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Benish M Score Ratio and Altman Z Score Ratio Models Against Bankruptcy Detection

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Abstract

Earning management is a sort of fraud since it gives management the chance to manipulate the options accessible to them in order to maximize performance and the projected amount of profit by interfering with financial reporting. The financial and banking industry is the one that has been most negatively impacted by this fraud, which is one of the top three reasons why a company organization files for bankruptcy. This study aims to identify fraud at the Indonesian Economic Bank a financial organization that will be liquidated between 2020 and 2023, as early as feasible. This study is a form of quantitative research that combines the Benis M Score Ratio and Altman Z Score Ratio bankruptcy detection models. The study's findings suggest that the Altman Z Score has a liquidity and solvency ratio that has no bearing on firm bankruptcy, whereas the Benish M Score Ratio model, which includes the Depreciation Index, does not.

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INTRODUCTION

The 2019 Association of Certified Fraud Examiners (ACFE) report revealed that manipulation of financial statements through earning management is one of the three main types of fraud cases in Indonesia, alongside corruption and asset misuse. Accrual management refers to altering a company's financial statements and transaction structure in order to deceive certain stakeholders about the company's financial performance (Flayyih & Ali, 2018). Since profit is a crucial measure of management's operational performance and accountability, management has the ability to exercise its authority and discretion in financial reporting (Alfian et al., 2019). Furthermore, management has the opportunity to manipulate the available options when making financial decisions in order to achieve the desired level of profit and maximize performance (Agus Irwandi & Ghozali, 2021).

One of the bankruptcy types that cause fraud is liquidation (Herzegovina, 2020). Liquidation is the process of the end responsibility and dissolution of legal entities (Maccarthy, 2017). Almost every year reported that fraud cases are found and published by the Association of Certified Fraud Examiners (ACFE). The following button graph defines the most lost entities on account of fraud.

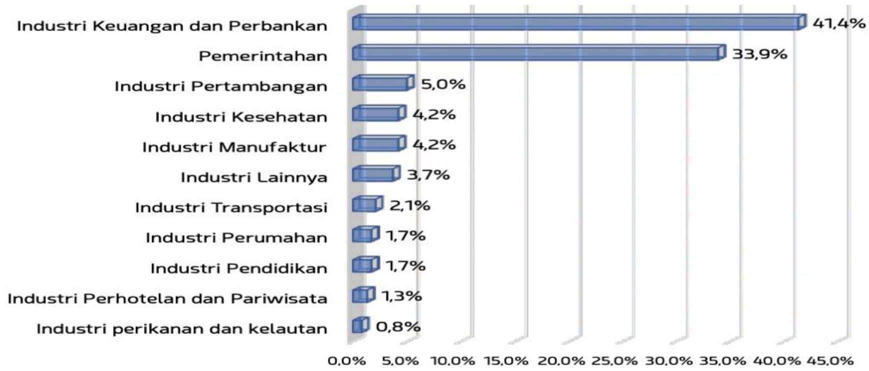

Figure 1: The Most Losses Entities Causes Fraud Detection
Source of Data Proceed : Association of Certified Fraud Examiners (ACFE) 2019

The financial and banking sectors are the top contributors to fraud with 41.4% results, according to the data graph. Many bank industries may file for bankruptcy or be liquidated between 2019 and 2023, and if this trend continues, it will undermine consumer confidence. The economic viability of a corporation is severely harmed by fraud that takes place in business entities (Altman et al., 2017; Maccarthy, 2017). The best strategy to handle a fraud case is to minimise fraud by finding it as soon as possible (Bănărescu, 2015; Simon, 2021).

According to the results of the hypothesis test, the resThe De Angelo Model, the Jones Model, the Benish M Score Model, and the Altman Z Score Model are the first four methods that can be used to detect fraud early on. Two ratios are frequently employed by businesses to make predictions about fraud based on the core research of fraud. There are four variables that can be used as fraud predictors, according to Messode D. Benish's research on early bankruptcies published in 1999. These variables are Days' Sales In Receivables Index (DSRI), Gross Margin Index (GMI), Asset Quality Index (AQI), Sales Growth Index (SGI), and Depreciation Index (DEPI). The study's findings showed that every predictor variable on the Benish M Score Ration had a positive significance.against fraud (A Kadim & Nardi, 2018).

Altman (2000) developed a ratio model that uses liquidity, solvency, and activity ratios to forecast fraud because fraud has a significant influence on the viability of corporate enterprises. According to Altman et al. (2017) and Habib et al. (2020), the Z score ratio has a strong favourable impact on identifying potential insolvency brought on by fraud in a commercial entity. In order to identify fraud early, commercial entities in America frequently employ the Altman Z Score ratio (Alfian et al., 2019; Ramrez-Orellana et al., 2017).

This researcher will merge two bankruptcy detection strategies in light of the prior research. According to Beneish (1999) and Altman (2000), the likelihood of manipulation is indicated by a sharp rise in receivables, deteriorating gross margins, dropping assets, rising sales, and rising accruals. The People's Economic Bank in Indonesia is where this study is being done. The reasons for selecting the People's Economic Bank as the example are that fraud still exists in the financial and banking sectors, which are managed and regulated by state financial agencies like OJK and LPS, and that in 2022 there was a massive liquidation in Indonesia, particularly in the sectors of People's Economic Bank.

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METHOD

This study is a quantitative one, in which all the variables are examined and the hypothesis is tested using data. The data used is secondary data taken from the People's Economy Bank's financial reports for the years 2020 to 2022, both sharia and conventional, which are registered with the Financial Services Authority (OJK). Multiple linear regression is employed in the hypothesis testing.

RESULTS AND DISCUSSION

Hypothesis Test Results

Tabel 1 Hypothesis Test Results

Hypothesis	Statistic Sig < 0,05	Results of Direct Efeects
DSRI to Fraud	.006	Significant
AQI to Fraud	.008	Significant
SGI to Fraud	.007	Significant
DEPI to Fraud	.338	No Significant
LVGI to Fraud	.031	Significant
Liquidity to Fraud	.096	No Significant
Solvncy to Fraud	.141	No Significant
Aktivity to Fraud	.038	Significant

Source of Data Proceed : Association of Certified Fraud Examiners 2019

Effect of Day Sales in Receivable Index (DSRI) Ratio on fraud detection

The agency relationship that occurs between the agent and the principal can be reflected in the form of trust of the principal as a stakeholder by giving all the rights and powers and responsibilities of the company to the agent to manage the company with profits as a form of accountability as well as a measure of management performance (Jensen and Meckling 1976). Day Sales in Receivable Index (DSRI) is one of the ratios used as a predictor of indications of fraud in business entities. Based on the hypothesis testing, this study showed significant results where the Day Sales in Receivable Index (DSRI) ratio had a significant positive effect on the detection of fraud. This can happen because the Day Sales in Receivable Index (DSRI) ratio uses accounts receivable as the predictor, receivables are a part of current assets on the company's balance sheet. Receivables arise due to the sale of goods and services or due to the provision of credit to debtors whose payments are made in installments (credit) not in cash (Rahmanto & Hamdy, 2022). The banking industry is very vulnerable to accounts receivable, especially uncollectible accounts, none other than because one of the functions of a financial institution is as an institution for collecting and distributing public funds. There are so many factors that cause uncollectible accounts, one of which can be done by the intentional act of management. The intentional act in question is that prior to granting credit, the management did not really analyze the granting of credit to prospective customers. This intentional action was used with the intention of increasing its accounts receivable to inappropriate customers in order to maximize performance.

Effect of Asset Quality Index Ratio on fraud detection

The Asset Quality Index (AQI) ratio had a large positive impact on the identification of fraud, according to this study's significant results, which were based on the hypothesis testing. This is possible because management may use asset misuse as a cover for fraud and deception. By getting involved in asset reports, management can use their ability to manage accruals. To maximise performance, management can commit the following sorts of asset fraud: fraud on asset purchase pricing, false asset recording, and misclassification of fixed assets. The performance of management in boosting the wealth controlled by the company is better the more valuable the assets the entity has. The 2019 Association of Certified Fraud Examiners (ACFE) also stated in its report that misuse of assets is the second largest type of fraud in Indonesia.

The Effect of the Sales Growth Index (SGI) Ratio on fraud detection

The Sales Growth Index (SGI) ratio had a large beneficial impact on the identification of fraud, according to this study's significant results, which were based on the hypothesis testing. This resulted from management's accrual management strategy, which involved interfering with the company's income reporting. Given the importance of profit as a measure of management's operational performance and accountability, management is able to use its authority and judgment in financial reporting. In order to achieve the anticipated profit level and maximise performance, management can also manipulate the options at hand to make the best decisions. The pattern of intervention that is carried out is by making fictitious income, namely by recording sales transactions of goods/services that actually did not occur.

Depreciation Index (DEPI) and fraud

According to the results of the hypothesis test, it was determined that the research findings were not significant and that the Depreciation Index (DEPI) had no impact on the detection of fraud. Therefore, this study runs counter to that of Benish (1999). This is possible since there are only two asset depreciation methods that are frequently employed in commercial entities, namely the straight-line method and falling balance, both of which have very integrated reporting in terms of profit and loss and taxes. The correctness of the stated depreciation method can have an impact on a corporate entity's future viability since potential investors will be concerned about the entity's ability to turn a profit and will find it challenging to raise cash, which can ultimately degrade management performance. so it might be concluded that the Depreciation Index method has no significant effect on fraud detection.

Effect of Leverage Index (LVGI) and fraud

According to the results of the hypothesis test, the Leverage Index ratio (LVGI) had a statistically significant positive impact on the People's Economy Bank entity's ability to detect fraud. This occurs because the ratio used to assess a company's capacity to repay loans relative to its assets is the leverage index ratio. High levels of leverage can have a negative impact on a company's financial success. The amount of money that will be provided by creditors is impacted by the bad financial performance of business organisations. As a result, in order to maximise management effectiveness, management makes use of its authority by controlling the company's debt report accruals and interfering in creditor contracts in order to secure more cash. So that it can be seen the good performance of management. The results of this study are in line with Beneish's research (1999) which states that the leverage ratio has a positive effect on the detection of fraud that occurs in business entities.

Effect of Liquidity ratio and fraud

According to the hypothesis test, this study's findings are inconsequential, proving that the liquidity ratio has no bearing on identifying a company's insolvency, in this case the People's Economic Bank. This is possible because working capital acts as a gauge for the liquidity ratio, which is calculated by deducting total current liabilities from total current

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assets. It is extremely challenging for management to intervene in current obligations and assets because both have short or fast cash flow turnover with little more than one year, making it a suicidal act for them to do so.

Effect of Activity Ratio and Fraud

Based on the hypothesis test, the results of this study show significant results which can be interpreted as the activity ratio has a significant positive effect on fraud detection in business entities. This can happen because the Activity ratio is a ratio to assess how efficiently a company uses company assets to earn income or income. To maximize performance, management uses their authority and judgment in financial reporting and transaction structures to amend financial reports. The aim is to mislead some stakeholders about the condition of the company's economic performance or to influence contractual results that depend on reported accounting numbers so as to maximize its performance. In this activity ratio, management intervenes in extending credit to customers without taking into account the long term and accurate analysis of customers in order to obtain credit targets obtained so that management gets company bonuses.

Effect of Solvency Ratio on Fraud

According to the results of the hypothesis test, there is little evidence that the solvency ratio has any impact on fraud detection in the People's Economy Bank company. This is possible because the operating cash flow of the company can suffer a larger discrepancy between the book value and the total debt. Therefore, it is extremely risky for management to make decisions based on book values, and as we all know, the banking sector has the strongest rules. Additionally, investors frequently use book values as a basis for their fundamental research.

CONCLUSION

With a research sample of financial reports on the People's Economy Bank entity from 2020 to 2023, two ratio models—the Benish M Score Ratio model and the Altman Z Score Ratio—are employed in this study to detect fraud. Four ratios are assessed in the Benish M Score Ratio: the Days Sales in Receivables Index, the Asset Quality Index, the Sales Growth Index, and the Depreciation Index. Depreciation Index Ratio, which has no bearing on fraud detection, is used because the banking industry is the subject of the study,

where the turnover of assets is rapid and the reported depreciation method is inaccurate, these factors may affect the future viability of business entities, making it difficult for potential investors to predict profits and for entities to raise capital, which will later worsen management performance. In contrast, the three ratios of liquidity, solvency, and activity are used in this study's Altman Z Score ratio. The findings from these three ratios show that the liquidity ratio and solvency ratio have no impact on fraud detection. This can happen because the liquidity ratio, which measures an entity's capacity to pay short-term debt using current asset accounts and current liabilities, can make it difficult to intervene in short-term or fast cash flow turnover that lasts no longer than a year.The bigger the gap between the book value and the total debt, the more detrimental it can be to the company's operating cash flow, which is why this can happen in the solvency ratio. Therefore, it is extremely risky for management to implement actions using book values.

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