Harmoni Economics: International Journal of Economics and Accounting

E-ISSN .: 3063-8712
P-ISSN .: 3063-6205

Research Article

Financial Distress, Leverage, and Cash Flow Effects on Earnings Management: Evidence from IDX Manufacturing Firms the 2020-2024 Period

Budi Chandra[1*], Erlina[2], Parapat Gultom[3]

[1] Fakultas Ekonomi dan Bisnis, Universitas Sumatera Utara, e-mail: budi.chandra5310@gmail.com
[2] Fakultas Ekonomi dan Bisnis, Universitas Sumatera Utara, e-mail : erlina@usu.ac.id
[3] Fakultas Ekonomi dan Bisnis, Universitas Sumatera Utara, e-mail : parapat@usu.ac.id
* Corresponding Author: budi.chandra5310@gmail.com

Abstract. Flow on accrual earnings management with firm size as moderating variable in manufacturing companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period. This study was conducted based on information obtained from the Indonesia Stock Exchange. The sampling technique used was purposive sampling. The population in this study were manufacturing sector companies listed on the Indonesia Stock Exchange for the 2020–2024 period. This study employs panel data regression analysis using E-Views. The analytical method applied is multiple linear regression with a quantitative approach. The findings show that only financial distress has a significant positive effect on accrual earnings management, while the other variables are not significant. In addition, firm size does not moderate the influence of financial distress, leverage, or operating cash flow on accrual earnings management. This research is expected to provide deeper insight into the relationship between financial distress, leverage, and operating cash flow with accrual earnings management, as well as contribute to the accounting literature on earnings management practices amid financial pressure faced by firms.

Keywords: Accrual Earnings Management; Financial Distress; Firm Size; Leverage; Operating Cash Flow

1. Introduction

The case of PT. Garuda Indonesia (Persero) Tbk.'s financial report for the 2018 fiscal year, related to the recognition of unrealized revenue, is one of the earnings management cases that has emerged in Indonesia. The recognition of revenue of USD 239.94 million was carried out after the signing of a cooperation agreement with PT Mahata Aero Teknologi, which should have been recognized in stages according to the duration of the contract. However, the company chose to recognize it all at once in one year. This decision contradicts PSAK 23 on the recognition and measurement of revenue (now PSAK 115 Revenue from Contracts with Customers), which requires revenue recognition to be based on the substance of the agreement and the realization of economic benefits.

Another case, in 2015, was discovered that Toshiba had inflated profits by USD 1.2 billion over the previous seven years. This incident was directly related to violations of generally accepted accounting principles, including, among others, the recognition of project revenue that should not have been realized using the percentage of completion method, delaying the recognition of costs in unprofitable projects, mostly through cost capitalization, and accounting policies in fluctuating depreciation. As a result, Toshiba was fined by the Japanese financial regulator approximately 60 million dollars, the largest fine for a financial case in Japan. In the correction of financial data for fiscal 2015 ending March 31, 2016, released on May 23, 2016, Toshiba stated a net loss (net loss attributable to shareholders of the Company) of 460.0 billion yen or approximately USD 4.07 billion (Toshiba, 2016).

Received: May 09, 2025
Revised: July 06, 2025
Accepted: September 24, 2025
Published: November 30, 2025
Curr. Ver.: November 30, 2025

In the case of Toshiba, the main cause was the demand for unrealistic performance targets to cover up the company's actual performance, which experienced large losses in the Westinghouse Electric power generation business unit acquired since 2006, and pressure due to tight business competition, after struggling through the 2008 global financial crisis. Meanwhile, the accounting department turned a blind eye and even, mentioned by Cheng (2020) helped change accounting techniques inappropriately. Looking at the case of Garuda Indonesia, the company experienced consecutive losses from 2012 to 2014, respectively USD 226 million, USD 175 million and USD 371 million, then profit USD 77 million in 2015 and USD 9.3 million in 2016 but lost again by USD 216 million in 2017, before recognizing a profit of USD 809 thousand which was then restated as a loss of USD 175.02 million.

Accrual earnings management has a positive effect with income smoothing through the moderate formation of doubtful accounts reserves, according to Boachie and Mensah (2022), on issuers in the Anglophone Sub-Saharan Africa region (South Africa, Ghana, Kenya, Nigeria, and Zimbabwe). This has a positive impact on performance, aiming to signal stable fundamental performance to shareholders and investors. The method of accelerating or delaying the recognition of revenue and expenses, mentioned by Hong et al. (2023), is implemented by companies to maintain financial performance in accordance with debt covenants, thus ensuring easy access to corporate financing.

Meanwhile, the effect of company size (Mlawu et al., 2025; Drajat & Nengzih, 2025) concluded that it negatively impacts accrual earnings management practices. However, Nguyen et al.'s (2022) findings suggest that although in theory, large companies tend to be more cautious in accrual earnings management, in reality, some large companies still engage in earnings management, albeit with more covert or aggressive methods. According to Klein (2002), company size is positively correlated with accrual earnings management because large companies have the flexibility and resources to conduct complex accrual management. Susanto and Pradipta (2016) found that the larger the company, the greater its tendency to engage in income-increasing accruals to maintain its reputation in the capital market. Githaiga et al. (2022) provide evidence that company size strengthens the effect of board size on accrual earnings management. In large companies, large boards tend to be ineffective in monitoring earnings management practices.

Meanwhile, two years after the COVID-19 pandemic was declared over in Indonesia in June 2023 through Presidential Decree No. 17 of 2023, economic conditions have gradually improved. Based on GDP data released by the Central Bureau of Statistics, which initially reached -2.07% in 2020, it rebounded to 3.69% in 2021 and stabilized at around 5% in subsequent years, reaching 5.03% year-on-year in 2024.

However, according to the World Bank Global Economic Prospects released in June 2025, World Development Indicators data shows that global economic growth is projected to slow to 2.3% in 2025, the weakest level in the two decades before the 2008 global economic crisis, which was in the 4-5% range. This decline was recorded in nearly 70% of countries, compounded by international trade uncertainty stemming from the wars between Russia and Ukraine, Israel and Palestine, and Iran, and the continued imposition of tariffs, particularly high tariffs by the United States.

Meanwhile, in terms of interest rates, although high interest rates have begun to slowly decline, marked by the Federal Reserve's (The Fed - the United States Central Bank) interest rate cut starting in September 2024 from 4.75-5.00% gradually to 4.25-4.50%, most recently announced in June 2025, after maintaining the range at 5.25-5.50% for more than a year. The Fed still expects inflation to remain high and economic growth to slow. The escalating trade war between the United States and its trading partners, particularly China, with the imposition of high import tariffs, is expected to lead to higher inflation. US annual inflation data for

April rose from 2.3% to 2.4% in May 2025, following the announcement of import tariffs by US President Donald Trump on April 2, 2025.

The manufacturing industry in Indonesia, as a developing country, is highly dependent on imports and global supply chains. According to data from the Central Bureau of Statistics (BPS), the manufacturing sector contributed 19.25% to Gross Domestic Product (GDP) during the first quarter of 2025, the highest compared to other sectors. In the previous years, 2024 and 2023, it contributed 18.98% and 18.67%, respectively, consistently demonstrating the manufacturing sector's crucial role in Indonesia's economic growth. BPS data indicates that during 2023, imports totaled USD 221,886 million, consisting of raw materials and auxiliary materials worth USD 161,155.8 million (72.63%), capital goods worth USD 39,183.5 million (17.66%), and consumer goods at USD 21,546.9 million (9.71%). This shows that more than 90% of Indonesia's total imports in 2023 focused on raw materials and capital goods used in the manufacturing process, indicating that the domestic manufacturing sector relies heavily on imports, both in terms of inputs and production facilities.

The S&P Global Manufacturing Purchasing Managers' Index (PMI) measures the performance of the manufacturing sector, obtained from a survey of 400 manufacturing companies. The Manufacturing PMI is based on five individual indices with the following weights: New Orders (30 percent), Output (25 percent), Employment (20 percent), Supplier Delivery Times (15 percent), and Inventories of Purchased Goods (10 percent), with the Delivery Times index reversed so that it moves in a comparable direction. A reading above 50 indicates manufacturing sector expansion compared to the previous month; below 50 indicates contraction; and 50 indicates no change. Indonesia's Manufacturing PMI plunged to its lowest level in nearly four years, falling to 46.9 in June 2025 from 52.4 in March 2025, marking the first decline in factory activity in six months and the sharpest decline since August 2021. Output fell the most in nearly four years, and new orders shrank after four months of growth. Foreign demand also weakened, with exports shrinking for the second time in three months. Employment fell for the first time in five months as backlogs moderated, and purchasing activity eased after consistent increases. On the price side, input cost inflation rose sharply in April 2025 but remained below the survey's long-term average. The strengthening US dollar has pushed up prices of imported raw materials. However, this pace of input cost inflation was the mildest since October 2020. Companies responded by raising their selling prices for the seventh consecutive month, and at the fastest pace in 2025 so far. Although optimism for increased production remains strong, the level of optimism has fallen to a three-month low and is below the long-term average.

The phenomenon of low operating cash flow generated by a company can signal that the company is facing liquidity problems. The impact of COVID-19 and global uncertainty has significantly impacted manufacturing companies, with one effect being a decrease in operating cash flow. Companies with low operating cash flow have the potential to use accrual earnings management to generate more stable accounting profits, even though the company's actual cash flow may be problematic. Low operating cash flow indicates liquidity problems and can encourage companies to improve accrual earnings management to demonstrate better performance (Yoewono & Roziq, 2024; Li et al., 2020). However, some research (Aburisheh et al., 2022) suggests that high operating cash flow can actually improve accrual earnings management.

2. Literature Review

This study uses two main theories as the basis for developing hypotheses: agency theory and positive accounting theory, which are used to explain the relationship between financial distress and accrual earnings management practices. These two theories were chosen because

they conceptually explain how financial distress can encourage accrual earnings management by company management.

In this theory, agents are assumed to have more information about operational conditions, resulting in information asymmetry, and to have personal interests that do not always align with the interests of their principals. Meanwhile, principals fundamentally desire to increase company value and minimize risk but have limited ability to directly and comprehensively monitor their agents. Contracts between agents and principals are created to address this discrepancy, such as performance-based bonuses received by agents. However, in times of financial distress, agents may engage in accrual earnings management to present the company as performing well, in order to retain bonuses or prevent a decline in stock prices, even though the company's actual condition may be deteriorating.

Positive accounting theory aims to explain and predict the accounting practices companies choose, rather than to prescribe what accounting practices should be. This theory focuses on "what is" rather than "what should be." It seeks to explain why companies choose certain accounting practices, such as the use of different accounting methods or different disclosures. Positive accounting theory does not propose ideal standards but rather seeks to understand why certain accounting methods are used under certain circumstances, making it relevant in the context of this accrual earnings management research.

3. Perposed Method

This research is a causal associative study using quantitative techniques. Ghozali (2018) explains that a quantitative approach is used in research that analyzes the relationships between variables based on statistical hypothesis testing. Quantitative research, according to Gujarati (2004), aims to measure and explain the relationships between variables through statistical methods, such as linear regression, correlation, and time series. This research can be descriptive, inferential, or explanatory. Sugiyono (2017) states that causal associative research aims to examine the relationship between two or more variables, whether it is symmetrical, causal, or interactive. A causal relationship is characterized by one of the variables, the independent variable, influencing the dependent variable. The main objective of this study is to determine the effect of financial distress, leverage, and operating cash flow on accrual earnings management, considering company size as a moderating variable. The data used is secondary data, namely the annual financial reports of manufacturing issuers listed on the Indonesia Stock Exchange (IDX) for the 2020–2024 period.

The data population is manufacturing sector companies listed on the Indonesia Stock Exchange with a time scope from 2020 – 2024, while sampling uses a purposive sampling technique, namely selecting samples based on certain criteria relevant to the research objectives. The technique used is documentation, which, according to Sugiyono (2017), is a data collection technique that involves reviewing documents and data records relevant to the research problem. Documentation techniques are applied to collect data in the form of written documents, photographs, or other people's work. These can be used in qualitative and quantitative research using published historical data. Secondary research data includes annual company financial reports, collected from the Indonesia Stock Exchange website or the official websites of the relevant companies. Additional data, such as macroeconomic data and other regulations or policies, were obtained from the Central Statistics Agency (BPS) website, the official websites of other institutions, and several literature reviews from journals indexed by Scopus and SINTA.

Regression analysis, according to Sugiyono (2017), is a statistical technique for analyzing the relationship between a dependent variable and one or more independent variables. The goal is to estimate the value of the dependent variable based on the known values of the independent variables. There are two main types of regression discussed: simple

linear regression (for one independent variable) and multiple linear regression, which is applied to two or more independent variables.

The classical assumption tests carried out are multicollinearity tests through correlation matrices, heteroscedasticity with the Glejser test, and autocorrelation tests using the Serial Correlation LM Test (Lagrange Multiplier) to obtain the Obs*R-squared value, following the Chi-square distribution with degrees of freedom according to the lag tested, with the provision that if $p > 0.05$ there is no autocorrelation between times and if $p < 0.05$ then there are symptoms of autocorrelation.

In moderated regression analysis, all the basic assumptions that apply to ordinary regression are maintained. Therefore, the assumptions in moderated regression are essentially the same as those in classical regression analysis. The general form of the moderated regression equation can be written as follows:

$$Y = \alpha + \alpha 1\ X1 + \alpha 2\ X2 + \alpha 3\ X1X2 + \varepsilon$$

4. Results and Discussion

Descriptive statistical analysis is used to describe data based on maximum, minimum, average (mean), and standard deviation values. Descriptive statistical analysis can assist in drawing conclusions about the data studied in this study to understand the characteristics of the data. The results of the descriptive analysis in this study are as follows:

	Discretionary Accruals	*Financial Distress*	*Debt to Eq. Ratio*	*Operating Cash Flow*
Mean	-0.0000	-4.7972	0.7837	0.0699
Median	0.0024	-4.5111	0.6227	0.0638
Maximum	0.2270	1.3381	2.7079	0.3834
Minimum	-0.2255	-14.5295	0.1255	-0.1776
Standar Deviasi	0.0758	2.8884	0.5083	0.0860
Skewness	-0.1585	-0.6627	1.2664	0.3223
Kurtosis	3.7146	3.5686	4.4250	3.7656

Figure 1. The results of the descriptive analysis.

The mean value approaching zero for the discretionary accruals (DA) variable suggests the sample data is near the neutral point, thus indicating no overall tendency towards accrual earnings management. Meanwhile, the median value of positive 0.0024 indicates that most companies engage in some form of income-increasing earnings management. However, the skewness value of -0.1585 indicates that a small number of companies with extreme outlier values engage in income-decreasing earnings management, causing the long tail of the curve to be slightly skewed to the left. The kurtosis value of 3.71 indicates a near-normal distribution, concentrated around the mean. The mean financial distress value of -4.7972 and the median value of -4.511 are nearly identical, indicating a fairly balanced data distribution. The data range from a minimum of -14.5295 to a maximum of 1.3381 is very wide, depicting companies ranging from very distressed to very healthy in terms of ratios, with a fairly high standard deviation of 2.8884. A skewness of -0.6627 indicates a small percentage of companies have high Altman ZSCORE ratios (extreme outliers), resulting in a mean higher than the median, with the distribution slightly skewed to the left. Companies with a financial distress ratio, with an average value of -4.7972, are still slightly more numerous than those with a healthier score of -4.5111. The DER ratio averaged 0.7837, indicating that overall, total debt is 78% of total equity. This average is slightly higher than the median of 0.6227, and a positive skewness of 1.2664 indicates a distribution strongly skewed to the right. The minimum value of 0.1255 and the maximum value of 2.7079 demonstrate a wide range in the data, from companies with conservative debt management to companies with very aggressive

leverage, with a relatively high standard deviation of 0.5083. Operating cash flow that has been normalized by total assets, gives an average value of 0.0699 and a median of 0.0638 and a standard deviation of 0.0795 indicating a data distribution that is almost normal, with a positive skewness of 0.3223 and a kurtosis of 3.7656. The minimum value is -0.1776 and the maximum is 0.3435 and the average value indicates that the majority of companies still have positive.

In this stage, panel data containing 265 company-year observations were tested to determine the best estimation model. The results of these tests using the Chow, Hausman, and Lagrange-Multiplier tests are presented below.

Uji Model Estimasi	Cross section	Prob.	Keputusan
Uji Chow	1.786646	0.0023	*Fixed Effect Model* (p<0.05)
Uji Hausman	22.285338	0.0001	*Fixed Effect Model* (p<0.05)
Uji Lagrange Multiplier	43.86538	-0.0000	*Random Effect Model* (p<0.05)

Figure 2. The results of these tests using the Chow, Hausman, and Lagrange-Multiplier tests.

The conclusion from testing the three models was that the most appropriate was the fixed effects model with a p-value <0.05 in the Chow test, which rejected H0, given the significant difference in the effects of the independent variables for each cross-sectional unit. The estimation model selection continued between the fixed effects model and the random effects model using the Hausman test. The Hausman test yielded a p-value <0.05, which rejected H0. The random effects estimator was inconsistent due to omitted variable bias or correlation between the regressor and the unobserved effect. Therefore, a fixed effects model, which assumes the unobserved individual effect, or the intercept for each individual, is more appropriate.

Uji Model Estimasi	Cross section	Prob.	Keputusan
Uji Chow	1.78587	0.0024	*Fixed Effect Model* (p<0.05)
Uji Hausman	34.72489	0.0000	*Fixed Effect Model* (p<0.05)
Uji Lagrange Multiplier	14.33967	-0.0002	*Random Effect Model* (p<0.05)

Figure 3. Therefore, a fixed effects model, which assumes the unobserved individual effect, or the intercept for each individual, is more appropriate.

The results of the estimation model test presented in Table 5.4 above show that the Chow test yielded a p-value <0.05, thus selecting the most appropriate fixed effect model. Meanwhile, the Hausman test also yielded a p-value <0.05, thus selecting the most appropriate fixed effect model, where differences in characteristics between individuals are reflected in the intercept value. The selection of a fixed effects estimation model still requires the classical assumptions to be met. Although the fixed effects model is able to address inter-individual differences, classical assumption tests are still necessary to ensure the estimation is BLUE (Best Linear Unbiased Estimator), particularly to detect symptoms of heteroscedasticity, multicollinearity, and autocorrelation, which can invalidate standard errors. The heteroscedasticity test uses the Glejser test by regressing the absolute value of the residuals against the independent variables. The results of the Glejser test are shown in the table below.

Variabel	t-Statistic	Prob.
Regresi 1		
Financial distress	0.5740	0.5666
Debt to equity ratio	1.6747	0.0955
Operating cash flow	-0.2285	0.8195
Regresi 2		
Financial distress	0.6887	0.4918
Debt to equity ratio	2.0825	0.0385
Operating cash flow	0.3704	0.7114
Firm size	-0.6853	0.4940
*Financial distress*Firm Size*	1.0525	0.2938
*Debt to equity ratio*Firm Size*	1.3920	0.1654
*Operating cash flow*Firm Size*	0.7615	0.4473

Figure 4. The results of the Glejser test are shown.

The probability of all independent variables is >0.05, indicating that they are free from heteroscedasticity. Meanwhile, in regression model 2, the leverage probability variable (DER) has a value of 0.0385 <0.05, indicating heteroscedasticity, which could negatively impact the regression model. The classical multicollinearity assumption test is performed by examining the correlation matrix between the independent variables. The following shows the correlation matrix between the independent variables.

Variabel	*Financial distress*	*Debt to equity ratio*	*Operating cash flow*	*Firm size*	*Financial distress* Firm Size*	*Debt to equity ratio*Firm Size*	*Operating cash flow*Firm Size*
Financial distress	1.0000						
Debt to equity ratio	-0.6770	1.0000					
Operating cash flow	0.2275	-0.1716	1.0000				
Firm size	-0.1539	0.2054	0.1693	1.0000			
*Financial distress*Firm Size*	-0.0343	-0.0510	0.1037	0.0875	1.0000		
*Debt to equity ratio*Firm Size*	-0.0502	0.0245	-0.1491	0.0128	-0.6465	1.0000	
*Operating cash flow*Firm Size*	0.1127	-0.1650	-0.0431	-0.2785	0.1293	-0.1704	1.0000

Figure 5. The following shows the correlation matrix between the independent variables.

The correlation values between the independent variables in Table 5.7 above are each less than 0.8, thus there are no significant signs of multicollinearity. Autocorrelation testing was performed by observing the p-value following the chi-square distribution of the Obs*R-squared values using the Serial Correlation LM Test (Lagrange Multiplier). The Obs*R-squared value was 31.18, so the chi-square distribution of regression equation 1 yielded a p-value of 0.0000 < 0.05, indicating signs of autocorrelation. Using the same method, the Obs*R-squared value was 34.07, so the chi-square distribution of regression equation 2 yielded a p-value of 0.0000 < 0.05, thus concluding signs of autocorrelation. The regression equation with the selected fixed effects model (FEM) estimation model and the estimated output from Eviews is as follows.

DA = 0,0975 + 0,0137 FD - 0.0411 DER + 0.0035 OCF + [CX=F] + ε

The coefficient of determination (R^2) indicates how much of the variation in the dependent variable can be explained by the independent variables in a regression model. Generally, the higher the R^2 value, the better the model's ability to explain data variation. The coefficient of determination in the Eviews regression model output is 0.3649, while the adjusted R^2 value is 0.1978. This means that the independent variables in the model can only explain 19.78% of the variation in the dependent variable, while the remaining 80.22% is explained by other variables outside the regression model. The coefficients and partial significance of the independent variables in the moderated regression model are presented in the following table.

Variabel	Sebelum Koreksi			Sesudah Koreksi		
	Coeff.	t-Stat.	Prob.	Coeff.	t-Stat.	Prob.
Financial distress	0.0112	-2.1841	0.0301	-0.0051	-0.7479	0.4554
Debt to equity ratio	-0.0249	-0.9759	0.3302	0.0112	9.8756	0.0000
Operating cash flow	0.0236	0.3297	0.7419	-0.0249	-1.1968	0.2328
Firm size	-0.0062	-0.2191	0.8268	0.0236	0.0892	0.9290
*Financial distress*Firm Size*	0.0030	-0.9012	0.3685	-0.0062	-0.1652	0.8689
*Debt to equity ratio*Firm Size*	0.0037	0.2522	0.8011	0.0030	0.7749	0.4393
*Operating cash flow*Firm Size*	0.1449	2.4248	0.0162	0.0037	0.2146	0.8303

Figure 6. The coefficients and partial significance of the independent variables in the moderated regression model.

The data shows a coefficient of 0.0112 for the financial distress (CFD) variable, with a p-value of 0.000 < 0.05. This means that this variable has a partial positive and significant effect on accrual earnings management. This means that when company size is at its average value, each one-unit increase in financial distress will increase the level of accrual earnings management by 0.0112 units. Other variables, namely leverage, operating cash flow, and the moderating interaction between financial distress, leverage, and operating cash flow with company size, each have probabilities above 0.05, indicating that these variables are not partially significant on accrual earnings management. The simultaneous significance test (F-test) for the regression model yielded a p-value of 0.000 < 0.05, concluding that the independent variables of financial distress, leverage, and operating cash flow, along with the moderating interaction of company size with each of these independent variables, simultaneously have a significant effect on accrual earnings management. The adjusted R^2 coefficient of determination is 0.2173, meaning that the independent variables and moderating interactions in the regression model are able to explain 21.73% of the variation in the independent variables, while the remaining 78.27% is explained by other variables outside the regression model.

5. Conclusions And Suggestions

Based on the results of this study on accrual earnings management, using the independent variables of financial distress, leverage, and operating cash flow, with company size as a moderating variable in manufacturing companies listed on the Indonesia Stock Exchange from 2020 to 2024, the following conclusions can be drawn :

Financial distress has a significant positive effect on accrual earnings management in manufacturing companies listed on the Indonesia Stock Exchange during the 2020–2024 period. Leverage does not have a significant effect on accrual earnings management in manufacturing companies listed on the Indonesia Stock Exchange during the 2020–2024 period. Operating cash flow does not have a significant effect on accrual earnings management in manufacturing companies listed on the Indonesia Stock Exchange during the 2020–2024 period. Company size is unable to moderate the effect of financial distress on accrual earnings management in manufacturing companies listed on the Indonesia Stock Exchange during the 2020–2024 period. Company size is unable to moderate the effect of leverage on accrual earnings management in manufacturing companies listed on the Indonesia Stock Exchange during the 2020–2024 period.Company size is not able to moderate the influence of operating cash flow on accrual earnings management in manufacturing companies listed on the Indonesia Stock Exchange for the period 2020–2024.

Bibliography

Aburisheh, K. E., Dahiyat, A. A., & Owais, W. O. (2022). Impact of cash flow on earnings management in Jordan. *Cogent Business & Management, 9*(1), 2135211. https://doi.org/10.1080/23311975.2022.2135211

Aljughaiman, A. A., Nguyen, T. H., Trinh, V. Q., & Du, A. (2023). The COVID-19 outbreak, corporate financial distress and earnings management. *International Review of Financial Analysis, 88*, 102675. https://doi.org/10.1016/j.irfa.2023.102675

Altman, E. I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *The Journal of Finance, 23*(4), 589–609. https://doi.org/10.2307/2978933

Azahro, I. S., & Suryaningrum, D. H. (2024). Relationship between financial distress and earnings management. *General Studies in Accounting and Research, 9*(1), 32–36. https://doi.org/10.32424/1.sar.2024.9.01.11891

Baltagi, B. H. (2013). *Econometric Analysis of Panel Data* (5th ed.). Wiley.

Blanchard, O., & Johnson, D. R. (2021). *Macroeconomics* (7th ed.). Pearson.

Boachie, C., & Mensah, E. (2022). The effect of earnings management on firm performance: The moderating role of corporate governance quality. *International Review of Financial Analysis*, *83,* 102256. https://doi.org/10.1016/j.irfa.2022.102256

Carreras-Valle, M.-J., & Ferrari, A. (2025). The cost of delivery delays. *AEA Papers and Proceedings, 115*, 618–623. https://doi.org/10.1257/pandp.20251089

Charitou, A., Elfanini, M., & Lois, P. (2007). Earnings management before corporate bankruptcy: A market-based empirical analysis. *Managerial Auditing Journal, 22*(2), 93–112. https://doi.org/10.1108/02686900710718681

Cheng, J. (2020). Analysis of market failure theories based on Toshiba's business ethic issue: Earnings overstatement scandal. *American Journal of Industrial and Business Management, 10*(1), 160–166. https://doi.org/10.4236/ajibm.2020.101011

Choi, D. W., Chatfield, H. K., & Chatfield, R. E. (2018). Agency or stewardship?: The impact of leadership structure on the debt financing of lodging firms. *International Journal of Contemporary Hospitality Management, 30*(3), 1352–1373. https://doi.org/10.1108/IJCHM-09-2016-0536

Cohen, D. A., Dey, A., Lys, T. Z., Dhaliwal, D., Klein, A., Kumar, K., Riedl, E., Srinivasan, S., Weiss, I., & Zimmermann, J. (2008). Real and accrual-based earnings management in the pre- and post-Sarbanes–Oxley periods. *Social Science Research Network*. http://ssrn.com/abstract=813088

Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management. *The Accounting Review*, *70*(2), 193–225. http://www.jstor.org/stable/248303

Dechow, P., & Dichev, I. D. (2002). The quality of earnings and accruals. *The Accounting Review, 77*(3), 1–20. https://doi.org/10.2308/accr.2002.77.3.1

Drajat, D. P., & Nengzih, N. (2025). The effect of financial distress, leverage, and firm size on earnings management. *Journal of Management, Economic, and Financial, 3*(2), 1–12. https://doi.org/10.59261/jmef.v3i2.78

Dutzi, A., & Rausch, B. (2016). Earnings management before bankruptcy: A review of the literature. *Journal of Accounting and Auditing: Research & Practice*, 1–21. https://doi.org/10.5171/2016.245891

Fajriati, N., Wahyuni, E. T., & Rosdini, D. (2023). Financial distress and earnings management before and during the COVID-19 pandemic. *Jurnal Akuntansi dan Auditing Indonesia, 27*(1), 89–104. https://doi.org/10.20885/jaai.vol27.iss1.art8

Filip, A., & Raffournier, B. (2014). Financial crisis and earnings management: The European evidence. *International Journal of Accounting, 49*(4), 455–478. https://doi.org/10.1016/j.intacc.2014.10.004

Galdi, F. C., & Johnson, E. S. (2021). Accounting for inventory costs and real earnings management behavior. *Advances in Accounting, 53*, 100530. https://doi.org/10.1016/j.adiac.2021.100530

Ghaleb, B. A. A., Kamardin, H., & Tabash, M. I. (2020). Family ownership concentration and real earnings management: Empirical evidence from an emerging market. *Cogent Economics & Finance, 8*(1), 1751488. https://doi.org/10.1080/23322039.2020.1751488

Ghozali, I. (2018). *Aplikasi analisis multivariate dengan program IBM SPSS 25*. Badan Penerbit Universitas Diponegoro.

Rahman, M. M., & Hossain, M. (2019). The effect of firm characteristics on earnings quality: The moderating role of firm size. *International Journal of Business and Management, 14*(5), 28–41. https://doi.org/10.5539/ijbm.v14n5p28

Shah, S. F., Rashid, A., & Malik, W. S. (2024). Potential substitution between accrual earnings management and real earnings management among Pakistani listed firms. *Global Business Review, 25*(1), 180–197. https://doi.org/10.1177/0972150920957617