

Application Of The Beneish M-Score And Z-Score Models In Soe Companies

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ABSTRACT

Financial reports, such as those of SOEs, provide an overview of a company's financial status. SOEs are often considered less transparent in their financial reporting. As a result, SOEs are more vulnerable to financial statement fraud. The purpose of this study is to collect data on the utilization of the Beneish M-Score model and the Altman Z-Score model in detecting financial statement fraud in state-owned companies from 2008 to 2021. This study uses descriptive statistics and secondary data types of financial statements of state-owned companies that come from the company's website. The findings of this study include Z-Score shows the unhealthy condition of the company; Unhealthy financial conditions are not the only factor that causes companies to manipulate financial statements; Unhealthy financial health conditions are not always a factor that causes companies to manipulate financial statements; Financial manipulation carried out by companies often has a bad impact on the company's financial condition in the future.

Keywords : Beneish M-Score, Z-Score, BUMN

I. INTRODUCTION

Financial reports summarize the company's financial position. Furthermore, this information may be utilized to present a complete picture of the company's financial performance. As a result, while making business decisions, people may rely on information from financial reports (Ariesta & Nurhidayah, 2020). Financial reports, according to Trianto et al. (2017), are reports that describe the company's financial status at a specific moment. Companies can use financial reports to present information about their current financial status and operational performance over a certain time period. The information presented in financial reports must be accurate and relevant, according to the appropriate National and International Accounting Standards (SAK-PSAK and IAS-IFRS). This is because accounting records must cover all transactions in order for financial reports to have relevant information in accordance with current accounting standards (Stickney & Weil, 2007). FIFO and Average are corporate management evaluations of business continuity (going concern) that outline how an entity's circumstances and conditions in the present and future periods, as well as how the corporate governance process has been

effective in reducing the occurrence of fraud, human error, and minimizing risks that are damaging to the firm and all other stakeholders.

In this scenario, supplying incorrect information, whether deliberate or not, is a type of legal offense. Similarly, in the form of actions designed to delete information about activities and business financial information. Facts released to the public in the form of internal accounting problems lead to the organization's demise. Furthermore, the Enron case signaled the beginning of exposing information concerning the reasons that led to the failure of other major American corporations, including Global Crossing, Tyco International, and Xerox Corporation, Adelphia Communication, Worldcom, and Walt Disney Company (Irianto, 2003). BUMN (State Owned Enterprises) enterprises are not immune to financial report modification or fraud. BUMN enterprises are frequently perceived as having less transparency in their financial reporting. As a result, state-owned enterprises are more prone to financial statement fraud. According to Hadiwidjojo and Lukviarman (2015), a lack of openness can contribute to misleading financial reporting.

Furthermore, state-owned enterprises are frequently overly

reliant on the government, both in terms of regulation and finance. This might have an impact on management decisions when it comes to reporting corporate finances. Hanafi and Rahmawati (2015) conducted research. demonstrates that reliance on the government may be a factor contributing to dishonest financial reporting. BUMN enterprises wield considerable power and frequently play a crucial role in the national economy. As a result, the financial health of BUMN enterprises can be a significant indication of the overall health of the national economy. According to Rusmin and Ghozali (2015), the financial health of state-owned enterprises can have an impact on national economic performance. The reason for committing fraud, according to agency theory, is influenced by the interests of managers who can affect shareholders' judgment of their performance (Kontesa et al., 2021).

Since the emergence of scandals and incidents of accounting fraud at state-owned enterprises, the public's perception has shifted have less faith in their relevance and veracity. Essentially, the financial status is reported in the financial statements to offer a summary of the company's facts. Altman's model, an investigation of company insolvency, may be used to identify fake financial statements, according to Rosplock (2001). Furthermore,

according to Barsky et al. (2003), there are two analytical approaches for detecting fraudulent financial statements. First, we may utilize Altman's 1968 model, which employs a set of liquidity, profitability, leverage, solvency, and activity ratios that are supposed to predict firm failure. Furthermore, Altman's model, an investigation of company insolvency, can be used to identify fake financial statements, according to Rosplock (2001). Furthermore, according to Barsky et al. (2003), there are two analytical approaches for detecting fraudulent financial statements. First, we may utilize Altman's 1968 model, which employs a set of liquidity, profitability, leverage, solvency, and activity ratios that are supposed to predict firm failure. These ratios are then calculated using the Z-score, a widely used formula. The research of Barsky et al. (2003) was used as a reference in this investigation. (Barsky et al., 2003) employs the Altman Z-Score financial distress prediction model and the Beneish M-Score analytical model to detect fraud in financial statements. As a result, the researchers used these two models to the investigation of financial statement fraud detection in the sampled BUMN enterprises. Through the Z-Score (revised) and the new Beneish model, the Beneish M-Score, which consists of eight primary ratio indices described in the M-Score. This distinguishes this

study from that of Barsky et al. (2003).

II. RESEARCH METHOD

In this study, descriptive statistical research was used. According to Hasan (2001), descriptive statistical research is a subset of statistical research that focuses on how to collect data and communicate it to laypeople in a logical manner. The data utilized in this study is secondary data. A deductive approach was used in the data research analysis approach. This study uses purposive sampling in determining the research sample with the category of BUMN companies that publish financial reports and can be accessed from 2008 to 2021, and non-financial BUMN companies. Two models were used to examine the data in this investigation. Beneish's (1999) methodology is used to evaluate data in order to uncover earnings disclosure in the form of earnings overstatement. Second, Altman's z-score methodology is utilized to identify financial statement disclosures in corporate bankruptcy.

III. RESULTS AND DISCUSSION

The Beneish M-Score and Z-Score were used at PT. Pertamina (Persero).

Table 1. M-Score and Z-Score of PT Pertamina

| Year | M-Score | Z-Score |
|------|---------|---------|
| 2008 | -2.23 | 3.2 |
| 2009 | -2.28 | 2.6 |

| | | |
|------|-------|-----|
| 2010 | -0.16 | 3.6 |
| 2011 | -2.33 | 3.2 |
| 2012 | -1.90 | 3.0 |
| 2013 | -1.31 | 2.6 |
| 2014 | -3.00 | 2.5 |
| 2015 | -2.82 | 1.9 |
| 2016 | -2.60 | 2.1 |
| 2017 | -1.39 | 2.0 |
| 2018 | -2.25 | 2.1 |
| 2019 | -2.55 | 2.0 |
| 2020 | -2.91 | 1.7 |
| 2021 | -2.15 | 1.8 |

Pertamina (Persero) manipulation from 2008 to 2021 in 2010, 2012, 2017, and 2021, as shown on the results of the Z-Score study in those years.

It is well known that the company's financial health is in poor shape (grey area / prone to bankruptcy).

According to the statement (Bell, 2008), concluded sources of strain (pressure) on the firm, which is the reason for the corporation in distorting its financial accounts. While the Z-Score value in 2009 indicates financial health is in a state prone to bankruptcy / gray area, the M-Score value in 2009 indicates no indication of manipulation, indicating that the financial condition is prone to bankruptcy / gray area is not always the cause the company manipulates the report his finances.

The Z-Score number of PT. Pertamina (Persero) in 2014, 2015, 2016, 2018, 2019, and 2020 indicates that the business's financial health is susceptible bankrupt/grey region, but the M-Score data reveal that the company had no sign of manipulation in those years. According to (Bell, 2008), this

occurs as a result of manipulation done in earlier years, which has an influence on conditions financial health in following years.

PT. Garuda Indonesia Tbk. uses the Beneish M-Score and Z-Score.

Table 2. M-Score and Z-Score of PT Garuda Indonesia

| Year | M-Score | Z-Score |
|------|---------|---------|
| 2008 | -5.11 | 1.93 |
| 2009 | -5.10 | 0.69 |
| 2010 | -13.75 | 1.53 |
| 2011 | -4.25 | 2.19 |
| 2012 | -4.72 | 2.06 |
| 2013 | -1.69 | 1.62 |
| 2014 | -6.52 | 0.49 |
| 2015 | -5.26 | 1.34 |
| 2016 | -2.86 | 1.06 |
| 2017 | -6.28 | 0.71 |
| 2018 | -4.70 | 0.74 |
| 2019 | -1.99 | 0.40 |
| 2020 | -4.24 | -1.59 |
| 2021 | -7.38 | -3.97 |

PT Garuda Indonesia Tbk from 2008 to 2012, and it does not indicate any indicators of manipulation in the report of his finances. This demonstrates that the financial position at the time was not healthy, which was not a motivating cause for PT Garuda Indonesia to distort the financial accounts. Whereas in 2013 and 2019, any sign of manipulation is revealed in the value M-Score of -1.69 in 2013 and -1.99 in 2019, so are the company's financial health conditions in 2013. This indicates that PT Garuda Indonesia is in a condition of threatened bankruptcy/distress. Assume that the company's financial

situation in 2013 and an unfavorable 2019 prompted PT Garuda Indonesia to manipulate financial records.

In 2013, 2015, 2016, 2017, 2018, 2020, and 2021, the financial situation is threatened by bankruptcy/distress, but there are no signs of manipulation. It demonstrates that the financial situation is not in good shape. Healthy is the effect of such manipulation in 2013 and 2019, respectively, in accordance with Bell's (2008) declaration that manipulation Financial statements have the potential to have a detrimental impact on future financial situations.

The Beneish M-Score and Z-Score were used at PT. Krakatau Steel (Persero) Tbk.

Table 3. M-Score and Z-Score of PT Krakatau Steel

| Year | M-Score | Z-Score |
|------|---------|---------|
| 2008 | -2.92 | 2.3 |
| 2009 | -2.56 | 2.4 |
| 2010 | -1.29 | 2.2 |
| 2011 | -1.01 | 1.9 |
| 2012 | -2.69 | 1.5 |
| 2013 | -2.62 | 1.4 |
| 2014 | -4.01 | 0.6 |
| 2015 | -5.23 | 0.3 |
| 2016 | -4.55 | 0.5 |
| 2017 | -3.93 | 0.5 |
| 2018 | -3.73 | 0.4 |
| 2019 | -3.46 | -1.6 |
| 2020 | -5.15 | -0.4 |
| 2021 | -4.12 | -0.2 |

PT Krakatau Steel's M-Score and Z-Score computations, which reveal that the company's financial health was in the gray area/prone to

bankruptcy in 2008 and 2009, although there was no sign of financial statement manipulation. This demonstrates that financial pressure in the form of a company's poor financial status is not necessarily a motivator for corporations to falsify their financial accounts. In 2010 and 2011, PT Krakatau Steel's M-Score computation revealed evidence of financial statement manipulation, as did the company's Z-Score, which suggested a situation prone to bankruptcy/gray area. This demonstrates that in 2010 and 2011, corporations manipulated their financial reporting due to poor financial situations. After it, in 2012-2021, showing that the company's financial position is in the threat of insolvency / crisis zone, suggesting that the fall in the company's financial condition was caused by manipulation in the previous year, namely 2011.

The Beneish M-Score and Z-Score were used at PT. Jasa Marga (Persero) Tbk.

Table 4. M-Score and Z-Score of PT Jasa Marga

| Year | M-Score | Z-Score |
|------|---------|---------|
| 2008 | -1.29 | 1.25 |
| 2009 | -2.01 | 1.12 |
| 2010 | -3.38 | 1.18 |
| 2011 | -0.88 | 1.13 |
| 2012 | -3.00 | 1.09 |
| 2013 | 0.81 | 1.06 |
| 2014 | -3.06 | 0.96 |
| 2015 | -1.04 | 0.81 |

| | | |
|------|-------|------|
| 2016 | 23.69 | 0.78 |
| 2017 | -2.56 | 0.81 |
| 2018 | -4.00 | 0.66 |
| 2019 | -4.08 | 0.35 |
| 2020 | -3.56 | 0.45 |
| 2021 | -3.09 | 1.36 |

PT Jasa Marga suggested manipulation in 2008, 2009, 2011, 2013, 2015, and 2016, and that the Z-Score value of PT Jasa Marga indicated that the company's financial state is threatened with bankruptcy/distress zone. This suggests that PT Jasa Marga's fabrication of financial statements is motivated by an unhealthy condition of financial strain.

The M-Score value of PT Jasa Marga does not show any indication of financial statement manipulation in 2010, 2012, 2014, 2017, 2018, 2019, 2020, and 2021, but the company's Z-Score value indicates the company's financial health position is in a state of being threatened with bankruptcy /distresszone. This is consistent with Bell's (2008) assertion that manipulation Financial statements that are inaccurate might have a detrimental influence on the organization in the future.

The Beneish M-Score and Z-Score were used at PT. Biofarma (Persero).

Table 5. M-Score and Z-Score of PT Biofarma

| Year | M-Score | Z-Score |
|------|---------|---------|
| 2008 | -2.32 | 5.43 |
| 2009 | -0.09 | 5.05 |
| 2010 | -1.64 | 4.67 |
| 2011 | -2.19 | 6.26 |
| 2012 | -1.30 | 7.29 |

| | | |
|------|-------|------|
| 2013 | 0.41 | 6.04 |
| 2014 | -1.21 | 6.40 |
| 2015 | -1.05 | 6.38 |
| 2016 | -2.77 | 6.40 |
| 2017 | -2.39 | 5.72 |
| 2018 | -2.66 | 3.91 |
| 2019 | -1.31 | 1.37 |
| 2020 | -5.85 | 1.22 |
| 2021 | -0.40 | 2.01 |

PT Biofarma's financial position was in good health in 2008, 2016, 2017, and 2018, with no sign of manipulation, while in 2009-2015, the company's M-Score score indicated manipulation. Meanwhile, PT Biofarma's Z-Score scores indicate that the company's financial health is in good shape. This suggests that the manipulation is not motivated by financial concerns at the firm.

In 2019 and 2021, the company's M-Score and Z-Score both exhibit signs of manipulation, indicating an unfavorable state of the company's health. This demonstrates that weak financial condition will be the driving reason for firms to manipulate in 2019 and 2021. 2020 demonstrates that the company's Z-Score value is unhealthy, while its M-Score number is excellent does not reveal any signals, implying that poor financial situations are not necessarily a motivator for corporations to manipulate.

The Beneish M-Score and Z-Score are used at PERUM Perumnas.

Table 6. M-Score and Z-Score of PERUM Perumnas

| Year | M-Score | Z-Score |
|------|---------|---------|
| 2008 | -0.54 | 1.05 |

| | | |
|------|--------|------|
| 2009 | 0.71 | 1.40 |
| 2010 | 0.78 | 1.57 |
| 2011 | -0.45 | 1.19 |
| 2012 | -2.36 | 0.72 |
| 2013 | 0.47 | 1.29 |
| 2014 | -0.36 | 1.26 |
| 2015 | 0.62 | 1.42 |
| 2016 | 0.06 | 1.40 |
| 2017 | 0.43 | 1.65 |
| 2018 | -0.30 | 1.38 |
| 2019 | 0.36 | 1.03 |
| 2020 | -10.31 | 0.41 |
| 2021 | 0.02 | 0.47 |

In 2008, 2009, 2010, 2011, 2013, 2014, 2015, 2016, 2017, 2018, 2019, and 2021, the M-Score Perum Perumnas indicates manipulation, and the Z-Score indicates that the corporation is not financially healthy. As can be shown, financial pressure is a motivating element for Perum Perumnas to manipulate its financial records.

Then, in 2012 and 2020, the company's financial position was in the threat of bankruptcy/distress zone, showing that the fall in the company's financial condition was the consequence of manipulation carried out the previous year.

IV. CONCLUSION

Based on the findings of the preceding chapter's study and debate, the following conclusions are reached:

1. According to the results of the six sample firms, the Z-Score, which indicates an unhealthy company situation, is frequently used by

corporations to distort their financial accounts.

2. As demonstrated by PT Biofarma (Persero), unsound financial conditions are not the only element that corporations use to manipulate their financial reporting.
3. Unhealthy financial situations are not necessarily a motivator for corporations to falsify their financial statements.
4. Financial manipulation by firms frequently has a detrimental impact on the company's future financial status.

Regarding the limitations of this study, further research can add to the population and sample size by readjusting to expand the scope of the research sample. This is due to the limited object of this research which only uses 6 BUMN companies in Indonesia. In addition, further research can use other models to provide effective results.

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