International Journal of Advanced Multidisciplinary Research and Studies

Analysis of Bankruptcy Risk during the Pandemic on the Tendency of Financial Report Fraud through Profit Manipulation

[1] Widya Rizki Eka Putri, [2] Einde Evana, [3] Rialdi Azhar, [4] Kamadie Sumanda Syafis

[1, 2, 3, 4] Department of Accounting, Economics and Business, University of Lampung, Lampung, Indonesia

Corresponding Author: **Widya Rizki Eka Putri**

Abstract

This research aims to find empirical evidence of the link between bankruptcy risk and the tendency for fraud in financial reports through earnings manipulation during the pandemic. The measurement of the bankruptcy risk variable in this study uses the Z-Score because this model can be used by all types of companies, the earnings manipulation variable is measured using the Conditional Revenue Model because this model is better able to detect earnings management than previous measurement models, and the measurement of financial statement fraud variables in This research uses the F-Score Model because this model has higher sensitivity in detecting fraud. The results of this research found that during the pandemic, the risk of bankruptcy influenced the tendency for fraudulent financial reports through profit manipulation.

1. Introduction

The Covid-19 pandemic that hit the world caused an economic crisis in various countries, including Indonesia. Since the implementation of restrictions on community activities, the condition of various business sectors has experienced a drastic decline. A significant decrease in income causes disruption to asset turnover within the company. This causes a decline in financial performance which results in a decline in company performance. A decline in company performance over a certain period of time puts the company at risk of bankruptcy. Bankruptcy risk is the risk of failure to pay the company's obligations, which requires legal action to file bankruptcy to liquidate the assets owned with the aim of fulfilling these obligations (Bryan, et.al, 2013) [3]. Based on a survey conducted by the Ministry of Manpower, as many as 88% of companies in Indonesia were affected by Covid. Furthermore, a survey conducted by the Central Statistics Agency (BPS) showed that as many as 82.25% of companies experienced a decline in revenue. From the survey results, it can be indicated that the chances of companies facing the risk of bankruptcy during the pandemic are increasing.

The great pressure on the company due to a decrease in income triggers management's opportunistic actions to maintain the company's performance in the eyes of stakeholders. As financial difficulties persist, stakeholders can experience significant financial losses (Habib *et al.*, 2013) [13] and managers can experience a reduction in their performance-related pay and experience a decline in reputation (Liberty and Zimmerman, 1986; Gilson, 1989) [21, 12] in these circumstances, managers have the authority to take action with the aim of hiding a real decline in company performance using earnings management strategies by increasing revenues (Franz *et al.*, 2014) [11]. Campa (2019) [4] found that the level of financial difficulty has an effect on acts of profit manipulation which are higher than the actual value. Actions of earnings manipulation carried out by company management resulted in a decline in the quality of the financial reports produced due to biased information being reported. This will be detrimental to parties with an interest in the company. Implementing strict accounting standards can reduce the possibility of earnings management actions (Putri, 2017) [23]. In addition, a method is needed to detect fraud in financial reports so that it can reduce the risk of errors in decision making. Based on this description, the researcher formulated the research problem as follows: 1. How does the risk of bankruptcy during the pandemic affect earnings manipulation? 2. How does the risk of bankruptcy during the pandemic affect fraud in financial reports? 3. What is the effect of earnings manipulation during the pandemic on fraud in financial reports?

This research aims to find empirical evidence of the link between bankruptcy risk and the tendency for fraud in financial reports through earnings manipulation. It is hoped that the results of this research will be able to provide contributions in the

form of: First, basic considerations for the accounting standards board to issue accounting standards that are preventive against earnings manipulation. Second, policy contributions for regulators to issue regulations that can reduce opportunities for fraud in financial reports. The expected level of Technology Readiness (TKT) in this research is level 4, namely validating fraud in financial reports due to the risk of bankruptcy through profit manipulation.

2. Literature review
2.1 Forensic Accounting Theory
Forensic Accounting is defined as the application of financial skills and investigative mentality to resolve unresolved problems and is carried out in the context of rules of evidence (Bolgna & Linquist, 1995). Forensic accounting is also defined as the process of collecting, interpreting, summarizing, and presenting complex financial issues in a clear, concise, and factual manner (Howard & Sheetz, 2006; Stanbury & Paley-Menzies, 2010; Ugurlu, Thalassinos, & Muratoglu, 2014) [16, 24, 26]. Furthermore, Ozili (2020) [22] defines Forensic Accounting Theory as an explanation of why and how the method or technique used to detect creative accounting or manipulation in financial and non-financial reports is chosen. The use of methods and techniques depends on the accounting and non-accounting decisions taken in consideration by the forensic accountant or investigator.

2.2 Bankruptcy Risk
Bankruptcy Risk is all events and possibilities of a business experiencing financial difficulties that lead to or do not lead to filing for insolvency/bankruptcy (Altman, 1968) [2]. Karels and Prakash (1987) identified two factors of financial distress, namely internal factors and external factors. Internal factors are caused by poor management, earnings management actions, and unprofitable projects. Meanwhile, external factors are caused by inherent factors that affect the company systematically, including market risk and regulatory changes.

The bankruptcy risk measurement model was developed by Altman (1968) [2], this model became known as the Z-Score. In this model, Altman (1968) [2] selected 22 financial ratios into 5 ratios which can be combined to see companies that are bankrupt and not bankrupt. The five ratios are working capital/total assets; dithaan profit/total assets; Earnings Before Tax/total assets; Market value of shares/total debt; sales/total assets. This model was then modified by Altman (1984) to test the bankruptcy model for companies that did not go public by changing the ratio of stock market value/total debt to book value of equity/book value of debt. This research uses Altman's Z-Score as a tool to measure the likelihood of bankruptcy by combining profitability, liquidity, solvency and activity. Altman's Z-Score is considered the most flexible model and can be used in all types of companies (Cooper and Uzun, 2019) [5].

2.3 Profit Manipulation
Profit manipulation or earnings management is an act of regulating the value of profits for certain purposes. The selection of accounting methods can be used as a management effort to achieve company goals. However, information asymmetry between management and owners gives rise to moral hazard (Jensen and Meckling, 1976).

Earnings management actions often turn into profit manipulation to gain personal gain. In the Positive Accounting Theory proposed by Watts and Zimmerman (1978), there are three motivations for earnings management actions, namely bonus plan motivation, debt agreement motivation, and political cost motivation.

The development of a earnings management measurement model was carried out by Healy (1985) [15], in this model earnings management measurement was carried out by comparing the average total accruals across all earnings management distribution variables. This model assumes that earnings management occurs in every period. Furthermore, DeAngelo (1986) [6] tested earnings management by calculating the first difference in total accruals, and by assuming that the first difference had a value of zero. Model Jones (1991) [19] proposed a model that simplifies the assumption that nondiscretionary accruals are constant. Dechow and Sloan (1991) [8] developed an earnings management measurement model known as the Industry Model. The Industry Model assumes that variations in the determinants of nondiscretionary accruals are common across firms in the same industry. Furthermore, Dechow et al. (1995) [7] consider a modified version of the Jones Model in their empirical analysis. In the modified model, nondiscretionary accruals are estimated over the event period i.e., over the period in which earnings management is hypothesized. Dechow and Dichev (2002) [9] proposed a model that can be used to measure the quality of accruals in earnings presented in financial statements. This model builds an accrual framework, where profit will be equal to cash flow plus accruals. Kothari et al. (2005) [20] attempted to improve the Jones Model, by adding changes in return on assets (ROA) to control performance. This model only adds changes in ROA in calculating discretionary accruals. Stubben (2010) [25] put forward the Conditional Revenue Model, where this model was redeveloped by adding company size (size), company age (age) and gross margin (GRM) which is thought to be able to be used in detecting accrual profit management regarding the provision of credit related to receivables. This research will use the Stubben (2010) [25] model in measuring earnings management, because this model is better able to detect earnings management than the Modified Jones Model and Revenue Model (Hadisuria, 2020) [14].

2.4 Financial Statement Fraud
Several previous studies have developed several theories to detect conditions in financial reports, including Cressey (1953) who put forward the fraud triangle theory, this theory focuses on environmental conditions that encourage someone to commit fraudulent acts (fraud) and other unethical behavior. The fraud triangle explains the three factors present in every fraud situation namely pressure, opportunity, and rationalization. This theory was later developed by Wolfe and Hermanson (2004). In this theory, there are four factors that cause incidents called Diamond Fraud, including: Pressure, rationalization, opportunity and ability. Furthermore, the development of this theory was carried out by Crowe (2011) who put forward the pentagon fraud theory. The pentagon fraud theory is the result of development of previous theories, this theory adds an element of arrogance to its measurement model. Furthermore, the development theory of incident detection was carried out by Vouisinas (2019) [27] who put forward the

Fraud hexagon model, in this theory the element of Collusion was added to the measurement model. Apart from these four theories, Beneish (1999) suggests that there are several predictors of financial report manipulation that can be used, including: Days Sales in Receivables Index (DSRI), Gross Margin Index (GMI), Asset Quality Index (AQI), Sales Growth Index (SGI), Depreciation Index (DEPI), General and Administrative Sales Expenses Index (SGAI), Leverage Index (LVGI), Total Accruals to Total Assets (TATA). Furthermore, in predicting manipulation in financial reports, each index ratio is classified to determine companies including manipulators, non-manipulators and gray companies. Detecting conditions in financial reports was also carried out by Dechow *et al* (2011) [10] who proposed the Fraud Score (F-Score) Model, this model is the sum of the quality of accruals and financial performance which includes two variable components. This research will use the F-Score Model to detect conditions in financial reports. Because this model has higher sensitivity in detecting conditions (Aghghaleh, 2016) [1].

3. Research methods
This research uses a quantitative type of research using secondary data originating from annual reports obtained from the Indonesia Stock Exchange website (www.idx.co.id) and the official websites of each company The sample from this research is all non-financial companies listed on the Indonesia Stock Exchange (BEI) which are indicated to be experiencing financial distress during the pandemic (2020 - 2021).

Table 1: Operational Definition of Variables

Variable	Measurement
Bankruptcy Risk	Bankruptcy risk is measured using the following formulation of Altman's *Z-Score* (1984): $$Z = 6,56\,X1 + 3,26\,X2 + 6,72\,X3 + 1,05\,X4$$ X1= Working Capital/Total Asset X2= Retained Earnings/Total Asset X3=Earnings Before Taxes/Total Assets X4= Book Value of Equity/Total Assets
Profit Manipulation	Profit Manipulation calculation are measured using earnings management score using the Conditional Revenue Model (Stubben, 2010) [25], namely as follows $$\Delta ARit = \alpha + \beta1\,\Delta Rit + \beta2\,\Delta Rit \times SIZEit + \beta3\,\Delta Rit \times AGE\,it + \beta4\,\Delta Rit \times AGE\_SQ\,it + \beta5\,\Delta Rit \times GRR\_Pit + \beta6\,\Delta Rit \times GRR\_Nit + \beta7\,\Delta Rit \times GRMit + \beta8\,\Delta Rit \times GRM\_SQit + \varepsilon\,it$$ AR= End of year receivables R= Annual revenue; SIZE= Natural Log total Asset End of year AGE= Natural Log company age GRR_P= Industry median adjusted revenue growth (= 0 if negative) GRR_N= Industry median adjusted revenue growth (= 0 if positif); GRM= Industry median adjusted gross margin at end of fiscal year _SQ= Square of Variable Δ = Annual change.
Financial statement fraud	Financial statement fraud detection are measured using using F-Score Model (Dechow, 2011) [10], namely as follows $$F\ Score = Accrual\ Quality + Financial\ Performance$$ Accrual Quality calculate RSST Accrual: $$RSST\ Acrrual = \frac{(\Delta WC + \Delta NCO + \Delta FIN)}{Average\ Total\ Assets} \quad \text{.......................... (1)}$$ WC= Current Assets - Current Liability NCO= Total Assets – Current Assets Investment and advances) – (Total Liabilities – Current Liabilities –Long Term Debt) FIN= Total investment – total Liabilities; ATS= (Total assets at the beginning of the year + total assets at the end of the year)/2. Financial Performance calculate using: $$Financial\ Performance = change\ in\ receivables + change\ in\ inventories + change\ in\ cash\ sales + change\ in\ earnings \dots (2)$$ Change In Receivables= Δ Receivables/ Average Total Assets Change In Inventories= Δ Inventories/ Average Total Assets Change In Cash Sales= Δ Sales/Sales (T) - Δ Receivables/Receivables (t) Change In Earnings= Earnings (t)/ Average Total Assets (t) – Earnings (t-1).

3.1 Hypothesis Test

Hypothesis testing in this research was carried out using the following regression model:

$$EM = b1\ BRisk + e1 \tag{1}$$

$$Fraudlent = b1\ BRisk + b2\ EM + e2 \tag{2}$$

EM= Earnings Manipulation
Brisk= Bankruptcy Risk
Fraudlent= F Score.

4. Result and Discussion

Based on the data obtained, during the pandemic period (2020 – 2021) there were 73 companies that were detected to be at risk of bankruptcy (financial distress). In this study, companies that were at risk of bankruptcy before the pandemic were not included in the sample. This aims to reduce the risk of bias in the research results. So the companies that are the research sample are companies that are at risk of bankruptcy during the pandemic. The value of each variable is described in the following table:

Tabel 2: Deskriptive Statistic

	Minimum	Maximum	Mean	Std. Deviation
BRisk	-1.9054571	1.0921791	.1329695	.8141542
EM	-2.00940795	4.32257098	1.100563	.1964899
Fraudlent	-2.44684860	2.95574785	1.592641	.1117319

From the table, it can be seen that the average Z-Score (BRisk) value is 0.1329695. This value is smaller than 1.81, which means that during the pandemic the average sample company experienced the risk of bankruptcy. The decline in the amount of working capital and the fall in the book value of equity caused by a sluggish market resulted in the sample companies being on the verge of bankruptcy. The average value of the F-Score (Fraudlent) is 1.592641, this value is greater than 1, this shows that on average the sample companies have a substantial tendency to cheat in their financial reports. Of the 65 sample companies, there were 20 companies that had an F-Score value above 1, this means that 30% of the sample companies were indicated to have presented financial reports that had fraudulent tendencies during the pandemic.

Testing the hypothesis of the influence of bankruptcy risk on profit manipulation during the pandemic (2020-2021) obtained the following results:

Table 3: Regression Model Testing Results (1)

	B	Sig
BRisk	0.421	0.039

The table shows that bankruptcy risk has a significant effect on profit manipulation during the pandemic. This shows that the action of earnings manipulation was triggered by the company's financial condition. During the pandemic, global economic turnover experienced a decline. The existence of activity restrictions causes a decrease in company profitability. This has an impact on decreasing the company's financial performance as indicated by a decrease in the rate of return on assets and equity. This condition urges company management to manipulate profits in order to maintain the trust of investors and creditors.

The results of testing the risk of bankruptcy and profit manipulation on financial statement fraud are presented in the following table:

Table 4: Regression Model Testing Results (2)

	B	Sig
BRisk	0.301	0.035
EM	0.972	0.05

Based on the test results, it was found that bankruptcy risk has a direct effect on financial statement fraud. Companies that are at risk of bankruptcy during the pandemic experience a lot of pressure, slowing asset turnover, decreasing income, with a situation of fixed operational costs, threatening the survival of the company. To maintain public trust, and possibly obtain funding from creditors and investors as an effort to ensure the company's survival during the pandemic, the risk of bankruptcy has been empirically proven to be one of the factors that influences the presentation of financial reports with a tendency for fraud during the pandemic.

The effect of earnings manipulation on the tendency for fraudulent financial reporting during the pandemic has been proven to be empirically significant. Companies that are at risk of bankruptcy during the pandemic tend to carry out profit manipulation with a tendency to cheat in financial reports. The results of testing the indirect influence of bankruptcy risk on financial statement fraud through earnings manipulation are proven to be empirically significant. This is indicated by the indirect value which is greater than the direct effect (0.421 x 0.972 = 0.409 > 0.301). The act of manipulating profits as measured by the residual value of the conditional revenue model (Stubben, 2010) [25] makes receivables the main component in its measurement. During the pandemic, there was an increase in the number of bad debts due to failure to pay by debtors, however, to maintain company performance, managers can carry out profit management through bad debt expansion items. The manager's freedom to determine the allowance estimate gives management room to be able to regulate the amount of the value. Managers can use sales percentages and receivables aging percentages. To maintain profit performance, managers can set policies regarding the percentage size in the aging of receivables analysis. A low allowance value can make the profit value still look good. This is in line with research conducted by Jackson and Liu (2010) [17] which found that managers manipulate earnings to avoid losses.

5. Conclusions

This research aims to find empirical evidence of the link between bankruptcy risk and the tendency for fraud in financial reports through earnings manipulation during the pandemic. Based on the research results, it can be concluded the following things:

1. Bankruptcy risk influences actions to manipulate profits during the pandemic. Companies that are in a state of economic difficulty during the pandemic tend to take action to manipulate profits to maintain the confidence of investors and creditors.
2. Bankruptcy risk influences fraud in financial reports during the pandemic. Companies that are at risk of bankruptcy tend to present financial reports with

fraudulent tendencies to maintain public trust and possibly obtain funding from creditors and investors as an effort to ensure the company's survival during the pandemic.

3. Profit manipulation has an impact on fraud in financial reports during the pandemic. To maintain profit performance, managers can set policies regarding the percentage size in the aging of receivables analysis. A low allowance value can make the profit value still look good.

6. References

1. Aghghaleh SF, Mohamed ZM, Rahmat MM. Detecting Financial Statement Frauds in Malaysia: Comparing the Abilities of Beneish and Dechow Models. Asian Journal of Accounting & Governance. 2016; 7.
2. Altman EI. Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. J. Finance. 1968; 23(4):589-609.
3. Bryan D, Dinesh Fernando G, Tripathy A. Bankruptcy risk, productivity and firm strategy. Rev. Account. Finance. 2013; 12(4):309-326.
4. Campa D. Earnings management strategies during financial difficulties: A comparison between listed and unlisted French companies. Research in International Business and Finance. 2019; 50:457-471.
5. Cooper E, Uzun H. Corporate social responsibility and bankruptcy. Stud. Econ, 2019.
6. DeAngelo EL. Accounting Numbers as Market Valuation Substitutes: A Study of Management Buyouts of Public Stockholders. The Accounting Review, LXI. 1986; (3):400-422.
7. Dechow P, Sloan R, Sweeney A. Detecting Earnings Management. The Accounting Review. 1995; 70:193-225.
8. Dechow P, Sloan R. Executive Incentives and the Horizon Problem: An Empirical Investigation. Journal of Accounting and Economics. 1991; 14:51-89.
9. Dechow P, Dichev I. The Quality of Accruals and Earnings: The Role of Accrual Estimation Error. The Accounting Review. 2002; 77:35-59.
10. Dechow P, Hutton A, Kim J, Sloan R. Detecting Earnings Management: A New Approach. Working Paper, University Arizona, USA. Finance. 2011; 36(2):130-153.
11. Franz DR, HassabElnaby HR, Lobo GJ. Impact of proximity to debt covenant violation on earnings management. Rev. Acc. Studies. 2014; 19(1):473-505.
12. Gilson S. Management turnover and financial distress. J. financ. econ. 1989; 25(2):241-262.
13. Habib A, Uddin Bhuiyan B, Islam A. Financial distress, earnings management and market pricing of accruals during the global financial crisis. Managerial Finance. 2013; 39(2):155-180.
14. Hadisuria CN. Pendeteksian Manajemen Laba: Perbandingan Antara Discretionary Revenue dan Discretionary Accrual (Studi dalam Perusahaan Manufaktur yang Terdaftar di BEI Tahun 2016–2018)/Catherine Natalia Hadisurja/30160080/Pembimbing: Rizka Indri Arfianti, 2020.
15. Healy P. The Effect of Bonus Schemes on Accounting Decisions. Journal of Accounting and Economics. 1985; 7:85-107.
16. Howard S, Sheetz M. Forensic accounting and fraud investigation for non-experts. Hoboken, NJ: John Wiley & Sons Inc, 2006.
17. Jackson SB, Liu X. The allowance for uncollectible accounts, conservatism, and earnings management. Journal of Accounting Research. 2010; 48(3):565-601.
18. Jia Z, Shi Y, Yan C, Duygun M. Bankruptcy prediction with financial systemic risk. The European Journal of Finance. 2020; 26(7-8):666-690.
19. Jones JJ. Earnings Management during Important Relief Investigations. Journal of Accounting Research. 1991; 29(2):193-228.
20. Kothari SP, Leone AJ, Wasley CE. Performance Matched Discretionary Accrual Measures. Journal of Accounting and Economics. 2005; 39(1):163-197.
21. Liberty S, Zimmerman J. Labor union contract negotiations and accounting choice. Acc. Rev. 1986; 61(4):692-712.
22. Ozili Peterson K. Forensic accounting theory. MPRA Paper 102566, University Library of Munich, Germany, 2020.
23. Putri Widya Rizki Eka. Analisis Kualitas laba sebelum dan sesudah diterapkan IFRS dan pengaruhnya terhadap reaksi investor. Jurnal Akuntansi Keuangan. 2017; 2:107-120.
24. Stanbury J, Paley-Menzies C. Forensic futurama: Why forensic accounting is evolving. AICPA Store, June 28, 2010.
25. Stubben SR. Discretionary Revenues as a Measure of Earnings Management. The Accounting Review. 2010; 85(2):695-717.
26. Ugurlu E, Thalassinos E, Muratoglu Y. Modeling volatility in the stock markets using GARCH models: European emerging economies and Turkey. International Journal of Economics and Business Administration. 2014; 2(3):72-87.
27. Vousinas GL. Advancing Theory of Fraud: The S.C.O.R.E. Model. Journal of Financial Crime. 2019; 26(1):372-381.
28. Watts R, Zimmerman J. Positive Accounting Theory. Prentice-Hall, Englewood Cliffs, NJ, USA, 1986.