade has remained limited. Research specifically addressing bankruptcy prediction or financial distress in the textile industry remains scarce. In fact, financial distress analysis plays a crucial role as a diagnostic tool that can provide early warning signals to investors and management, enabling more accurate and proactive strategic decision-making (Sucipto et al., 2022). In this context, it is essential for companies to regularly and comprehensively conduct bankruptcy analysis to detect early signs of financial failure and to manage future financial risks (Bandi et al., 2023). The Altman Z-Score model is employed because it can be applied to all types of companies, including both manufacturing and non-manufacturing sectors, as well as public and private firms. This model is also capable of delivering an accuracy rate of up to 90.48%, with a type I error rate of only 2.38% (Anggraeny & Suryana, 2022).

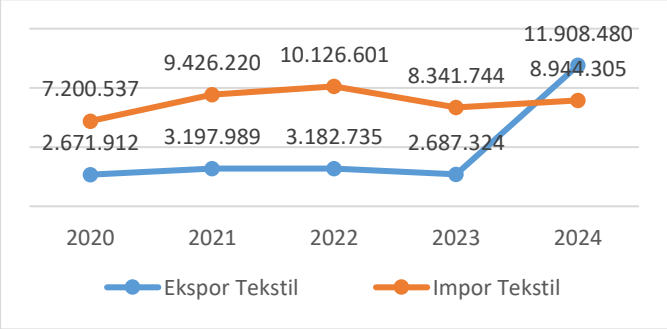

Figure 1. Growth of Textile Industry (Thousand US$)
Source: Data processed, 2025

Sibanda & Tapera (2025) found that this model could identify potential failure up to two years before a company actually collapses. However, Isaac-Roque et al., (2023) emphasized the importance of considering non-financial factors, such as management quality and business strategy, which are not captured by the model. Nevertheless, this study specifically focuses on financial aspects as the basis for analysis, aligning with the principles of Signaling Theory, which suggests that a company's financial information can serve as an early signal to external parties regarding its condition and bankruptcy risk. Therefore, the use of the Altman Z-Score model is considered appropriate as it offers an objective and quantitative method proven effective for assessing a company's financial health, particularly in the textile sector that is currently facing intense industry pressures.

LITERATURE REVIEW

Signaling theory refers to the act of conveying signals or indications about a company's condition through the provision of information to investors (Agus & Sutanto, 2024). Signaling theory can also be interpreted as a mechanism by which company management provides cues to investors regarding how they perceive the company's prospects (Rahmawati & Rohma, 2024). Corporate managers possess more comprehensive information about the company's operations and future outlook than external parties such as creditors, investors, underwriters, and other users of financial information (Rohma, 2022). Consequently, one of the most effective ways for a company to bridge this information gap is by signaling through its financial statements. These statements should contain reliable financial information that reflects the company's current performance and future potential (Qotimah et al., 2023). In the context of this study, signaling theory is used to explain that a company's financial statements can serve as signals to external parties, such as investors and creditors, regarding the company's financial health.

The Altman Z-Score model, which relies on historical financial data such as liquidity, profitability, and leverage, indirectly functions as a tool to capture these signals. A low Z-Score value indicates a negative signal, suggesting a higher likelihood of bankruptcy in the future. Conversely, a high Z-Score sends a positive signal regarding the company's business sustainability (Qalbiyani et al., 2022). Therefore, signaling theory reinforces the argument that financial statements are not merely historical records but also communicative tools, reflecting managerial perceptions and strategic decisions concerning the company's future condition and direction. Financial statement analysis is the process of examining financial reports to evaluate a company's past and present performance (Anita & Rohma, 2020). It plays a crucial role in assessing the company's historical achievements and current financial condition, with the objective of generating predictions regarding its future performance. Financial statement analysis can be conducted using two main methods: (1) Vertical Analysis, which examines data from a single reporting period, and (2) Horizontal Analysis, which compares financial statements across multiple periods (Sitorus & Yulita, 2023).

In the context of this study, financial statement analysis serves as the primary foundation for calculating the financial ratios used in the Altman Z-Score model. This model requires data derived from financial statements to compute five key ratio components that act as indicators of a company's potential bankruptcy. The analytical approach employed in the Altman Z-Score model combines both vertical and horizontal analysis, as it utilizes financial data from multiple companies over several periods. Financial distress refers to a condition in which a company experiences a significant decline in financial performance, occurring prior to liquidation or bankruptcy. This condition is often characterized by the company's inability to generate sufficient cash flow to meet its obligations, such as trade payables and interest expenses (Dhany et al., 2022). There are five types of financial distress: 1) Economic Failure: A condition in which a company's total revenue is

insufficient to cover its obligations, including the cost of capital, often resulting from macroeconomic instability; 2) Business Failure: A situation in which a company ceases its operations due to an inability to generate profit; 3) Technical Insolvency: A state where a company is unable to meet its maturing obligations; 4) Insolvency in Bankruptcy: A condition where total liabilities exceed the total assets of the company; 5) Legal Bankruptcy: A state in which a company has been officially declared bankrupt through legal proceedings(Sriwati & Garatu, 2023).

In the textile industry—a labor-intensive sector highly susceptible to market fluctuations and cost pressures—financial distress can have significant implications for business continuity and socio-economic stability (CRIF, 2024). Therefore, early detection of financial distress is a strategic measure to prevent bankruptcy and enhance managerial and investment decision-making. The Altman Z-Score model was first introduced by Edward Altman in 1968 using a Multiple Discriminant Analysis (MDA) approach to predict corporate bankruptcy based on a combination of several financial ratios deemed significant (Abadi & Misidawati, 2023). Since its initial development for manufacturing firms, the model has undergone three major revisions. In 1983, its scope was expanded to include privately held companies, and in 1995 it was further extended to cover all types of firms, both manufacturing and non-manufacturing (Rastika, 2022).

Empirically, the Altman Z-Score has been proven effective in predicting bankruptcy with an accuracy rate exceeding 80% (Yuli & Suyana, n.d.) (Anggraeny & Suryana, 2022). Its advantages lie in its simplicity, ease of application, and reliance on commonly available financial data, making it a practical and reliable tool for bankruptcy analysis. In the context of the diverse Indonesian textile industry, this model provides an accurate early diagnosis, particularly for firms that are not publicly listed. Since the sample in this study consists of manufacturing companies, the Altman Z-Score model applied is the original version introduced in 1968. This model was specifically designed for manufacturing firms and has been demonstrated to be effective in predicting bankruptcy within this sector. The equation used is: Z = 1,2X1 + 1,4X2 + 3,3X3 + 0,6X4 + 1,0X5. The model employs five financial ratios.

X1 = Working Capital to Total Assets Ratio (Working Capital / Total Assets). This ratio is used to assess the company's ability to generate working capital from its total assets (Sriwati & Garatu, 2023b). X2 = Retained Earnings to Total Assets Ratio (Retained Earnings / Total Assets). This ratio measures the company's ability to generate retained earnings. Retained earnings represent the profit from the company's operations that is not distributed to the owners (Tania et al., 2021). X3 = EBIT to Total Assets Ratio (EBIT / Total Assets). This ratio is used to evaluate the ability of the company's total assets to generate earnings before interest and taxes (EBIT) (Tania et al., 2021). X4 = Market Value of Equity to Book Value of Total Debt Ratio (Market Value of Equity / Book Value of Total Debt). This ratio indicates the company's capacity to cover its obligations with its equity (Tania et al., 2021). X5 = Sales to Total Assets Ratio (Sales / Total Assets). This ratio functions to assess the company's ability to generate profit through sales (Sriwati & Garatu, 2023b). Based on the calculations using the model above, the resulting scores can be classified as Z-Score > 2.99 = Safe Zone (The company is considered to have a low probability of experiencing financial distress and is regarded as safe from bankruptcy). Z-Score between 1.81 and 2.99 = Grey Zone (The company is in an intermediate zone between safe and distress). Z-Score < 1.81 = Distress Zone (The company is experiencing financial distress or difficulties and is at risk of bankruptcy)

RESEARCH METHOD

The research method used in this study is a quantitative descriptive method. Quantitative descriptive research is a method that describes a phenomenon using accurate quantitative data and is scientifically examined (Sahir, 2021). The sample in this study was selected using purposive sampling, a sampling technique based on specific criteria considered relevant to the research objectives. The criteria used were: (1) manufacturing companies in the textile sub-sector listed on the Indonesia Stock Exchange (IDX) consecutively from 2020 to 2024, and (2) companies with complete financial statements at least up to the third quarter of 2024, accessible through the official IDX website (www.idx.co.id). Based on these criteria, a total of 8 companies were obtained as the sample and subsequently analyzed using the Altman Z-Score model.

The sample selection focused on manufacturing companies in the textile sub-sector listed on the IDX, considering the availability of complete, consistent, and publicly accessible financial statement data. Public companies were chosen because their financial reports comply with accounting standards and are audited, thereby enhancing the validity of the data used in the analysis. The observation period from 2020 to 2024 was selected to encompass the COVID-19 pandemic and the post-pandemic recovery phase. Although the pandemic imposed significant economic pressure and uncertainty, this period is highly relevant to test the effectiveness of the Altman Z-Score model in predicting bankruptcy risk under market conditions characterized by volatility and external challenges. Thus, the analysis during this period provides insights not only into the financial condition of companies in normal circumstances but also during crisis periods, contributing empirically to the understanding of financial distress dynamics in the textile industry.

The data used were secondary data, consisting of assets, liabilities, equity, and company performance obtained from officially published financial statements available on www.idx.co.id. The data analysis technique employed in this study is descriptive analysis, aimed at illustrating the financial condition of textile companies listed on the Indonesia Stock Exchange during the 2020–2024 period based on the Altman Z-Score. This analysis intends to identify the level of financial distress among the sampled companies throughout the study period.

RESULT AND DISCUSSION

Before analyzing the financial distress condition of textile companies using the Altman Z-Score model, calculations were first performed on the five financial ratios that constitute its components. The first ratio calculated was X1 (working capital to total assets), which serves to measure the company's short-term liquidity in the context of asset utilization efficiency. Based on the analysis results in the table 1, several companies such as ARGO, HDTX, and INOV exhibited negative ratios throughout the period from 2020 to the third quarter of 2024. HDTX experienced a decline from -0.58 in 2020 to -0.96 in the third quarter of 2024. INOV also showed a continuous decrease each period, from -0.00 in 2020 to -0.25. Although not in the safe zone, ARGO showed an improvement each year, increasing from -1.42 in 2020 to -0.25 in the third quarter of 2024. Negative working capital indicates that their current liabilities exceed current assets, which may signal liquidity problems and difficulties in meeting short-term obligations.

Despite a sharp decline to -0.80 in 2021, SRIL was able to stabilize its working capital by the end of the third quarter of 2024. This significant change could indicate certain financial strategies, such as adjustments in managing current assets. Meanwhile, other companies such as TFCO, MYTX, INDR, and BELL demonstrated relatively stable and positive ratios. For example, TFCO recorded a working capital to total assets ratio consistently ranging from 0.25 to 0.34 over the past five years. MYTX showed an increase from 0.16 in 2020 to 0.23 in the third quarter of 2024. INDR and BELL experienced fluctuations during the last five years but remained within positive values. Results of X1 Calculation (Working Capital to Total Assets Ratio) in Table 1.

Table 1. Working Capital to Total Assets Ratio (X1) of Textile Companies for the Period 2020–2024

CODE	2020	2021	2022	2023	2024	QUARTER 2024		
						Q1	Q2	Q3
ARGO	-1,42	-1,4	-1,47	-0,27		-0,26	-0,26	-0,25
TFCO	0,29	0,34	0,25	0,27		0,27	0,28	0,28
SRIL	0,40	-0,80	0,21	0,12		0,12	0,08	0,05
HDTX	-0,58	-0,69	-0,83	-0,91		-0,93	-0,97	-0,96
INOV	-0,00	-0,07	-0,15	-0,22		-0,25	-0,27	-0,25
MYTX	0,16	0,30	0,15	0,17		0,19	0,22	0,23
INDR	0,03	0,08	0,11	0,00	0,02			
BELL	0,17	0,22	0,22	0,25	0,18			

Source: www.idx.co.id processed, 2025

Table 2. Retained Earnings to Total Assets Ratio (X2) of Textile Companies for the Period 2020-2024

CODE	2020	2021	2022	2023	2024	QUARTER 2024		
						Q1	Q2	Q3
ARGO	-2,44	-2,48	-2,06	-2,16		-2,68	-2,68	-2,69
TFCO	0,00	0,04	0,05	0,06		0,06	0,06	0,06
SRIL	0,21	-0,57	-1,42	-1,94		-2,00	-2,09	-0,24
HDTX	-4,98	-5,64	-7,57	-8,47		-8,58	-8,73	-9,09
INOV	0,05	0,07	0,02	-0,01		-0,02	-0,04	0,01
MYTX	-0,37	-0,26	-0,29	-0,31		-0,31	-0,31	-0,32
INDR	0,29	0,34	0,35	0,31	0,30			
BELL	0,13	0,14	0,14	0,15	0,14			

Source: www.idx.co.id processed, 2025

Analysis results in the table 2 reveal that several companies experienced a negative trend in retained earnings, which may reflect unstable financial performance. This ratio indicates the extent to which a company retains earnings to support business growth relative to its total assets. The higher this ratio, the larger the earnings reserves available for expansion or to cover operational needs without relying on external funding sources. Some companies, such as ARGO and HDTX, recorded negative retained earnings ratios from 2020 to the third quarter of 2024, indicating that these companies faced earnings deficits due to accumulated losses or dividend payments exceeding profits. HDTX experienced a drastic decline from -4.98 to -9.09, signaling increasing financial pressure. Conversely, TFCO, INOV, INDR, and BELL exhibited positive and relatively stable ratios, indicating their ability to retain earnings to support asset growth. Meanwhile, SRIL showed sharp fluctuations, dropping from a positive 0.21 in 2020 to -1.94 in 2024, while MYTX remained negative, though less severe compared to ARGO and HDTX.

In table 3 several companies exhibited unstable performance. ARGO and HDTX consistently recorded negative ratios throughout the period from 2020 to the third quarter of 2024. SRIL also experienced a sharp decline from 0.05 in 2020 to -0.11 in the third quarter of 2024, indicating low profitability and potential difficulties in generating operating income from the assets owned. On the other hand, TFCO and MYTX maintained stable ratios, suggesting their ability to generate operating profits from their assets. INDR showed fluctuations, dropping from 0.11 in 2021 to -0.03 in 2024, indicating a decline in profitability. Meanwhile, INOV and BELL, despite having small and fluctuating ratios, showed improvement toward the third quarter of 2024.

Table 3. EBIT to Total Assets Ratio (X3) of Textile Companies for the Period 2020-2024

CODE	2020	2021	2022	2023	2024	QUARTER 2024		
						Q1	Q2	Q3
ARGO	-0,04	-0,01	-0,06	-0,01		0,00	0,00	0,00
TFCO	0,00	0,05	0,01	0,01		0,00	0,00	0,01
SRIL	0,05	-0,96	-0,39	-0,23		-0,02	-0,04	-0,11
HDTX	-0,15	-0,13	-0,29	-0,07		-0,03	-0,08	-0,06
INOV	-0,01	0,04	-0,04	-0,03		-0,02	-0,04	0,01
MYTX	-0,04	0,12	-0,02	-0,02		0,02	0,03	0,03
INDR	0,01	0,11	0,06	-0,05	-0,03			
BELL	-0,03	0,02	0,02	0,03	0,03			

Source www.idx.co.id processed, 2025

Table 4. Equity to Debt Ratio (X4) of Textile Companies for the Period 2020-2024

CODE	2020	2021	2022	2023	2024	QUARTER 2024		
						Q1	Q2	Q3
ARGO	-0,53	-0,53	-0,55	0,14		0,14	0,13	0,14
TFCO	10,47	9,82	11,35	12,41		12,24	12,29	13,33
SRIL	0,57	-0,24	-0,51	-0,60		-0,60	-0,61	-0,63
HDTX	0,06	-0,06	-0,23	-0,28		-0,30	-0,33	-0,32
INOV	0,63	0,60	0,41	0,36		0,33	0,32	0,42
MYTX	0,63	1,08	1,17	1,25		1,42	1,60	1,71
INDR	0,97	1,05	1,15	1,02	1,04			
BELL	0,86	0,98	0,99	1,00	0,87			

Source: www.idx.co.id processed, 2025

Based on the analysis results in the table 4, ARGO and SRIL showed negative equity-to-debt ratios, although ARGO began to demonstrate improvement with a ratio of 0.14 in the third quarter of 2024. HDTX also experienced a decline, from 0.06 in 2020 to -0.32 in the third quarter of 2024, indicating increased reliance on debt. Conversely, TFCO recorded a significantly higher ratio compared to other companies, increasing from 10.47 in 2020 to 13.33 in the third quarter of 2024, which indicates a strong capital structure. INOV, MYTX, INDR, and BELL maintained positive ratios, with MYTX showing a significant increase from 1.08 in 2021 to 1.71 in the third quarter of 2024, indicating faster equity growth relative to its debt.

Based on table 5 related to data on the ratio of sales to total assets, TFCO, INOV, MYTX, INDR, and BELL demonstrated relatively stable and positive sales performance. TFCO experienced a slight decline from 0.47 in 2020 to 0.14 in the third quarter of 2024, while INOV and MYTX recorded decreases from 0.65 and 0.46 in 2020 to 0.51 and 0.42 in the third quarter of 2024, respectively. SRIL also showed a declining ratio, with sales ratio dropping from 0.69 in 2020 to 0.34 in the third quarter of 2024. Meanwhile, HDTX recorded a consistently low ratio, stagnating around 0.00 over the past five years, reflecting difficulties in increasing its sales. Overall, companies with low sales ratios indicate limitations in the effectiveness of utilizing their assets to generate revenue. After conducting the analysis using the Altman Z-Score model, the results are shown in table 6.

Table 5. Sales to Total Assets Ratio (X5) of Textile Companies for the Period 2020-2024

CODE	2020	2021	2022	2023	2024	QUARTER 2024		
						Q1	Q2	Q3
ARGO	0,05	0,06	0,08	0,09		0,02	0,02	0,03
TFCO	0,47	0,64	0,67	0,58		0,14	0,13	0,14
SRIL	0,69	0,69	0,69	0,50		0,12	0,21	0,34
HDTX	0,03	0,03	0,02	0,00		0,00	0,00	0,00
INOV	0,65	0,71	0,69	0,60		0,15	0,31	0,51
MYTX	0,46	0,48	0,59	0,53		0,15	0,27	0,42
INDR	0,77	0,98	1,08	0,96	1,10			
BELL	0,97	0,82	0,88	1,02	1,00			

Source: www.idx.co.id processed, 2025

Table 6. Z-Score Results of Textile Companies for the Period 2020-2024

CODE	2020	Cat	2021	Cat	2022	Cat	2023	Cat	2024	QUARTER 2024			Cat.
										Q1	Q2	Q3	
ARGO	-5,54	DZ	-5,49	DZ	-5,09	DZ	-3,22	DZ		-3,96	-3,96	-3,94	DZ
TFCO	7,10	SZ	7,17	SZ	7,89	SZ	8,48	SZ		7,90	7,92	8,61	SZ
SRIL	2,00	GZ	-4,38	RZ	-2,63	DZ	-3,19	DZ		-2,97	-3,11	-3,47	DZ
HDTX	-8,11	DZ	-9,16	DZ	-12,66	DZ	-13,37	DZ		-13,43	-13,84	-14,26	DZ
INOV	1,05	DZ	1,21	DZ	0,64	DZ	0,43	DZ		-0,07	-0,02	0,48	DZ
MYTX	0,39	DZ	1,54	DZ	1,03	DZ	0,99	DZ		0,86	1,15	1,37	DZ
INDR	1,83	GZ	2,55	GZ	2,60	GZ	1,83	GZ	2,09				GZ
BELL	1,79	DZ	1,93	GZ	1,99	GZ	2,23	GZ	2,05				GZ

Source: www.idx.co.id processed, 2025

Turnaround strategy is a crucial step for companies operating within the distress zone. According to Ogbu (Ogbu et al., 2023), this strategy involves operational restructuring, resource optimization, and cost efficiency improvement. When effectively implemented, turnaround strategies can drive sustainable business growth. PT Argo Pantes Tbk (ARGO), which has been in the distress zone since 2020, has certainly undertaken various efforts to maintain operational continuity. Since 2019, ARGO has engaged in an operational cooperation agreement with PT Argo Manunggal Triasta (AMT), where AMT took over production using ARGO's machinery, while sales management remained under AMT's control. This strategy reduced production costs; however, ARGO still faced financial pressures due to high debt levels and declining demand in the textile sector (Prima, 2021). In 2021, Argo shifted towards asset leasing business, which increased net income by 21%, but financial burdens remained a challenge. Subsequently, in July 2023, ARGO conducted a private placement by issuing 2.38 billion shares to convert debt amounting to IDR 1.61 trillion, thereby alleviating liquidity pressure (Vauzi, 2023). Although these measures helped reduce financial burdens, they were insufficient to fully remove ARGO from the distress zone.

Efforts by PT Panasia Indo Resources Tbk (HDTX) began in 2020. Initially, the company explored the garment business on a small scale (Muchtar, 2021). In 2021, HDTX shifted focus to asset optimization by leasing unused warehouses. In 2022, the company attempted to offer subcontracting services for spun yarn production, but this initiative was discontinued. Ultimately, in 2023, HDTX fully concentrated on warehouse leasing as its primary revenue source. Despite these efforts, HDTX failed to exit the distress zone, culminating in January 2025 when the Indonesia Stock Exchange (IDX) forcibly delisted HDTX shares due to continued poor performance (Wati, 2025).

Since 2020, PT Asia Pacific Investama Tbk (MYTX) has implemented various strategies to improve its financial condition and enhance competitiveness. The company focused on production efficiency, product diversification, human resource investment, as well as domestic and export market expansion. Additionally, MYTX optimized collaborations with customers and pursued new market opportunities. These efforts began to yield positive results in 2024, with MYTX recording significant increases in sales and profits. Despite challenges within the textile industry, the applied strategies demonstrated a positive impact in strengthening the company's market position.

PT Inocycle Technology Group Tbk (INOV) has applied various strategies to strengthen its business since 2020, particularly in the plastic recycling industry. The company focused on product diversification and export market expansion, successfully increasing its revenue and net profit by 2024. Collaboration with PlasticPay also helped reinforce the supply chain of raw materials, while plans to expand into recycled resin/chips business indicate proactive steps toward long-term growth. Thanks to these strategies, INOV successfully reversed its financial condition from loss to profit, although it still faces challenges in a competitive industry.

Meanwhile, PT Sri Rejeki Isman Tbk (SRIL) was in the Grey Zone in 2020 before experiencing a financial crisis in 2021 due to a heavy debt burden and the impact of the COVID-19 pandemic. The company filed for a Postponement of Debt Payment Obligations (PKPU) and attempted debt restructuring but failed to reach an effective agreement. Fitch Ratings downgraded SRIL's credit rating to Restricted Default, reflecting severe liquidity pressure. Following a series of legal proceedings, the Supreme Court rejected SRIL's appeal, and in February 2025, the company was officially declared bankrupt.

PT Trisula Textile Industries Tbk (BELL), which was in the Distress Zone in 2020, showed improvement and managed to remain in the Grey Zone over the past four years through several strategic initiatives. The company expanded its retail network by opening new outlets under the JOBB and Jack Nicklaus brands and developed innovative products such as "healthy fabrics" to enhance competitiveness. Additionally, BELL increased production capacity by constructing a new factory in Solo and adopted an omnichannel sales strategy to reach a wider consumer base. Operational efficiency was also pursued through machine renewal and employee training programs. With a focus on the domestic market and strict cost discipline, BELL successfully increased revenue and demonstrated significant improvements in its financial performance.

PT Indo-Rama Synthetics Tbk (INDR) has remained in the Grey Zone over the last five years by maintaining financial performance stability, though not yet in the Safe Zone. The company focused on product diversification, particularly in the synthetic fiber and textile sectors, to cope with industry challenges. INDR also optimized operational efficiency through improvements in production technology and cost management to stay competitive. Export market expansion was another key strategy to boost revenue. Although still in the Grey Zone, these measures reflect the company's commitment to sustaining its business amid intense industry competition.

Meanwhile, PT Tifico Fiber Indonesia Tbk (TFCO) has remained in the Safe Zone for five consecutive years, maintaining Z-Score values above 2.99 annually. This indicates strong financial stability and the ability to avoid bankruptcy risk. TFCO continues to optimize polyester fiber production efficiency, maintain balance between market demand and production capacity, and strengthen export strategies to expand its market share. With solid financial fundamentals, the company is well-positioned to withstand challenges in the textile industry and ensure long-term business sustainability.

The turnaround strategies implemented by textile companies in this study—such as operational efficiency, debt reduction, and capital structure improvement—not only reflect internal recovery efforts but also serve as signals sent by management to investors, creditors, and other stakeholders regarding the prospects for business continuity. In the context of signaling theory,

these actions can be interpreted as positive signals that demonstrate management's commitment to stabilizing the company's financial condition. This aligns with the Altman Z-Score results, which show that some companies experienced score improvements from the previous year, indicating positive responses to the strategies undertaken. Thus, the recovery strategies impact not only financial aspects but also function to reduce information asymmetry and enhance market confidence. Nevertheless, the effectiveness of these signals depends on the consistency of strategy implementation over the long term.

CONCLUSIONS, LIMITATIONS, AND SUGGESTIONS

Based on the analysis of eight companies during the period 2020–2024, four companies were identified as being in the distress zone, indicating significant financial difficulties. These include PT Argo Pantes Tbk (ARGO), PT Panasia Indo Resources Tbk (HDTX), PT Inocycle Technology Group Tbk (INOV), and PT Asia Pacific Investama Tbk (MYTX). PT Sri Rejeki Isman Tbk (SRIL) was declared bankrupt in 2025 after remaining in the distress zone for four consecutive years. PT Trisula Textile Industries Tbk (BELL) successfully exited the distress zone and moved into the grey zone, while PT Indo-Rama Synthetics Tbk (INDR) remained in the grey zone for five consecutive years. PT Tifico Fiber Indonesia Tbk (TFCO) consistently maintained its position in the safe zone over the five-year period, with Z-Score values indicating strong financial stability.

These findings highlight the significant financial challenges currently faced by the textile industry in Indonesia. Overall, the industry remains vulnerable, with many companies experiencing financial pressures. Therefore, improved financial management strategies and supportive industrial policies are urgently needed to ensure the sustainability and growth of the sector amid increasing market competition. The findings of this study also reinforce the relevance of the Altman Z-Score model as a predictive tool for bankruptcy, particularly within the context of emerging markets. From a practical standpoint, the results underscore the need for more proactive financial management and the implementation of early warning mechanisms to prevent corporate bankruptcy, especially in the financially pressured textile sector.

However, this study has several limitations. First, out of approximately 15 textile companies, only eight consistently published financial statements, which means that the analysis may not fully represent the overall condition of Indonesia's textile industry. Second, data availability posed a limitation, as some companies in the sample had not yet published their 2024 financial reports at the time of this research. This may affect the completeness of the data and the validity of the analysis results, and therefore caution is required in generalizing the findings.

For future research, it is recommended to include a broader and more representative sample of textile companies, including those that have not consistently published their financial statements. Moreover, the use of more comprehensive and up-to-date data, especially the most recent financial reports, will enhance the accuracy and validity of the analysis. Future studies may also consider incorporating non-financial variables that could influence bankruptcy conditions, to provide a more holistic understanding of the dynamics within the textile industry.

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