




Nexus between financial stability and earning management in company competitiveness

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ABSTRACT

This research investigates financial stability with earnings management practices in the normal economic time dimension, the COVID-19 crisis period, and the recovery period, as a form of competitiveness. Earnings management (EM) in research is classified into high, medium, and low, and financial stability is divided into non-financial distress, gray zone and financial distress. We classify Earnings management (EM) into high, medium, and low and further categorize financial stability into non-financial distress, gray zone, and financial distress. The purposive sampling method generates a total of 141 manufacturing sector companies listed on the Indonesia Stock Exchange for the 2018–2022 period. The study employed the cross-tab method for analyzing the relationship between financial stability and earnings management. The classification of financial stability was measured using the Altman Z-score category, while the measurement of earnings management was measured using the DeAngelo model and the Modified Jones Model. The results show that there is a relationship between financial stability and earnings management, where non-financial distress companies and gray zone ones perform negative (high) earnings management, presumably because they have greater opportunities to carry out the accounting numbers of companies that are financially distressed. During non-crisis or normal times, companies classified as non-financial distress, gray zone, and financial distress engage in positive earnings management, especially non-financial distress companies.

Contribution/Originality: This study explores signaling theory in earnings management practices with the financial stability of firms (financial distress, gray zone, and non-financial distress) during the normal economic period, COVID-19 pandemic, and recovery phase.

1. INTRODUCTION

The financial stability of companies holds immense significance as a pivotal value, functioning as a primary indicator within the realm of business. Conversely, the dynamic market environment and competition compel companies to adapt for survival. Grounded in financial health, managers can make appropriate decisions concerning investment and funding, thus fostering competitiveness within a competitive environment. The capacity to bolster competitiveness and generate profits within the lifecycle of a company is not a perpetually consistent process; critical junctures sometimes arise, necessitating adjustments to endure in the business landscape (Filip & Raffournier, 2014; Gavurova, Ivankova, Rigelsky, & Příkladová, 2020; Papadaki & Tzovas, 2017). In practical terms, managers strive to uphold the image of companies as capable of confronting uncertain shifts in sales, which could potentially lead to

profit declines. Earning management achieves this (Siekelova, Androniceanu, Durana, & Michalikova, 2020; Valaskova, Androniceanu, Zvarikova, & Olah, 2021). The topic of earnings management continues to garner interest and ongoing examination, as it involves actions taken by some managers to manipulate reported profits, either to augment or diminish them, with the intention of maximizing the company's value (Amaral et al., 2013; Chang, Liang, & Yu, 2019; Markarian & Santalo, 2014).

In 2019, the world faced a crisis due to the COVID-19 virus, and Indonesia was no exception, with the virus profoundly affecting the financial health of companies. The government implemented efforts to curb the virus's spread through large-scale social restrictions, ultimately impacting all sectors of business in Indonesia. Various sectors experienced diverse effects stemming from COVID-19, including the manufacturing sector. We categorize financial health as distressed, healthy, or within a gray zone (Altman, 1968). Previous research has explored the link between financial distress as a gauge of financial health and earnings management (Agrawal & Chatterjee, 2015; Belas, Amoah, Petr kov , Kljuchnikava, & Bilan, 2020; Cho, Fu, & Yu, 2012). They discovered a correlation between a company's financial instability and its engagement in earnings management. Altman (1968) revealed that less stressed firms tend to be more active in managing their earnings, offering insights that aid lenders and investors in mitigating financial risks. Additionally, it was found that companies in less regulated industries exhibit a greater tendency towards earnings manipulation (Belas et al., 2020; Chang et al., 2019; Chen, Chen, & Huang, 2010) highlighting the importance of industry regulations in curbing such behaviors (Datta, Iskandar-Datta, & Singh, 2013). Notably, research has demonstrated that companies on the brink of bankruptcy often resort to profit manipulation upon the issuance of new debt (Kramoliř & Dobeř, 2020; Xu, Zhang, Hao, & Guo, 2021).

The absence of financial profitability can influence the selection of methods that impact profits (Habib, Uddin Bhuiyan, & Islam, 2013). Building upon the existing research, this study aims to explore the potential relationship between financial health and earnings management across three categories: distressed, healthy, and within the gray zone, specifically within the manufacturing sector. Adverse financial circumstances may lead companies to engage in earnings management as a strategy to safeguard their competitive capabilities. The study period encompasses 2018-2022, comprising the normal period of 2018, the abnormal COVID-19-influenced periods of 2019-2020, and the recovery period of 2021-2022. In this research, earning management uses the DeAngelo model and the Jones modified model. In the DeAngelo Model, earnings management simply measures discretionary accruals from total accruals. This model uses the previous year's total accruals divided by total assets as a measure of non-discretionary accruals (DeAngelo, 1986). Meanwhile, the Modified Jones Model is more detailed by differentiating total accruals into two categories, namely discretionary and non-discretionary accruals (Jones, 1991). This model considers operating cash flow as a crucial factor in controlling extreme performance, as it directly influences the resulting profit. To measure discretionary accruals, Jones modifies the discretionary measurement error on the company income with a relative adjustment that all changes in credit sales in the event period result in earnings (Dechow, 1994; Healy & Wahlen, 1999). The structure of this paper comprises several sections. The first section explores recent research on financial stability using the Z-Altman score. Following that, the subsequent section outlines the purpose and methodology, which includes details on the company database and analytical steps such as utilizing the Beneish M-Score and modified Jones model for detecting earnings management. Moreover, we investigate the relationship between financial health and earnings management using chi-square analysis. The results and discussion section consolidates the findings and compares them with global precedents. Lastly, the conclusions and suggestions section addresses limitations, practical implications, and avenues for future research.

2. LITERATUREREVIEW

2.1. Financial Stability and Earnings Management

Cash flow holds paramount importance in a company's operations. The inability to generate cash inflows can lead to an incapacity to meet short-term obligations, which is frequently cited as one of the primary reasons for

bankruptcy (Deakin, 1972; Gilson, 1989). Thus, the evaluation of a company's financial effectiveness assumes a crucial role in ensuring financial stability (Durana, Kral, Stehel, Lazaroiu, & Sroka, 2019; Fialova & Folvarcna, 2020; Valaskova et al., 2021). The study of financial stability gains significance due to its potential to prevent financial distress. Financial Distress (FD) emerges when a company fails to manage and sustain stable financial performance, subsequently causing a decline in sales value (Platt & Platt, 2002). Companies grappling with financial distress must analyze their performance to devise improvement strategies and avert bankruptcy. In an effort to uphold their image in the eyes of stakeholders, some companies resort to earnings management, although this endeavor carries significant risks due to potential investor confidence losses.

Earnings management entails managerial actions aimed at manipulating current reported earnings. Exercises of judgement, such as influencing predetermined revenue contracts or concealing and delaying the disclosure of certain components, can achieve this. These actions aim to improve profits, either to meet performance targets or to maximize overall company welfare (Holthausen, Larcker, & Sloan, 1995). Building on this, Healy (1985) discovered that when earnings are lower, managers tend to choose discretionary accruals that boost earnings, or conversely, to align with bonus plan limits.

Signaling theory, which posits that reported profits act as signals to the capital market regarding future operating performance, can examine manager's propensity to engage in earnings management (Gunny, 2010; Kramoliš & Dobeš, 2020; Xu et al., 2021). Simultaneously, agency theory suggests that profits serve as a tool to reconcile the interests of shareholders and executive management (agents). Management can employ earnings management to shape their compensation or achieve specific performance targets (Gavurova et al., 2020).

Contract Theory postulates that earnings management arises in response to prevailing contractual agreements between management and external parties (Kramoliš & Dobeš, 2020; Xu et al., 2021). Management may engage in earnings management to adhere to contract terms and conditions. The Political Cost Theory asserts that earnings management can also mitigate the repercussions of political costs stemming from unfavorable financial reports. Companies may manipulate profits to evade stringent government regulations through discretionary accruals consistent with managerial incentives (Key, 1997). Table 1 presents the list of factors affecting earning management practices.

Table 1. Literature review.

Relational earnings management	Author	Results
Economic conditions	Ho, Liu, and Sohn (2001); Kumar and Vij (2017); Beyer, Nabar, and Rapley (2018) and García-Meca and Sánchez-Ballesta (2009).	In year crisis more lot of company do EM. In a crisis year, more companies do EM
	Ho et al. (2001); Kumar and Vij (2017); Dimitras, Kyriakou, and Iatridis (2015); Filip and Raffournier (2014) and Papadaki and Tzovas (2017).	During the year crisis there is a little company do EM. During the crisis year there were very few companies doing EM
Financially stable	Durana et al. (2019); Fialova and Folvarcna (2020) and Valaskova et al. (2021).	Non-stabilizing financial conditions can lead to higher EM gray zone and healthy companies do more EM to increase market value.
	Aviantara (2021)	Under normal conditions, then earning rate is also low. Under normal conditions, the earning rate is also low.
Characteristic industry and market competitive	Chang et al. (2019); Markarian and Santalo (2014); Kordestani and Mohammadi (2016); Chen et al. (2010); Belas et al. (2020); Datta et al. (2013) and Fatima, Haque, and Usman (2020).	high EM aims to signal an increasing market value and industries with low regulation, companies tend to do high EM
	Neifar and Utz (2019)	There is no relationship between EM and stock price
Characteristic the other effect	Racko (2019); Dimitras et al. (2015); Khuong, Liem, and Minh (2020); Ramos, Medina, and Santana (2019); Sadiq, Pantamee, Mohamad, Aldeehani, and Ady (2020); Malik, Din, Shafiq, Butt, and Aziz (2019) and Key (1997).	Good corporate governance (GCG) with (Number of board directions; ethical standards, auditor quality), political costs.

3. EMPIRICAL METHODOLOGY

3.1. Conceptual Framework

The conceptual framework aims to investigate the connection between management earnings, Altman (1968) classification of the economy into the gray, distress, and healthy zones, and financial stability. Economic conditions also influence the sampling technique, employing purposive sampling with the criterion that companies had an Initial Public Offerings (IPO) before 2017, were not involved in mergers, and were neither delisted nor suspended. The study encompasses 141 companies during the period 2018–2022, resulting in a total of 705 instances of pooled data. The following is an outline of the methodological steps.

1. Determining Financial Health using Altman (1968) Z-score model, dividing companies into Non-Financial Distress (Healthy zone), the gray zone, and the distress zone.

$$Z - score = 1.2 \cdot X_1 + 1.4 \cdot X_2 + 3.3 \cdot X_3 + 0.6 \cdot X_4 + 0.998 \cdot X_5 \quad (1)$$

Description:

X_1 = (Working capital) / (Total assets).

X_2 = (Retained earnings) / (Total assets).

X_3 = (Earnings before interest and taxes) / (Total assets).

X_4 = (Market value of equity) / (Book value of total liabilities).

X_5 = Sales / (Total assets).

Z-scores determine the financial status of a company based on the following cutoff scores:

- a. $Z < 1.81$ = Distress zone (Company experiencing financial distress).
 - b. $1.81 < Z < 2.99$ = Gray zone (Company is in a condition of less robust financial health, but is not yet in financial distress). The discriminant analysis will not include companies within this zone.
 - c. $Z > 2.99$ = Healthy zone (company is free from financial distress).
2. Detect is a company that owns trends and performs earnings management (EM) using the DeAngelo Model (1986) as follows:

$$(TA_{it} = NI_{it} - CFO_{it}) \quad (2)$$

Description:

TA_{it} : Total accrual in year t .

NI_{it} : Net Income accrual in year t .

CFO_{it} : Cash Flow from Operations in year t .

3. The Modified Jones Model, as formulated by Jones (1991) was employed to detect earnings, with the rationale that in order to identify non-discretionary components, a regression encompassing the entire industry was utilized to derive coefficients within the regression model (Equation 3). We also calculated the differences between total accruals and non-discretionary accruals for each company (Equation 4). This model demonstrates a standard error, yielding the most minimal regression among other models (Dechow, Sloan, & Sweeney, 1995). Here is how we represent Equation 3.

$$\frac{NDA_{it}}{TA_{t-1}} = \alpha_0 \frac{1}{A_{it-1}} + \alpha_1 \frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} + \alpha_2 \frac{PPE_{it}}{A_{it-1}} + \varepsilon_{it} \quad (3)$$

$$(TA_{t-1} = NDA_{it} + DA_{it}) \quad (4)$$

Where:

NDA_{it} : Non-discretionary accrual in year t .

DA_{it} : Discretionary accrual in year t .

TA_{t-1} : Total accrual in year t .

A_{it-1} : Total assets in year t .

ΔREV_{it} : Annual change in revenues in year t .

ΔREC_{it} : Annual change in receivables in year t .

PPE_{it} : Long-term tangible assets in year t .

In the Jones model, the use of a lagged 1 division is aimed at achieving a consistent estimate of total accruals. In simpler terms, we expect this approach to mitigate sharp fluctuations or unreasonable disparities between adjacent time periods. It aids in mitigating the impact of heteroscedasticity, which refers to the irregular variance in total accruals across different time periods.

4. Pearson's chi-square test is employed to ascertain the level of dependency between financial health and Earnings Management (EM). Additionally, any mutual dependence is discerned through the Cramer's V value and the significance statistics obtained from the verified coefficient contingency.
5. Correspondence analysis looks at the internal structure contingencies table (where category factors are similar to each other) to find statistically significant dependencies between the factors being looked at (Equation 5).

$$I^2 = \sum iP_i + d_i^2 \quad (5)$$

4. DISCUSSION OF THE RESULTS

4.1. Financial Stability

The clustering results in the financial stability study, based on the Altman model, yield three groups: 0 for companies experiencing non-financial distress, 1 for companies positioned in the gray zone, and 2 for companies facing financial distress. Table 2 displays the categorization of financial stability.

Table 2. Financial stability of the financial sector at 2018-2022.

Code	Total Z-score	Information	2018	2019	2020	2021	2022
2	<1.8	Financial distress	43	46	50	33	32
1	1.8 – 3	Gray zone	36	33	41	25	31
0	>3	Non-financial distress	62	60	51	83	78
Total			705				

The normal economic lifespan of companies classified as NFD is significantly longer than that of companies in the gray zone and FD. During the COVID-19 period, specifically in 2019 and 2020, there was a noticeable increase in the number of companies falling into the financial distress area and the gray zone, underscoring the substantial impact of the crisis. Within the non-FD group, there was also a decline in numbers, indicating that some companies transitioned to the gray zone. Financial distress detrimentally affects a company's ability to meet its financial obligations. This encompasses challenges in debt repayment, liquidity issues, and even the risk of bankruptcy. Moreover, financial distress can adversely impact relationships with stakeholders such as shareholders, creditors, business partners, and companies with lower market values. Consequently, companies might resort to earnings management as a strategy to potentially present better financial reports.

The classification results include the average values of the DeAngelo model for each company's financial stability conditions, as outlined in Table 3.

Table 3. Average earnings management and financial stability.

Level earnings management DeAngelo	Financial stability	Average earnings management modified Jones				
		2018	2019	2020	2021	2022
Low	0	-0.018	-0.065	-0.0870	-0.054	-0.050
	1	-1.008	-0.040	-0.087	-0.053	-0.084
	2	-0.091	-0.066	-0.084	-0.060	-0.050
Medium	0	-0.004	-0.021	-0.054	-0.026	-0.021
	1	-0.004	-0.020	-0.056	-0.0280	-0.021
	2	-0.003	-0.022	-0.055	-0.0240	-0.024
High	0	0.014	0.008	-0.033	-0.004	0.013
	1	0.013	0.001	-0.027	-0.009	0.007
	2	0.040	-0.003	-0.031	0.114	0.009

Note: 0: Companies non-financial distress, 1: Companies in in the gray zone, 2: Companies in financial distress.

The Jones model used in this study was modified to incorporate adjustments for industrial factors, as these factors are deemed to influence earnings management. The average earnings management using the Jones model is presented in Table 4.

Table 4. Average earnings management and financial stability.

Level modified Jones	Financial stability	Average earnings management modified Jones				
		2018	2019	2020	2018	2022
Low	0	-0.031	-0.065	-0.087	-0.054	-0.050
	1	-0.022	-0.040	-0.087	-0.053	-0.084
	2	-0.024	-0.066	-0.085	-0.060	-0.050
Medium	0	-0.004	-0.021	-0.054	-0.026	-0.021
	1	-0.004	-0.020	-0.056	-0.028	-0.021
	2	-0.003	-0.022	-0.055	-0.024	-0.024
High	0	0.014	0.008	-0.033	-0.004	0.013
	1	0.013	0.001	-0.027	-0.009	0.007
	2	0.040	-0.003	-0.031	0.114	0.009

Note: 0: Companies non-financial distress, 1: Companies in the gray zone, 2: Companies in financial distress.

The average value of EM is negative, indicating that companies attempt to portray lower performance. There are several reasons for this, one of which is to evade taxes by implementing creative accounting strategies to reduce reported earnings. Conversely, positive average EM values suggest that companies aim to enhance their market standing by employing profit management strategies, such as accelerating revenue recognition or delaying expense recognition, to create a more favorable impression of financial performance than it actually is (Aviantara, 2021).

At the low and medium levels of earnings management, companies consistently exhibit negative earnings management values, signifying their efforts to maintain the appearance of lower performance throughout the observation period, regardless of whether the conditions are normal, abnormal (Covid-19), or during the recovery phase.

For high earnings management levels, both positive and negative mean values indicate that under normal circumstances, companies falling within the non-financial distress category (0) or Healthy and Gray Zone (1) categories employ positive earnings management strategies, aligning with findings from prior studies (Belas et al., 2020; Chang et al., 2019; Datta et al., 2013; Kordestani & Mohammadi, 2016; Markarian & Santalo, 2014; Zhiwu & Jindra, 2010).

During the abnormal period (2019-2020) marked by the crisis, more non-financial distress companies (0) engaged in negative earnings management practices, indicating their intent to reduce performance by lowering income. In periods of economic normalcy, earnings management tends to be more elevated, both in regular years and during the recovery phase (2021-2022). In 2022, all companies classified as non-financial distress (0), Gray Zone (1), and financial distress (2) exhibit lower earnings management, suggesting an improvement in their financial condition compared to the preceding year. Some companies portray higher performance based on a positive EM indicator.

The analysis of the relationship between financial stability and earnings management is conducted using a crosstab, measuring the strength of the association between the values of these two variables. We use the Chi-square value to quantify the strength of this relationship.

Table 5 shows the proportion of companies based on financial stability (FS) and Earning Management (EM) conditions. In 2018, it showed that there were 41.9% more companies in non-FD conditions with low EM levels than other companies in the same category. In 2019, companies in non-FD conditions with high EM levels were 43.4% higher than FD companies with high EM, namely 25%. This condition explains that, from five years of observation, it appears that companies with non-FD conditions have a higher level of EM, indicating that they have more opportunities for earnings management than FD companies. During the COVID-19 pandemic (2020-2022), it

appears that many FD companies carrying out low or high EM have increased, to respond to conditions caused by COVID.

Table 5. Crosstabulation degree earnings management and financial stability.

Degree of earnings management	Financial stability Altman			Total
	0	1	2	
2018				
Low	26 (41.9%)	9(25.0%)	12 (27.9%)	47 (33.3%)
Medium	21 (33.9%)	17(47.2%)	9 (20.9%)	47 (33.3%)
High	15 (24.3%)	10 (27.8%)	22 (51.2%)	47 (33.3%)
Pearson chi-square	12,567			
2019				
Low	18 (30.0%)	10 (30.3%)	19 (39.6%)	47 (33.3%)
Medium	16 (26.7%)	14 (42.4%)	17 (35.4%)	47 (33.3%)
High	26 (43.4%)	9 (27.3%)	12 (25.0%)	47 (33.3%)
Pearson chi-square	5,698*			
2020				
Low	12 (23.5%)	14 (34.1%)	21 (33.3%)	47 (33.3%)
Medium	13 (25.5%)	10 (24.4%)	24 (49.0%)	47 (33.3%)
High	26 (51.0%)	17 (41.5%)	4 (8.2%)	47 (33.3%)
Pearson chi-square	23,226**			
2021				
Low	32 (38.6%)	7 (28.1%)	8 (24.2%)	47 (33.3%)
Medium	30 (36.1%)	8 (32.0%)	9 (27.3%)	47 (33.3%)
High	21 (25.3%)	10 (40.0%)	16 (48.5%)	47 (33.3%)
Pearson chi-square	6,496 *			
2022				
Low	14 (17.9%)	11 (35.5%)	22 (68.8%)	47 (33.3%)
Medium	33 (42.3%)	9 (29.0%)	5 (15.6%)	47 (33.3%)
High	31 (39.7%)	11 (35.5%)	5 (15.6%)	47 (33.3%)
Pearson chi-square	5,678*			

Note: 0: Companies non-financial distress, 1: Companies in the gray zone, 2: Companies in financial distress.
* significant at 5% level, ** significant at 1% level.

The earnings management practices carried out by the company in FD conditions are carried out at a low EM level. During the COVID period, it was also seen that there was a shift in the number of companies in the non-FD category with low EM, which decreased, while the number of non-FD companies with medium EM increased, as did FD companies with low EM which experienced an increase. This shift shows the influence of the pandemic on the company's condition. Relationship financial stability and Earnings management shown in Table 6:

Table 6. Relational earnings management and financial stability.

EM Jones		Financial stability			Total
		0	1	2	
Low	N	96	60	79	235
	Expected count	111.3	56.3	68.3	235
	Residual	-15.3	4.7	10.7	
Medium	N	109	57	69	235
	Expected count	111.3	56.3	68.3	235
	Residual	-2.3	1.7	7	
High	N	129	49	57	235
	Expected count	111.3	56.3	68.3	235
	Residual	17.7	-6.3	-11.3	
Total	Observation	334	166	205	705
	Expected observation	334	166	205	705
Pearson chi-square		9,684			
Likelihood ratio		9,702			
Linear-by-linear association		8,791			
Sig.		0.046*			

Note: 0: Companies non-financial distress, 1: Companies in the gray zone, 2: Companies in financial distress
* significant at 5% level

Table 6 shows that companies that are not experiencing financial pressure and engage in high earnings management are significantly more numerous, totaling 129 companies, in comparison to other conditions. This suggests that companies free from financial pressure tend to possess greater flexibility in conducting earnings management. Additionally, in the case of non-financial distress, these companies likely have sufficient resources to develop strong operational performance-driven earnings management strategies, all in an effort to maintain a positive image for investors (Belas et al., 2020; Chang et al., 2019; Datta et al., 2013; Kordestani & Mohammadi, 2016; Markarian & Santalo, 2014; Zhiwu & Jindra, 2010).

On the other hand, companies experiencing Financial Distress (FD) that engage in low levels of earnings management are more abundant than FD companies that implement high earnings management practices. This pattern can be attributed to the fact that companies facing financial distress often have constraints in executing earnings management practices due to their focus on recovery or debt restructuring (Kramoliš & Dobeš, 2020; Xu et al., 2021), addressing cash flow issues, and seeking additional funding sources to meet financial obligations. The study results strongly indicate a relationship between financial well-being and financial challenges.

5. CONCLUSIONS

This study reveals the role of signal theory, which explains that earnings are managed according to company conditions to show performance according to goals. This has been proven by a number of theories and empirical findings that confirm that earnings management is related to financial stability. The earnings management value has positive and negative values, indicating that the company adjusts earnings according to profit targets (showing lower performance or higher performance) as part of its goal to maintain company value. Companies with healthy financial conditions (non-financial distress) and Gey zones have higher earnings management because they have more opportunities to manage. In companies with financial pressure category, the company performs earnings management at a low level, high earnings management has positive and negative average values, indicating that under normal conditions, both companies with non-financial distress (0) or healthy and gray zone (1) prefer to use earnings management positive, indicating that they report better according to the findings (Belas et al., 2020; Chang et al., 2019; Chen et al., 2010; Datta et al., 2013; Kordestani & Mohammadi, 2016; Markarian & Santalo, 2014). Meanwhile, companies that experience financial distress conditions use more earnings management at a lower level, because they are more focused on debt recovery or restructuring (Kramoliš & Dobeš, 2020; Xu et al., 2021).

This study uses panel and longitudinal data periods, covering normal economic periods, crises due to a pandemic, and recovery periods. During the normal period (2018), more companies with non-financial distress use negative earnings management (low), than financial distress companies, which use earnings management (high). During abnormal times (Covid), non-financial distress companies do more earnings management (high) than companies in Gray and financial distress positions. During abnormal or crisis times, non-financial distress companies (0) carry out negative earnings management (high), proving that the company justifies lowering its profits. During the recovery period in 2022, all companies in the non-financial distress (0), grey zone (1), financial distress (2) classifications had lower earnings management. From previous years, it shows that companies want to show higher performance from positive earnings management value indicators.

The research results provide practical implications, namely information for investors, creditors, and the government (regulator) about the relationship between financial stability and earnings management. Creditors can make recommendations on the feasibility of granting credit, financial performance, and the validity of financial reports so as to avoid risks, as well as for capital market players. We expect future research to conduct studies on company size, taking industry factors into account.

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Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

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REFERENCES

- Agrawal, K., & Chatterjee, C. (2015). Earnings management and financial distress: Evidence from India. *Global Business Review*, 16, 140–154. <https://doi.org/10.1177/0972150915601928>
- Altman, E. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *The Journal of Finance*, 23(4), 589–609. <https://doi.org/10.1111/j.1540-6261.1968.tb00843.x>
- Amaral, G., Bushee, J., Cordani, U. G., Kawashita, K., Reynolds, J. H., Almeida, F. F. M. D. E., . . . Junho, M. D. C. B. (2013). Covariance structure analysis of health-related indicators for elderly people living at home, focusing on subjective sense of health. *Journal of Petrology*, 39(1), 1689–1699.
- Aviantara, R. (2021). The association between fraud hexagon and government's fraudulent financial report. *Asia Pacific Fraud Journal*, 6(1), 26–42. <https://doi.org/10.21532/apfjournal.v6i1.192>
- Belas, J., Amoah, J., Petráková, Z., Ključnikava, Y., & Bilan, Y. (2020). Selected factors of SMEs management in the service sector. *Journal of Tourism and Services*, 11(21), 129–146. <https://doi.org/10.29036/jots.v11i21.215>
- Beyer, B. D., Nabar, S. M., & Rapley, E. T. (2018). Real earnings management by benchmark-beating firms: Implications for future profitability. *Accounting Horizons*, 32(4), 59–84. <https://doi.org/10.2308/acch-52167>
- Chang, H.-Y., Liang, L.-H., & Yu, H.-F. (2019). Market power, competition and earnings management: Accrual-based activities. *Journal of Financial Economic Policy*, 11(3), 368–384. <https://doi.org/10.1108/jfep-08-2018-0108>
- Chen, Y., Chen, C. H., & Huang, S. L. (2010). An appraisal of financially distressed companies' earnings management: Evidence from listed companies in China. *Pacific Accounting Review*, 22(1), 22–41. <https://doi.org/10.1108/01140581011034209>
- Cho, S., Fu, L., & Yu, Y. (2012). New risk analysis tools with accounting changes: Adjusted Z-score. *Journal of Credit Risk*, 8(1), 89–108. <https://doi.org/10.21314/JCR.2012.137>
- Datta, S., Iskandar-Datta, M., & Singh, V. (2013). Product market power, industry structure, and corporate earnings management. *Journal of Banking & Finance*, 37(8), 3273–3285. <https://doi.org/10.1016/j.jbankfin.2013.03.012>
- Deakin, E. (1972). A discriminant analysis of predictors of business failure. *Journal of Accounting Research*, 10, 167–179. <https://doi.org/10.2307/2490225>
- DeAngelo, L. E. (1986). Accounting numbers as market valuation substitutes: A study of management buyouts of public stockholders. *Journal of Accounting Review*, 61(3), 400–420.
- Dechow, M. (1994). Accounting & economics the role of accounting accruals. *Journal of Accounting and Economics*, 18, 3–42. [https://doi.org/10.1016/0165-4101\(94\)90016-7](https://doi.org/10.1016/0165-4101(94)90016-7)
- Dechow, P. M., Sloan, R., & Sweeney, A. P. (1995). Detecting earnings management. *Accounting Review*, 70(2), 193–225.
- Dimitras, A. I., Kyriakou, M. I., & Iatridis, G. (2015). Financial crisis, GDP variation and earnings management in Europe. *Research in International Business and Finance*, 34, 338–354. <https://doi.org/10.1016/j.ribaf.2015.02.017>
- Durana, P., Kral, P., Stehel, V., Lazaroïu, G., & Sroka, W. (2019). Quality culture of manufacturing enterprises: A possible way to adaptation to industry 4.0. *Social Sciences*, 8(4), 124. <https://doi.org/10.3390/socsci8040124>
- Fatima, H., Haque, A., & Usman, M. (2020). Is there any association between real earnings management and crash risk of stock price during uncertainty? An evidence from family-owned firms in an emerging economy. *Future Business Journal*, 6(1), 1–12. <https://doi.org/10.1186/s43093-020-00038-5>
- Fialova, V., & Folvarcna, A. (2020). Default prediction using neural networks for enterprises from the post-soviet country. *Ekonomicko-Manazerske Spektrum*, 14(1), 43–51. <https://doi.org/10.26552/ems.2020.1.43-51>

- Filip, A., & Raffournier, B. (2014). Financial crisis and earnings management: The European evidence. *The International Journal of Accounting*, 49(4), 455-478. <https://doi.org/10.1016/j.intacc.2014.10.004>
- García-Meca, E., & Sánchez-Ballesta, J. P. (2009). Corporate governance and earnings management: A meta-analysis. *Corporate Governance: An International Review*, 17(5), 594-610. <https://doi.org/10.1111/j.1467-8683.2009.00753.x>
- Gavurova, B., Ivankova, V., Rigelsky, M., & Přívarová, M. (2020). Relations between tourism spending and global competitiveness—an empirical study in developed OECD countries. *Journal of Tourism and Services*, 11(21), 38-54. <https://doi.org/10.29036/jots.v11i21.175>
- Gilson, S. C. (1989). Management turnover and financial distress. *Journal of Financial Economics*, 25(2), 241-262. [https://doi.org/10.1016/0304-405X\(89\)90083-4](https://doi.org/10.1016/0304-405X(89)90083-4)
- Gunny, K. A. (2010). The relation between earnings management using real activities manipulation and future performance: Evidence from meeting earnings benchmarks. *Contemporary Accounting Research*, 27(3), 855-888. <https://doi.org/10.1111/j.1911-3846.2010.01029.x>
- Habib, A., Uddin Bhuiyan, B., & Islam, A. (2013). Financial distress, earnings management and market pricing of accruals during the global financial crisis. *Managerial Finance*, 39(2), 155-180. <https://doi.org/10.1108/03074351311294007>
- Healy, P. M. (1985). The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics*, 7(1-3), 85-107. [https://doi.org/10.1016/0165-4101\(85\)90029-1](https://doi.org/10.1016/0165-4101(85)90029-1)
- Healy, P. M., & Wahlen, J. M. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting Horizons*, 13, 365-383. <http://dx.doi.org/10.2308/acch.1999.13.4.365>
- Ho, L.-C. J., Liu, C.-S., & Sohn, P. S. (2001). The value relevance of accounting information around the 1997 Asian financial crisis—the case of South Korea. *Asia-Pacific Journal of Accounting & Economics*, 8(2), 83-107. <https://doi.org/10.1080/16081625.2001.10510591>
- Holthausen, R. W., Larcker, D. F., & Sloan, R. G. (1995). Annual bonus schemes and the manipulation of earnings. *Journal of Accounting and Economics*, 19(1), 29-74. [https://doi.org/10.1016/0165-4101\(94\)00376-G](https://doi.org/10.1016/0165-4101(94)00376-G)
- Jones, J. J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, 29(2), 193-228. <https://doi.org/10.2307/2491047>
- Key, K. G. (1997). Political cost incentives for earnings management in the cable television industry. *Journal of Accounting and Economics*, 23(3), 309-337. [https://doi.org/10.1016/S0165-4101\(97\)00012-8](https://doi.org/10.1016/S0165-4101(97)00012-8)
- Khuong, N. V., Liem, N. T., & Minh, M. T. H. (2020). Earnings management and cash holdings: Evidence from energy firms in Vietnam. *Journal of International Studies*, 13(1), 247-261. <https://doi.org/10.14254/2071-8330.2020/13-1/16>
- Kordestani, G. R., & Mohammadi, M. R. (2016). A study of the relationship between product market competition and earnings management. *Procedia Economics and Finance*, 36, 266-273. [https://doi.org/10.1016/S2212-5671\(16\)30037-5](https://doi.org/10.1016/S2212-5671(16)30037-5)
- Kramoliš, J., & Dobeš, K. (2020). Debt as a financial risk factor in SMEs in the Czech Republic. *Equilibrium-Quarterly Journal of Economics and Economic Policy*, 15(1), 87-105. <https://doi.org/10.24136/eq.2020.005>
- Kumar, M., & Vij, M. (2017). Earnings management and financial crisis: Evidence from India. *Journal of International Business and Economy*, 18(2), 84-101. <https://doi.org/10.51240/jibe.2017.2.4>
- Malik, A., Din, S. U., Shafiq, M., Butt, B. Z., & Aziz, H. (2019). Earning management and the likelihood of financial distress in banks—evidence from Pakistani commercial banks. *Public Finance Quarterly*, 64(2), 208-221.
- Markarian, G., & Santalo, J. (2014). Product market competition, information and earnings management. *Journal of Business Finance & Accounting*, 41(5-6), 572-599. <https://doi.org/10.1111/jbfa.12064>
- Neifar, S., & Utz, S. (2019). The effect of earnings management and tax aggressiveness on shareholder wealth and stock price crash risk of German companies. *Journal of Applied Accounting Research*, 20(1), 94-119. <https://doi.org/10.1108/JAAR-11-2016-0106>
- Papadaki, A., & Tzovas, C. (2017). Financial crisis and accrual and real earnings management in Europe. *Corporate Ownership & Control*, 14(3), 8-19. <https://doi.org/10.22495/cocv14i3art1>

- Platt, H. D., & Platt, M. B. (2002). Predicting corporate financial distress: Reflections on choice-based sample bias. *Journal of Economics and Finance*, 26(2), 184-199. <https://doi.org/10.1007/bf02755985>
- Racko, G. (2019). Does economic rationalization decrease or increase accounting professionals' occupational values? *Journal of Business Ethics*, 158, 763-777. <https://doi.org/10.1007/s10551-017-3729-6>
- Ramos, M. M., Medina, S. A. J., & Santana, B. F. (2019). Research topics in accounting fraud in the 21st century: A state of the art. *Sustainability*, 11(6), 1570. <https://doi.org/10.3390/su11061570>
- Sadiq, M., Pantamee, A. A., Mohamad, S., Aldeehani, T. M., & Ady, S. U. (2020). Corporate governance and earnings management: Evidence from listed non-financial firms. *Polish Journal of Management Studies*, 22(2), 456-469. <https://doi.org/10.17512/pjms.2020.22.2.30>
- Siekelova, A., Androniceanu, A., Durana, P., & Michalikova, K. F. (2020). Earnings management (Em), initiatives and company size: An empirical study. *Acta Polytechnica Hungarica*, 17(9), 41-56. <https://doi.org/10.12700/aph.17.9.2020.9.3>
- Valaskova, K., Androniceanu, A.-M., Zvarikova, K., & Olah, J. (2021). Bonds between earnings management and corporate financial stability in the context of the competitive ability of enterprises. *Journal of Competitiveness*, 13(4), 167. <https://doi.org/10.7441/joc.2021.04.10>
- Xu, C., Zhang, H., Hao, J., & Guo, L. (2021). Real earnings management in bankrupt firms. *Journal of Corporate Accounting & Finance*, 32(2), 22-38. <https://doi.org/10.1002/jcaf.22483>
- Zhiwu, C., & Jindra, J. (2010). A valuation study of stock market seasonality and the size effect. *The Journal of Portfolio Management*, 36(3), 78-92. <https://doi.org/10.3905/jpm.2010.36.3.078>

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