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THE ROLE OF EARNINGS MANAGEMENT, CREDIT RISK, AND COST EFFICIENCY, MODERATED BY INTERNAL CONTROL, IN PREDICTING MARKET REACTIONS AT BANKS LISTED ON THE IDX

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Abstract

This study examines the impact of earnings management, credit risk, and cost efficiency on market reaction, using internal supervision as a moderating variable. Focusing on the Indonesian banking sector, secondary data from 40 banking companies listed on the Indonesia Stock Exchange (IDX) were selected via purposive sampling. Variables were proxied by discretionary accruals (earnings management), Non-Performing Loans (credit risk), the BOPO ratio (cost efficiency), the proportion of independent commissioners (internal supervision), and abnormal returns (market reaction). Data were analyzed using panel data regression and Moderated Regression Analysis (MRA). The results reveal that earnings management does not affect market reaction, indicating investors do not respond to earnings information indicating manipulation. Conversely, credit risk and cost efficiency significantly influence market reaction, reflecting investor focus on loan risk and operational management. Furthermore, while internal supervision does not moderate the effect of earnings management, it significantly moderates the impacts of both credit risk and cost efficiency. Ultimately, these findings highlight that effective corporate governance mechanisms, such as independent commissioners, enhance information credibility and market sensitivity to financial performance.

Keywords: ***Earnings Management, Credit Risk, Cost Efficiency, Internal Oversight, Market Reaction, Banking Companies***

INTRODUCTION

The stock market serves as a vital instrument within the financial system, functioning both as a mechanism for companies to raise long-term funds to support operational activities and as an investment vehicle for the public. Stock price movements are heavily dictated by available information, encompassing macroeconomic conditions, overall market trends, and specific corporate performance. The banking stock market, in particular, is currently navigating increasingly complex dynamics driven by the globalization and internationalization of the financial system (Cherniuk, 2013). Consequently, these price movements are characterized by high volatility, especially during phases of economic crisis or turbulence, reflecting the banking sector's acute sensitivity to economic shocks and market uncertainties (Čeryová & Árendáš, 2025).

Market reactions, typically reflected through fluctuations in stock prices and trading volumes, represent the process by which investors absorb, assess, and respond to information and significant corporate announcements (Lalepour, 2013; Melgarejo, Montiel, & Sanz, 2016). These reactions serve as critical indicators for investors and management in evaluating corporate prospects. To accurately measure these market reactions, the Capital Asset Pricing Model (CAPM) is frequently employed to determine the expected return based on systematic risk (Bhattacharya, 2018; Shetty, Jyothi Dsouza, & Thonse Hawaldar, 2021). However, empirical observations often reveal a substantial discrepancy between the expected return calculated using CAPM and the actual realized return in the market. This gap highlights that the market does not always operate efficiently based purely on risk; instead, stock returns are heavily influenced by non-market factors such as information asymmetry, the quality of financial

reporting, and broader investor sentiment (Bagonza, Chen, & Rech, 2024; Gupta & Jain, 2025; Sun & Yang, 2025). Based on extensive literature reviews and market data, several fundamental internal factors act as potent signals that shape these market reactions. First, the practice of earnings management—where management opportunistically intervenes in financial reporting—significantly reduces the transparency of financial reports, potentially triggering doubt and negative long-term responses from investors (Farooque, Suyono, & Rosita, 2013; Rashid, Drira, & Sharma, 2014; Quoc Thinh Tran, Lam, & Luu, 2020). Second, asset quality, specifically measured through credit risk or Non-Performing Loans (NPLs), acts as a fundamental indicator that strongly reinforces negative market sentiment, as it directly reflects the probability of debtor default and potential declines in profitability (Khanthavit, 2020; Sturm, 2013). Conversely, the market tends to respond positively to entities that demonstrate strong cost efficiency, measured by the Operating Expenses to Operating Income (BOPO) ratio, because it is closely linked to operational quality and the sustainability of management performance (Ab-Hamid, Rahman, Majid, & Janora, 2018; Curi & Lozano-Vivas, 2020).

Despite the clear signaling power of these fundamental factors, the market's response is heavily dependent on the quality of corporate governance. To bridge the agency conflicts regarding these financial indicators, internal oversight through an independent board of commissioners is crucial for strengthening the credibility of financial information in the eyes of investors (Palalangan, Mannan, Rura, & Pontoh, 2024; Suhadak, Kurniaty, Handayani, & Rahayu, 2019). However, existing data indicates that despite high proportions of independent commissioners in several Indonesian banks, extreme fluctuations and discrepancies in market reactions persist. Therefore, this study aims to comprehensively test and analyze the effects of earnings management, credit risk, and cost efficiency on market reactions, along with the effectiveness of internal oversight as a moderating variable in banking companies listed on the Indonesia Stock Exchange

LITERATURE REVIEW

Theoretical Framework

This study is grounded in four main theories: Agency Theory, Signal Theory, Market Efficiency Theory, and Corporate Governance Theory. Agency Theory highlights the conflict of interest between management (agents) and shareholders (principals) caused by information asymmetry, which incentivizes managers to engage in opportunistic behaviors such as earnings management. Signal Theory posits that managers use financial indicators, such as discretionary accruals, Non-Performing Loans (NPL), and cost efficiency (BOPO), to signal the company's unobservable quality and future prospects to the market. Furthermore, the Efficient Market Hypothesis (EMH) suggests that stock prices quickly and accurately reflect all available information, meaning that market reactions observed through abnormal returns serve as a primary indicator of how investors rationally process corporate financial data. Finally, Corporate Governance Theory emphasizes that effective monitoring mechanisms, such as independent commissioners, can mitigate agency conflicts, restrict opportunistic behavior, and enhance the credibility of financial signals.

The Effect of Earnings Management, Credit Risk, and Cost Efficiency on Market Reactions

Earnings management, measured by discretionary accruals, reflects managerial intervention in financial reporting. Previous studies, such as (Farooque et al., 2013) and (Handoko & Sholichah, 2019), found that earnings management negatively affects market reactions, as investors penalize perceived manipulation. Conversely, (Lestari & Muthmainnah, 2025) noted that in Indonesia, investors might view earnings management positively as an action that increases the informative value of earnings rather than as an opportunistic behavior. Credit risk, proxied by NPL, represents the potential loss from debtor defaults and acts as a strong negative signal regarding asset quality. High NPL increases investor perception of risk, leading to negative market reactions, as supported by (Tian, 2024), who found that credit default risk significantly reduces stock returns. Cost efficiency, measured by the BOPO ratio, indicates a bank's ability to minimize operational costs relative to its income. High BOPO signals operational inefficiency, which theoretically triggers a negative market response since it threatens future profitability and competitive advantage.

The Moderating Role of Internal Control

Internal control, proxied by the proportion of independent commissioners, plays a crucial role in moderating the relationship between financial indicators and market reactions. According to Corporate Governance Theory, a strong internal control mechanism limits aggressive earnings management and ensures transparent risk and cost management. Previous research by (Hotroha & Einde, 2025) and (Tian, 2024) demonstrates that internal control

positively moderates the impact of financial performance and credit risk on market returns. The presence of independent commissioners enhances the credibility of financial reports, thereby stabilizing investor responses to earnings management and reducing the negative market reactions associated with high credit risk and cost inefficiency.

Research Gap

While previous literature has extensively explored the individual impacts of earnings management, credit risk, and cost efficiency on market returns, empirical results remain inconsistent, particularly regarding conflicting market responses to earnings management. Additionally, there is limited comprehensive research integrating these fundamental factors with the moderating effect of internal control specifically within the highly volatile Indonesian banking sector. This study addresses this gap by holistically examining these interactions using data from banking companies listed on the Indonesia Stock Exchange, aiming to clarify how corporate governance mechanisms influence investor sensitivity to financial performance signals.

METHOD

This study employs a quantitative associative research design to examine the relationship and influence between the independent variables and the dependent variable. The population comprises 46 banking companies listed on the Indonesia Stock Exchange (IDX). A purposive sampling technique was utilized to select 40 companies that did not experience prolonged stock trading suspensions during the 2020–2024 observation period, yielding a total of 200 panel data observations. Secondary data were collected through documentation techniques, extracting financial and governance data from the annual and sustainability reports published by the sampled companies. The dependent variable in this study is market reaction, measured by abnormal return, which is the difference between the actual stock return and the expected return based on the Capital Asset Pricing Model (CAPM). The independent variables include earnings management, measured using Discretionary Accruals (DA) calculated via the Modified Jones Model; credit risk, proxied by the Non-Performing Loan (NPL) ratio; and cost efficiency, measured by the Operating Expenses to Operating Income (BOPO) ratio. Additionally, internal control serves as the moderating variable, proxied by the proportion of independent commissioners on the board.

The data were analyzed using panel data regression and Moderated Regression Analysis (MRA) to evaluate the interaction effects of internal control. Prior to estimating the regression model, a Stationarity Test using the Augmented Dickey-Fuller method and a Cointegration Test via the Johansen method were conducted to prevent spurious regression and confirm long-term equilibrium among the variables. Panel data model selection was determined through the Chow Test and Hausman Test, which identified the Fixed Effect Model as the most appropriate approach. To address potential classical assumption violations, specifically heteroscedasticity and autocorrelation, the Fixed Effect Model was estimated using the Generalized Least Square (GLS) approach via Panel EGLS with cross-section weights. Finally, hypothesis testing was carried out using the t-statistic test to ascertain the significance of the relationships.

RESULTS AND DISCUSSION

This section presents the results of panel data processing from 40 banking companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period, yielding a total of 200 observations. The tests were conducted to examine the effect of earnings management, credit risk, and cost efficiency on market reactions, as well as the moderating role of internal control.

Descriptive Statistics

Table 1 Descriptive Statistics

	RP	DA	NPL	BOPO	KI
Mean	23.62480	0.024217	2.007490	73.47712	57.17641
Median	-6.065000	0.006617	1.686500	64.91950	57.14300
Maximum	2621.900	2.803209	8.953000	367.1960	100.0000
Minimum	-134.6600	-0.371920	0.000000	15.40000	0.000000
Std. Dev.	202.9458	0.247551	1.634268	46.05579	16.30109
Observations	200	200	200	200	200

Source: Eviews (2026)

According to the analysis results, the average market reaction (RP) was recorded at 23.62, indicating that the market generally provided a positive response (favorable reaction) despite being in a period of uncertainty due to the pandemic. Earnings management practices (DA) had an average of 0.024, which is classified as normal or low, indicating minimal earnings manipulation. Credit risk (NPL) averaged 2.00%, showing that credit quality remained in the healthy category. Cost efficiency (BOPO) recorded an average of 73.47%, falling into the highly efficient category. Meanwhile, the proportion of independent commissioners (KI) as a proxy for internal control had an average of 57.17%, meaning it met the standard banking governance requirements.

Unit Root Test and Cointegrration Test

Table 2 Unit Root Test

Variabel	t – Statistic	Prob*
Market Reaction (RP)	-13.29955	0.0000
Earnings Management Practices (DA)	-13.15346	0.0000
Credit Risk (NPL)	-6.824624	0.0000
Cost Efficiency (BOPO)	-12.94412	0.0000
Internal Control (KI)	-7.018381	0.0000

Source: Eviews (2026)

The stationarity test (Unit Root Test) is conducted to ensure that the observational data utilized in the study possess a constant mean and variance over time. This procedure is crucial in panel data analysis to prevent the occurrence of spurious regression. Table 2 presents the stationarity evaluation results for each variable:

Market Reaction (RP): Demonstrates a t-Statistic value of -13.29955 with a probability level of 0.0000. Earnings Management Practices (DA): Demonstrates a t-Statistic value of -13.15346 with a probability level of 0.0000. Credit Risk (NPL): Demonstrates a t-Statistic value of -6.824624 with a probability level of 0.0000. Cost Efficiency (BOPO): Demonstrates a t-Statistic value of -12.94412 with a probability level of 0.0000. Internal Control (KI): Demonstrates a t-Statistic value of -7.018381 with a probability level of 0.0000.

Overall, all variable instruments in this study—encompassing dependent, independent, and moderating variables—yielded a probability value (Prob*) of 0.0000. Because the probability values of these five variables are significantly lower than the standard significance threshold (**< 0.05**), the null hypothesis, which assumes the presence of a unit root (non-stationary data), is robustly rejected. Consequently, it can be concluded that all research data (Market Reaction, Earnings Management Practices, Credit Risk, Cost Efficiency, and Internal Control) are proven to be stationary. The fulfillment of this stationarity assumption confirms the feasibility and validity of the data for further processing in the panel data regression model estimation stages.

Table 3 Johansen Cointegration Test Results

Hypothesized No. of CE(s)	Trace Statistic	Prob.	Max-Eigen Statistic	Prob.
None *	218.4762	0.0000	84.07283	0.0000
At most 1 *	134.4033	0.0000	56.48196	0.0000
At most 2 *	77.92137	0.0000	39.33856	0.0001
At most 3 *	38.58281	0.0000	25.37943	0.0006
At most 4 *	13.20338	0.0000	13.20338	0.0003

Note: * denotes rejection of the hypothesis at the 0.05 level. Both Trace and Max-eigenvalue tests indicate 5 cointegrating equations at the 0.05 level.

Source: Eviews (2026)

After confirming the stationarity of the data, a cointegration test was conducted to identify whether a long-term equilibrium relationship exists among the examined variables. This study employed the Johansen Cointegration Test, utilizing both the Trace Statistic and Maximum Eigenvalue approaches. As presented in Table 3, the probability values for all hypothesized numbers of cointegrating equations (from "None" to "At most 4") are well below the 0.05 significance level. Both the Trace Statistic and the Maximum Eigenvalue test explicitly indicate the presence of 5 cointegrating equations at the 0.05 level. This confirms that all variables in this study—Market Reaction, Earnings Management, Credit Risk, Cost Efficiency, and Internal Control—are cointegrated. Consequently, it proves that there is a stable, long-term equilibrium relationship among these variables, ensuring that the regression model used is valid and does not produce spurious results

Panel Data Regression Analysis and Model Selection

This study employed Moderated Regression Analysis (MRA) to test the moderation effects.

Table 4 Selection of Panel Data Linear Regression Model

Test	Statistic	Prob
Chow Test	3.987398	0.0000
Hausman Test	17.822747	0.0128

Source: Eviews (2026)

To determine the most appropriate estimation model for the panel data regression among the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM), a series of statistical tests was conducted, specifically the Chow Test and the Hausman Test.

First, the Chow Test was performed to choose between the Common Effect Model and the Fixed Effect Model. As presented in Table 4, the Chow Test yielded a statistical value of 3.987398 with a probability (Prob) of 0.0000. Because the probability value is significantly lower than the standard significance level 0.05, the null hypothesis is rejected. This result indicates that the Fixed Effect Model is more appropriate to use than the Common Effect Model.

Following the results of the Chow Test, the Hausman Test was subsequently conducted to determine whether the Fixed Effect Model or the Random Effect Model is the better fit for the data. The Hausman Test resulted in a statistical value of 17.822747 with a probability of 0.0128. Since this probability value is also less than 0.05, the null hypothesis is rejected.

Consequently, based on the outcomes of both the Chow Test and the Hausman Test, it is concluded that the Fixed Effect Model (FEM) is the most robust and suitable method for estimating the panel data regression in this study.

According to the model determination tests through the Chow Test and Hausman Test, the Fixed Effect Model (FEM) was selected as the most appropriate estimation model. To address potential violations of classical assumptions, particularly heteroscedasticity and autocorrelation in panel data, the Fixed Effect Model estimation was conducted using the Generalized Least Square (GLS) approach. Because the estimation model adopted the GLS nature, classical assumption testing was no longer required.

Hypothesis Testing Results

Hypothesis testing was performed using the Fixed Effect Model with the GLS approach. According to the statistical test results (significance level = 0.10), the following findings were obtained

Table 5 Hypothesis Testing Results

Dependent Variable: RP
Periods included: 5
Cross-sections included: 40
Total panel (balanced) observations: 200

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	297.0209	19.92843	14.90438	0.0000
DA	32.12624	57.72786	0.556512	0.5787
NPL	-19.35007	4.567160	-4.236783	0.0000
BOPO	-2.663971	0.185328	-14.37433	0.0000
KI	-2.117192	0.363835	-5.819095	0.0000
X1Z	-0.126904	1.037344	-0.122336	0.9028
X2Z	0.124126	0.074507	1.665960	0.0978
X3Z	0.016101	0.003531	4.560494	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				

Weighted Statistics			
Root MSE	43.55601	R-squared	0.961732
Mean dependent var	23.39002	Adjusted R-squared	0.950227
S.D. dependent var	222.4673	S.E. of regression	49.79862
Sum squared resid	379425.1	F-statistic	83.58952
Durbin-Watson stat	1.842299	Prob(F-statistic)	0.000000
Unweighted Statistics			
R-squared	0.937760	Mean dependent var	23.62480
Sum squared resid	510129.3	Durbin-Watson stat	1.894655

Source: Eviews (2026)

Earnings management (DA) has a probability value of 0.578 > 0.10, thus H1 is rejected. This indicates that earnings management does not have a significant effect on market reactions.

Credit risk (NPL) shows a negative relationship direction with a probability of 0.000 < 0.10, thus H2 is accepted. The higher the credit risk, the more the market reaction decreases.

Cost efficiency (BOPO) demonstrates a negative relationship direction with a probability of 0.000 < 0.10, thus H3 is accepted. Since a high BOPO reflects inefficiency, this significantly lowers the market reaction.

The interaction variable between earnings management and internal control (X1Z) has a probability of 0.902 > 0.10, thus H4 is rejected. Internal control is unable to moderate the effect of earnings management on market reactions.

The interaction variable between credit risk and internal control (X2Z) shows a positive direction with a probability of 0.097 < 0.10, thus H5 is accepted. Internal control is proven to significantly weaken the negative impact of credit risk on market reactions.

The interaction variable between cost efficiency and internal control (X3Z) shows a positive direction with a probability of 0.000 < 0.10, thus H6 is accepted. Internal control is able to significantly weaken the negative effect of cost inefficiency on market reactions.

The Effect of Earnings Management on Market Reactions

The empirical results indicate that earnings management, as measured by discretionary accruals, does not significantly affect market reactions. This finding robustly supports the Efficient Market Hypothesis (EMH), which posits that stock prices rapidly and accurately reflect all available information, meaning the market reacts rationally rather than blindly responding to manipulated accounting figures. The absence of a significant market reaction suggests that investors in the Indonesian banking sector are capable of identifying low-quality financial signals and choose not to use opportunistic earnings figures as the primary basis for their investment decisions. These results align with the perspective that investors actively discount financial information exhibiting high discretionary accruals due to its lack of credibility (Cook, Huston, Kinney, & Smith, 2022; Okur & Gurbuz, 2013). Furthermore, it demonstrates that the market does not reward manipulative reporting practices, as investors focus on fundamental economic value rather than superficial profit maximization (Jairath, 2015; Woo, Mai, McAleer, & Wong, 2020).

The Effect of Credit Risk on Market Reactions

Credit risk, proxied by the Non-Performing Loan (NPL) ratio, has a significant negative effect on market reactions. Consistent with Signaling Theory, an increase in credit risk acts as a potent negative signal regarding a bank's deteriorating asset quality and a heightened potential for debtor default. This negative signal subsequently prompts a sharp decline in investor confidence, as the market anticipates potential losses and reduced future profitability (Alsakka & ap Gwilym, 2012; Yasar, Martin, & Kiessling, 2020). Furthermore, in line with the EMH, the market quickly internalizes this adverse information, resulting in a weakened market response as investors immediately penalize the heightened financial uncertainty (Li, Chen, & Liu, 2026; Yang & Hu, 2024). The higher the credit risk a bank assumes, the more aggressively the market reacts by lowering its valuation of the company (Boccaletti, Boscia, Cotugno, & Monferrà, 2026).

The Effect of Cost Efficiency on Market Reactions

Similarly, cost efficiency, measured by the BOPO ratio (Operating Expenses to Operating Income), negatively and significantly impacts market reactions. Because a higher BOPO ratio indicates a surge in operational expenses relative to operating income, it directly reflects severe operational inefficiency. The market perceives this inefficiency as a strong negative signal regarding the bank's ability to manage its resources, generate sustainable profits, and maintain long-term competitiveness. According to both Signaling Theory and the EMH, investors are highly sensitive to indicators of operational bloat. Consequently, they swiftly adjust their valuations downward to reflect the reduced future earnings potential, proving that the market penalizes banks that fail to control their internal costs effectively (Cheng & Tung, 2025; Schraeder, 2024).

The Moderating Role of Internal Control on Earnings Management

Regarding the moderating effects, internal control—measured by the proportion of independent commissioners—failed to moderate the relationship between earnings management and market reactions. While Agency Theory suggests that independent commissioners should reduce agency conflicts and enhance earnings quality by providing strict oversight, these findings imply a disconnect between theory and practice. In the sampled banks, the presence of independent commissioners might largely function as an administrative formality to comply with governance regulations rather than serving as an effective, substantive monitoring mechanism. If independent commissioners lack true independence, competence, or active engagement, they cannot effectively curb managerial opportunism or prevent earnings manipulation (Agustin, Yusrawati, Sundari, Hidayah, & Arizza, 2024; Asad, Akbar, & Mollah, 2024). Consequently, investors do not view their mere presence on the board as a strong enough guarantee of reporting credibility, leading the market to disregard the internal control structure when evaluating manipulated earnings (Boubakri, 2025).

The Moderating Role of Internal Control on Credit Risk

Conversely, internal control successfully moderates—specifically, it significantly weakens the negative impact of—credit risk on market reactions. Supported by Agency Theory, effective internal oversight ensures that risk management policies are transparent, credible, and actively monitored by the board. The presence of independent directors helps limit excessive managerial risk-taking, particularly in aggressive lending practices, which in turn restores and maintains investor confidence even when NPLs fluctuate (Jiraporn & Lee, 2018; Qin, Tan, & Kong, 2023). Consequently, the market responds less negatively to elevated credit risks when investors trust that a robust internal control mechanism is actively mitigating these financial vulnerabilities and preventing further asset quality deterioration (Lee, Jiraporn, Kim, & Park, 2021).

The Moderating Role of Internal Control on Cost Efficiency

Internal control also significantly moderates and weakens the negative effect of cost inefficiency on market reactions. Active oversight by independent commissioners helps prevent managerial overconfidence and ensures that operational expenditures are scrutinized. When a bank possesses a strong proportion of independent commissioners, investors believe that the reported operational costs—even if temporarily high—are justified, transparent, and aligned with sustainable business strategies rather than managerial waste (Cherkaoui & Oudrhough, 2024; Quoc Trung Tran, 2019). Therefore, effective internal control acts as a buffer, reassuring the market that cost-management practices are being properly supervised, which ultimately softens the negative market reaction typically associated with high BOPO ratios (Alipour, Ghanbari, Jamshidinavid, & Taherabadi, 2019; Ong, Day, & Hsu, 2009).

CONCLUSION

This study examines the impact of earnings management, credit risk, and cost efficiency on market reactions, along with the moderating role of internal control in banking companies listed on the Indonesia Stock Exchange. The empirical results reveal that earnings management does not have a significant effect on market reactions, indicating that investors do not rely on manipulated earnings information as a primary basis for their investment decisions. Conversely, both credit risk (NPL) and cost efficiency (BOPO) significantly and negatively influence market reactions. This demonstrates that investors are highly sensitive to deteriorating asset quality and operational inefficiencies. Furthermore, while internal control—proxied by the proportion of independent commissioners—fails to moderate the relationship between earnings management and market reactions, it successfully moderates and weakens the negative impacts of both credit risk and cost inefficiency. This highlights that effective internal oversight

enhances investor confidence regarding risk and cost management, even though its role in curbing earnings manipulation remains limited.

Implications

The findings offer significant theoretical, practical, and policy implications. Theoretically, this study supports Agency Theory by demonstrating that internal control mechanisms can mitigate conflicts of interest and strengthen the credibility of financial signals, particularly concerning credit risk and cost efficiency. Practically, bank management must prioritize authentic earnings quality, rigorous credit risk mitigation, and operational cost optimization rather than relying on opportunistic reporting, as the market rationally discounts manipulated information. For policymakers and regulators, these results underscore the necessity of enforcing stringent corporate governance standards. Regulators should ensure that board independence is not merely a structural formality but a substantive oversight mechanism that promotes transparency, accountability, and banking stability.

Limitations and Future Research

This research has several limitations that provide avenues for future studies. First, the observation period is limited to five years (2020–2024), which may not fully capture the dynamics of various business cycles. Future research should utilize an extended longitudinal window to validate the consistency of these findings. Second, the sample is restricted exclusively to the banking sector, limiting the generalizability of the results. Subsequent studies are encouraged to include non-bank financial institutions, such as insurance or financing companies, to provide a broader comparative analysis across the financial services sector. Finally, the study is confined to specific independent variables; future research should expand the model by incorporating other theoretically relevant factors, such as dividend policy, capital structure, or macroeconomic indicators, to achieve a more comprehensive understanding of market reaction determinants

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