BANKRUPTCY AND FRAUD ANALYSIS OF BANKING INSTITUTIONS IN INDONESIA: EVALUATION OF ALTMAN Z-SCORE AND BENEISH M-SCORE IN DETECTING EARNINGS MANIPULATION IN ANNUAL REPORTS

THESIS

To Fulfill the Requirement
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BANKRUPTCY AND FRAUD ANALYSIS OF BANKING INSTITUTIONS IN INDONESIA: EVALUATION OF ALTMAN Z-SCORE AND BENEISH M-SCORE IN DETECTING EARNINGS MANIPULATION IN ANNUAL REPORTS

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ABSTRACT

Financial reports are very important for banks because they show their financial condition and help maintain trust from investors, regulators, and the public. However, cases of manipulation and fraud often reduce this trust and can threaten the stability of the banking sector. In Indonesia, banks have a key role in supporting economic growth, so accurate reporting is crucial. This study uses the Altman Z-score to measure bankruptcy risk and the Beneish M-score to detect possible earnings manipulation. Both models were applied to 40 banking companies listed on the Indonesia Stock Exchange during 2021–2023 to see how well they can show signs of financial problems and irregularities.

The results show that 37% of the companies were categorized as financially distressed according to the Altman Z-score, while 24% were suspected of manipulating earnings based on the Beneish M-score. Only a small portion, around 6.67%, were detected by both models at the same time. This means that each model highlights different aspects of risk. The Altman Z-score was more consistent in showing financial distress, while the Beneish M-score varied more across the years. From these findings, it can be concluded that using both models together can give a better picture of financial health and help stakeholders detect problems earlier.

Keywords: altman z-score, banking institutions, beneish m-score, earnings manipulation, financial distress

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ABSTRAK

Laporan keuangan sangat penting bagi bank karena menunjukkan kondisi keuangan mereka dan membantu menjaga kepercayaan dari investor, regulator, dan masyarakat. Namun, kasus manipulasi dan kecurangan sering kali mengurangi kepercayaan tersebut dan dapat mengancam stabilitas sektor perbankan. Di Indonesia, bank memiliki peran penting dalam mendukung pertumbuhan ekonomi, sehingga pelaporan yang akurat menjadi sangat penting. Penelitian ini menggunakan Altman Z-score untuk mengukur risiko kebangkrutan dan Beneish M-score untuk mendeteksi kemungkinan manipulasi laba. Kedua model tersebut diterapkan pada 40 perusahaan perbankan yang terdaftar di Bursa Efek Indonesia selama periode 2021–2023 untuk melihat sejauh mana model dapat menunjukkan tanda-tanda masalah dan ketidakwajaran keuangan.

Hasil penelitian menunjukkan bahwa 37% perusahaan dikategorikan mengalami kesulitan keuangan berdasarkan Altman Z-score, sementara 24% diduga melakukan manipulasi laba berdasarkan Beneish M-score. Hanya sebagian kecil, sekitar 6,67%, yang terdeteksi oleh kedua model secara bersamaan. Hal ini berarti bahwa masing-masing model menyoroti aspek risiko yang berbeda. Altman Z-score lebih konsisten dalam menunjukkan kesulitan keuangan, sedangkan Beneish M-score lebih bervariasi sepanjang tahun. Dari temuan ini dapat disimpulkan bahwa penggunaan kedua model secara bersamaan dapat memberikan gambaran yang

lebih baik tentang kesehatan keuangan dan membantu para pemangku kepentingan mendeteksi masalah lebih awal.
Kata kunci: altman z-score, beneish m-score, earnings manipulation, financial distress, perbankan

SUMMARY

BANKRUPTCY AND FRAUD ANALYSIS OF BANKING INSTITUTIONS IN INDONESIA: EVALUATION OF ALTMAN Z-SCORE AND BENEISH M-SCORE IN DETECTING EARNINGS MANIPULATION IN ANNUAL REPORTS

1. Background

Financial statements play an essential role in informing stakeholders about a company's financial condition and performance. For banks, which are central to economic stability and capital allocation, transparent reporting is even more critical. However, the credibility of financial reports is often challenged by earnings manipulation, where companies present misleading information to show healthier conditions than reality. This practice undermines market confidence and can conceal financial distress. Reports by the Association of Certified Fraud Examiners (2024) indicate that financial statement fraud still accounts for a notable portion of global fraud cases. In Indonesia, the banking sector has experienced instances of financial misconduct, creating concerns about the accuracy of disclosed information. Against this backdrop, financial models such as the Altman Z-score, which predicts bankruptcy, and the Beneish M-score, which detects earnings manipulation, offer valuable tools to identify risks and improve monitoring of banking institutions.

2. Formulation of Problem

The following are research questions for this study:

1. How many banking companies in Indonesia were classified as financially distressed from 2021 to 2023 based on the Altman Z-score?
2. How many banking companies were indicated as potential manipulators from 2021 to 2023 based on the Beneish M-score?
3. How do the detection rates of the Altman Z-score and Beneish M-score compare year by year?

4. Are there companies that were simultaneously classified as high-risk by both models?

3. Research Objectives

The primary objectives of this research can be summarized as follows:

1. To identify the number of banking companies classified as financially distressed from 2021 to 2023 using the Altman Z-score model.
2. To identify the number of banking companies indicated as potential manipulators from 2021 to 2023 using the Beneish M-score model.
3. To compare the yearly detection rates between the Altman Z-score and Beneish M-score models.
4. To evaluate whether there are companies simultaneously flagged as high-risk by both models.

4. Research Methods

The study employs a descriptive quantitative research design. It does not test predictive hypotheses but instead classifies firms based on the thresholds established in the Altman and Beneish models. The population comprises all banks listed on the Indonesia Stock Exchange between 2020 and 2023, but the focus is on the 2021–2023 period. Purposive sampling was applied to ensure consistent financial reporting and data availability, resulting in a final sample of 40 banks and 120 firm-year observations. Annual report data were collected from company websites and the IDX portal. The Altman Z-score, adjusted for non-manufacturing firms, was used to categorize banks as distressed ($Z < 1.81$) or not distressed. The Beneish M-score was applied to identify potential manipulators ($M > -1.78$). Calculations were processed in Microsoft Excel, and the outcomes were analyzed using descriptive statistics, frequency tables, and comparisons across years to identify trends and overlaps.

5. Findings and Discussion

The results indicate differences in both scale and pattern between the two models. Using the Altman Z-score, 44 of the 120 observations (37%) were categorized as financially distressed. The proportion remained stable across years, with 38% in 2021, 35% in 2022, and 38% in 2023, suggesting persistent structural weaknesses in certain banks. In contrast, the Beneish M-score flagged 28 observations (24%) as likely manipulators, though its results were more volatile: 13% in 2021, 35% in 2022, and 25% in 2023. Only 8 cases (6.67%) were flagged simultaneously by both models, demonstrating limited overlap. This finding implies that the Altman Z-score captures long-term financial fragility, while the Beneish M-score is more sensitive to short-term managerial discretion in reporting. Together, the two models highlight complementary dimensions of risk—structural financial health versus opportunistic accounting practices—thus enriching the analysis of banking institutions' vulnerabilities.

6. Conclusion and Recommendation

The study concludes that the Altman Z-score and Beneish M-score are effective in identifying financial risks in Indonesian banking institutions but operate along different dimensions. The Z-score consistently reveals structural financial distress, while the M-score fluctuates with year-specific conditions, pointing to potential manipulation. The low overlap between the two models indicates that neither can substitute for the other; instead, they should be applied jointly to gain a more complete view of financial health and integrity. For regulators, this suggests the importance of integrating both models into supervisory frameworks to enhance early detection of distress and fraud. Investors may use the models to refine decision-making and avoid exposure to high-risk institutions. For bank management, the findings stress the need to strengthen governance and improve financial transparency. Future research should extend the timeframe, include other sectors, or integrate additional forensic tools to build a broader picture of financial risk detection.

RINGKASAN

KEBANGKRUTAN DAN FRAUD PADA LEMBAGA PERBANKAN DI INDONESIA: EVALUASI ALTMAN Z-SCORE DAN BENEISH M-SCORE DALAM MENDETEKSI MANIPULASI LABA PADA LAPORAN TAHUNAN

1. Latar Belakang

Laporan keuangan memainkan peran penting dalam menginformasikan para pemangku kepentingan tentang kondisi dan kinerja keuangan perusahaan. Bagi bank, yang merupakan pusat stabilitas ekonomi dan alokasi modal, pelaporan yang transparan bahkan lebih penting. Namun, kredibilitas laporan keuangan sering kali ditantang oleh manipulasi laba, di mana perusahaan menyajikan informasi yang menyesatkan untuk menunjukkan kondisi yang lebih sehat daripada kenyataan. Praktik ini merusak kepercayaan pasar dan dapat menyembunyikan kesulitan keuangan. Laporan oleh Association of Certified Fraud Examiners (2024) menunjukkan bahwa penipuan laporan keuangan masih merupakan bagian penting dari kasus penipuan global. Di Indonesia, sektor perbankan telah mengalami kasus pelanggaran keuangan, yang menimbulkan kekhawatiran tentang keakuratan informasi yang diungkapkan. Dengan latar belakang ini, model keuangan seperti Altman Z-score, yang memprediksi kebangkrutan, dan Beneish M-score, yang mendeteksi manipulasi laba, menawarkan alat yang berharga untuk mengidentifikasi risiko dan meningkatkan pemantauan lembaga perbankan.

2. Rumusan Masalah

Berikut adalah pertanyaan penelitian untuk studi ini:

1. Berapa banyak perusahaan perbankan di Indonesia yang diklasifikasikan sebagai perusahaan yang mengalami kesulitan keuangan dari tahun 2021 hingga 2023 berdasarkan Skor-Z Altman?
2. Berapa banyak perusahaan perbankan yang terindikasi sebagai manipulator potensial dari tahun 2021 hingga 2023 berdasarkan Skor-M Beneish?

3. Bagaimana tingkat deteksi Skor-Z Altman dan Skor-M Beneish dibandingkan dari tahun ke tahun?

3. Tujuan Penelitian

Tujuan utama penelitian ini dapat diringkas sebagai berikut:

1. Mengidentifikasi jumlah perusahaan perbankan yang diklasifikasikan sebagai perusahaan yang mengalami kesulitan keuangan (financial distressed) dari tahun 2021 hingga 2023 menggunakan model Altman Z-score.
2. Mengidentifikasi jumlah perusahaan perbankan yang terindikasi sebagai manipulator potensial dari tahun 2021 hingga 2023 menggunakan model Beneish M-score.
3. Membandingkan tingkat deteksi tahunan antara model Altman Z-score dan Beneish M-score.
4. Mengevaluasi apakah terdapat perusahaan yang secara bersamaan ditandai berisiko tinggi oleh kedua model.

4. Metode Penelitian

Penelitian ini menggunakan desain penelitian kuantitatif deskriptif. Penelitian ini tidak menguji hipotesis prediktif, melainkan mengklasifikasikan perusahaan berdasarkan ambang batas yang ditetapkan dalam model Altman dan Beneish. Populasi penelitian meliputi seluruh bank yang terdaftar di Bursa Efek Indonesia antara tahun 2020 dan 2023, tetapi fokusnya adalah pada periode 2021–2023. Pengambilan sampel secara purposif diterapkan untuk memastikan konsistensi pelaporan keuangan dan ketersediaan data, menghasilkan sampel akhir sebanyak 40 bank dan 120 observasi perusahaan per tahun. Data laporan tahunan dikumpulkan dari situs web perusahaan dan portal BEI. *Altman Z-score*, yang disesuaikan untuk perusahaan non-manufaktur, digunakan untuk mengkategorikan bank sebagai bank yang tertekan ($Z < 1{,}81$) atau tidak tertekan. *Beneish M-score* diterapkan untuk mengidentifikasi potensi manipulator ($M > -1{,}78$). Perhitungan diproses di *Microsoft Excel*, dan hasilnya dianalisis menggunakan statistik

deskriptif, tabel frekuensi, dan perbandingan lintas tahun untuk mengidentifikasi tren dan *overlap*.

5. Hasil dan Pembahasan

Hasilnya menunjukkan perbedaan skala dan pola antara kedua model. Dengan menggunakan Altman Z-score, 44 dari 120 observasi (37%) dikategorikan sebagai mengalami kesulitan keuangan. Proporsinya tetap stabil selama bertahun-tahun, dengan 38% pada tahun 2021, 35% pada tahun 2022, dan 38% pada tahun 2023, yang menunjukkan kelemahan struktural yang persisten pada bank-bank tertentu. Sebaliknya, Skor-M Beneish menandai 28 observasi (24%) sebagai kemungkinan manipulator, meskipun hasilnya lebih fluktuatif: 13% pada tahun 2021, 35% pada tahun 2022, dan 25% pada tahun 2023. Hanya 8 kasus (6,67%) yang ditandai secara bersamaan oleh kedua model, menunjukkan tumpang tindih yang terbatas. Temuan ini menyiratkan bahwa *Altman Z-score* menangkap kerapuhan keuangan jangka panjang, sementara *Beneish M-score* lebih sensitif terhadap diskresi manajerial jangka pendek dalam pelaporan. Bersama-sama, kedua model ini menyoroti dimensi risiko yang saling melengkapi kesehatan keuangan struktural versus praktik akuntansi oportunistik—sehingga memperkaya analisis kerentanan lembaga perbankan.

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CHAPTER I
INTRODUCTION

1.1. Background

Financial reports play a vital role in offering stakeholders' valuable insights into a company's financial status and performance. These documents are indispensable for decision-making, investment evaluations, and adhering to regulatory standards. Consequently, stakeholders frequently rely on information extracted from financial reports when making business decisions (Ariesta & Nurhidayah, 2020). Nevertheless, the credibility of financial reports can be jeopardized by earnings manipulation, where companies manipulate financial data to present a more positive image than the actual situation. Inflating net profit is a prevalent method used to enhance a company's financial performance (Kolsi, M.C., Al-Hiyari, A., Hussainey, K., 2022).

Banking institutions are the backbone of the financial system and play an important role in ensuring economic stability. In Indonesia, as in many countries, banking institutions are a major contributor to the economic stability of any country and a driver of economic growth and prosperity through the mobilization and allocation of capital. banking institutions are not exempt from the obligation to reveal financial information through annual reports. This transparency allows shareholders, regulators, and stakeholders to assess their performance and ongoing viability.

However, as the financial world becomes more complex and financial instruments become more sophisticated, there are growing concerns about the accuracy and reliability of the financial information presented in these reports, as well as the possibility of manipulating this information to mislead shareholders and government authorities. These concerns have underscored the importance of ensuring transparency and accountability in financial reporting. The integrity and transparency of financial reporting is important, but the possibility of manipulation poses serious problems. The Report to the Nations by the Association of Certified

Fraud Examiners, Inc. (2024) underscored this issue, revealing that financial statement fraud constituted 5% of the fraud cases identified globally in 2024.

The integrity and transparency of financial reporting are of paramount importance, given the potential consequences of manipulation. Financial fraud, characterized by misleading practices, often results in significant financial losses for victims. Fraud is an act of misleading others, often causing financial losses for the victims. Fraudulence in financial reporting is usually done through financial statement tampering, causing discrepancy between a company's financial performance and other non-financial indicators like employee head count, retail outlets, and warehouse space. This discrepancy may give oversight entities warning signs for potential fraud in the preparation of the financial statements. (Brazel, Jones & Zimbelman, 2009)

The banking sector, as a cornerstone of the global economy, plays a vital role in facilitating economic transactions, providing financial services, and allocating capital. However, the sector is susceptible to various forms of fraud and misconduct, ranging from insider trading and embezzlement to money laundering and accounting fraud. In recent years, the banking landscape in Indonesia has witnessed a notable surge in the development of banks, signaling growth and expansion within the industry. However, alongside this growth, there has been a concerning trend of significant decline observed in conventional financial institutions (Pradesyah, Yuslem, Batubara, 2021). This decline has been attributed to various factors, including instances of fraud perpetrated by employees against funds collected from the public. (Bara, Affandi, Farid, & Marzuki, 2021)

Corporate scandals—such as the collapse of Enron and WorldCom in the early 2000s, FIFA in 2015, and Wirecard and Yes Bank in the 2020s—have highlighted the serious impact of fraud on financial markets and investor confidence. A 2024 Report to the Nations by the Association of Certified Fraud Examiners (ACFE) found that over half of occupational fraud cases occur due to weak internal controls or the overriding of existing ones. These high-profile cases revealed significant weaknesses in corporate governance, internal systems, and regulatory oversight,

leading to growing demands for greater transparency and accountability in the banking sector.

This study investigates the effectiveness of the Altman Z-score and Beneish M-score in detecting financial distress and earnings manipulation in the Indonesian banking sector. The Altman Z-score, developed in 1968, predicts bankruptcy using five financial ratios, while the Beneish M-score, introduced in 1999, detects potential earnings manipulation using eight financial ratios.

1.2. Formulation of Problem

To provide context and clarity about the study's purpose and goals, the following section summarizes the main research points.

1.2.1. Statement of Problem

The need to detect financial instability and with the likelihood of earnings manipulation for banking sector outlines the relevance of this study. Altman Z-score and Beneish M-score has often been used in identifying earnings manipulation within firms. Despite their widespread use, the applicability of these metrics in the banking sector remains a question.

1.2.2. Preliminary Questions

To address this issue, the writer has outlined the following research questions, aiming to explore the relationship between the Altman Z-score, the Beneish M-score, and their role in financial distress and fraud detection:

1. How many banking companies in Indonesia were classified as financially distressed from 2021 to 2023 based on the Altman Z-score?
2. How many banking companies were indicated as potential manipulators from 2021 to 2023 based on the Beneish M-score?
3. How do the detection rates of the Altman Z-score and Beneish M-score compare year by year?
4. Are there companies that were simultaneously classified as high-risk by both models?

1.3. Research Objectives

The main objective of this study is to evaluate the effectiveness of the Altman Z-score and the Beneish M-score models in identifying financial risk indicators when applied independently. Specifically, the study aims to determine whether each model—without the use of additional tools—can reliably detect signs of financial distress and potential earnings manipulation in the financial statements of Indonesian banking companies. Although the two models were developed for different purposes, this research examines their standalone performance in uncovering financial irregularities.

The primary objectives of this research can be summarized as follows:

1. To identify the number of banking companies classified as financially distressed from 2021 to 2023 using the Altman Z-score model.
2. To identify the number of banking companies indicated as potential manipulators from 2021 to 2023 using the Beneish M-score model.
3. To compare the yearly detection rates between the Altman Z-score and Beneish M-score models.
4. To evaluate whether there are companies simultaneously flagged as high-risk by both models.

1.4. Research Contributions

This research aims to make both theoretical and practical contributions as follows.

1.4.1. Theoretical Contribution

1. The methodology and findings provide a foundation for future studies on financial distress and fraud detection, encouraging further exploration and refinement of predictive models in various economic contexts and industries.
2. This study reinforces the theoretical distinction between the Altman Z-score and Beneish M-score by showing that each model detects different dimensions of financial risk—structural distress vs. earnings manipulation—when applied independently.

3. The findings support and connect two theoretical frameworks—bankruptcy theory and fraud theory—highlighting that financial distress and manipulation risk may occur separately but can also intersect under specific financial conditions.
4. By applying both models in the highly regulated banking sector, the study contributes to theory by confirming that traditional ratio-based models remain relevant for fraud and distress detection even in environments with strict financial oversight.

1.4.2. Practical Contribution

1. Banks can utilize the findings to improve internal risk management by identifying early signs of financial distress and earnings manipulation, enhancing overall financial stability.
2. Investors can use the Altman Z-score and Beneish M-score to make more informed investment decisions, reducing the risk of investing in financially unstable or fraudulent institutions.
3. Government regulatory bodies can apply the research to enhance their oversight and policy formulation, ensuring a more stable and transparent banking sector.