Journal of Economics, Finance and Management Studies

ISSN (print): 2644-0490, ISSN (online): 2644-0504

Volume 09 Issue 05 May 2026

Article DOI: 10.47191/jefms/v9-i5-48, Impact Factor: 8.735

Page No: 2675-2684

Capital Structure, Dividend Policy, and Firm Value in ASEAN Mining Firms

Yuliana[1], Shelfi Malinda[2], Muizzuddin [3], Sulastri [4], Muhammad Kemas Husni Thamrin [5]

[1,2,3,4,5] University of Sriwijaya Palembang, Indonesia

ABSTRACT: This study examines the effects of capital structure and dividend policy on firm value, in ASEAN mining companies. Firm value is measured by Tobin's Q, capital structure by debt-to-equity ratio, and dividend policy by dividend payout ratio. The analysis uses balanced panel data consisting of 29 firms observed from 2020 to 2024, yielding 145 firm-year observations. Firm value data and financial variables were obtained from Refinitiv Data Laboratory. Analysis data use Stata. The estimation procedure compares pooled ordinary least squares, fixed effects, and random effects models. The F-test indicates the presence of firm-specific effects, while the Hausman test supports the random effects model. The model applies a random-effects panel regression with firm-level clustered robust standard errors to address heteroskedasticity and serial correlation.

The results show that dividend policy has a negative and significant effect on firm value, while capital structure has no significant effect. Interest rate positively moderates the relationship between dividend policy and firm value. These findings suggest that excessive dividend payout may reduce market valuation in capital-intensive mining firms.

KEYWORDS: Tobin's Q; Capital Structure; Dividend Policy; Interest Rate; Mining; ASEAN

I. INTRODUCTION

Firm value is one of the central indicators in corporate finance because it reflects how the capital market evaluates a firm's financial policy, growth opportunity, risk exposure, and managerial credibility. In empirical finance studies, Tobin's Q is frequently used as a market-based measure of firm value because it compares market valuation with the value of firm assets (Njoku & Lee, 2025). Chung and Pruitt developed a simplified approximation of Tobin's Q and showed that it can be calculated using available financial and accounting information, making it suitable for empirical firm-level research (Chung & Pruitt, 1994).

The mining sector provides a relevant setting for examining firm value because it is capital intensive, cyclical, and highly exposed to commodity-price volatility, exchange-rate movement, and financing-cost changes (Arteta, 2022). During the 2020–2024 observation period, the global market was marked by major disruptions, including the post-pandemic recovery, energy price fluctuations, inflationary pressure, rising interest rates, and uncertainty in international trade. These conditions created a dynamic environment in which mining companies faced both opportunities and risks.

The stock price movements of mining companies in Southeast Asia during the period show that the sector did not move in one uniform direction. Some companies, such as LANNA in Thailand and ADRO in Indonesia, experienced a strong upward trend in the early period and continued to strengthen afterward, although at a more moderate pace. In contrast, THT in Vietnam showed a different pattern, rising first and then falling sharply in the following period. Similar fluctuations were also seen in PX in the Philippines and MSC in Malaysia, where stock prices improved for a time but later moved downward.

These different movements suggest that stock prices in the mining sector are influenced by more than just changes in global commodity markets. They also reflect how investors respond to each company's managerial decisions, financial strategy, and ability to manage its resources effectively. In this sense, stock price fluctuations can be seen as a market signal of how strongly investors believe in a company's future prospects and its capacity to create value over time (Njoku & Lee, 2025).

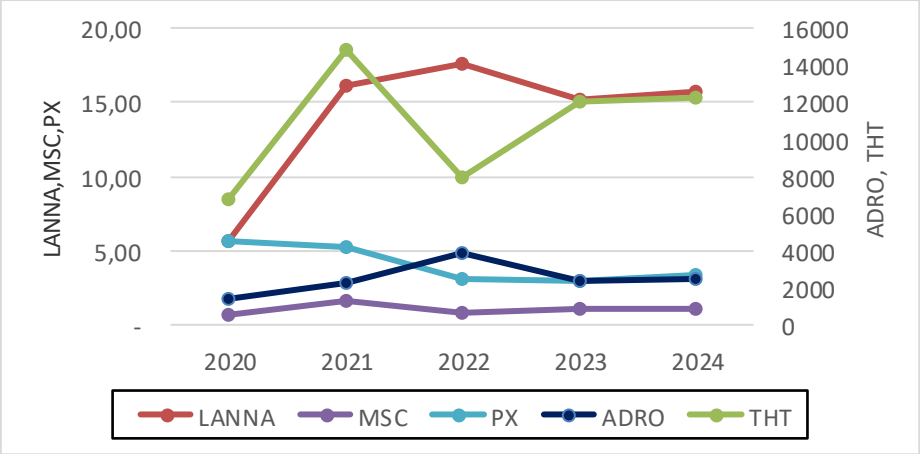


Figure 1. Stock Price of ASEAN Mining Firms

The formation of firm value in the mining sector is influenced by both external factors and internal financial decisions that remain under managerial control (Surwanti & Pamungkas, 2021), External factors include ASEAN exchange rate volatility (Umoru, David; Igbinovia, 2024), economic policy uncertainty (Zhao & Su, 2022) and global investor sentiment and attention (Zhang et al., 2026). In this context, the value of mining firms is not determined solely by the volume of gold or coal extracted as an internal operational factor, but also by how global investors respond to environmental issues and commodity price fluctuations as external market signals (Zhang et al., 2026). Internal financial decisions can therefore be viewed as a defensive managerial response to operational risks triggered by external conditions, including government and political factors (Zhao & Su, 2022). To maximize firm value, managers are confronted with two interrelated fundamental financial decisions: financing decisions, reflected in capital structure or how firms optimally combine debt and equity (Cardao-Pito, 2025), and payout decisions, reflected in dividend policy or the proportion of earnings distributed to shareholders (Jonah et al., 2024).

These decisions are particularly crucial in the mining industry due to its capital-intensive nature, which requires substantial investment in exploration, extraction, and infrastructure, as well as its profitability, which is highly sensitive to commodity price fluctuations, regulatory changes, and government policies (Zhang et al., 2026). The highly cyclical nature of this sector increases the risk of financial distress when leverage is not managed optimally. Therefore, investors may evaluate capital structure and dividend policy differently in mining firms compared with firms in less capital-intensive sectors. Accordingly, capital structure and dividend policy become important determinants in shaping firm value in mining companies (Passla et al., 2025).

Capital structure remains an important issue because debt can create value through tax shields but can also reduce value through financial distress risk (Colline, 2022). Trade-off theory explains that firms determine capital structure by balancing the benefits of debt against expected bankruptcy and financial distress costs (Cordiaz et al., 2021). Myers argues that, under the static trade-off framework, optimal capital structure is achieved when the marginal benefit of debt equals its marginal cost (Myers, 1984). However, this mechanism may become more complex in mining firms because debt can support expansion but may also increase vulnerability when commodity prices decline (Hendiarto & Annisa, 2021).

Dividend policy is also closely related to firm value because it reflects how firms allocate earnings between shareholder distribution and retained earnings (Cordiaz et al., 2021; Dang et al., 2021; de Souza Junior et al., 2025). Signaling theory argues that dividend decisions may convey private information from managers to investors. Miller and Rock explain that dividend policy can serve as a signal under asymmetric information, while Myers and Majluf show that information asymmetry affects corporate financing and investment decisions (Cardao-Pito, 2025). Nevertheless, the effect of dividend policy on firm value may not always be positive, especially in firms that need large retained earnings for reinvestment.

This study addresses at least three research gaps. First, many previous studies examine capital structure and dividend policy separately, whereas firms usually determine financing and payout policies simultaneously. Second, many studies focus on single-country settings or broad non-financial sectors, while ASEAN mining firms face specific risks related to commodity cycles, exchange rates, and macroeconomic conditions. Third, the moderating role of interest rate remains underexplored, even though interest rate can influence borrowing costs, investor required returns, and the market interpretation of dividends and debt.

This study contributes three novelties. First, it focuses on ASEAN mining firms during 2020–2024, a period characterized by post-pandemic recovery, commodity-market adjustment, and changing macro-financial conditions. Second, it incorporates interest rate as a moderating variable in the relationship between capital structure, dividend policy, and firm value. Third, it applies a

panel-data model selection procedure and uses a random effects model with firm-level clustered robust standard errors to address heteroskedasticity and autocorrelation.

The research problems are formulated as follows: Does capital structure affect firm value in ASEAN mining firms? Does dividend policy affect firm value? Does interest rate moderate the relationship between capital structure and firm value? Does interest rate moderate the relationship between dividend policy and firm value? This study contributes theoretically by extending trade-off theory and signaling theory in a regional mining-sector context, and practically by providing evidence for directors, investors, regulators, and policymakers in evaluating corporate financial policy.

II. LITERATURE REVIEW

A. Trade-off Theory and Capital Structure

Trade-off theory explains that firms determine their capital structure by balancing the tax advantage of debt and the expected cost of financial distress. Debt may increase firm value when tax-shield benefits and managerial discipline exceed the cost of bankruptcy risk. However, excessive debt may reduce firm value because it increases default risk, reduces financial flexibility, and increases the cost of capital (Ari Saputra & Sri Arta Jaya Kusuma, 2025; Colline, 2022; Hendiarto & Annisa, 2021; Passla et al., 2025). Myers explains that the static trade-off theory views optimal capital structure as a balance between the tax advantage of borrowing and the expected cost of financial distress (Myers, 1984).

In capital-intensive industries such as mining, the trade-off mechanism is especially important. Debt can support exploration, production expansion, and capital investment, but high leverage may become risky when commodity prices decline or when operating cash flows become unstable (Cordiaz et al., 2021; Lanjas, 2021). Therefore, the relationship between debt and firm value may be positive, negative, or insignificant depending on whether the market interprets debt as productive financing or financial burden.

Empirical studies also show mixed evidence regarding the relationship between capital structure and firm value. Akpor et al. (2024); Erlangga (2025); Ghifari (2025); Hágen & Ahmed (2024); Ishanda (2025) finds that capital structure can affect firm value positively and significantly. Research results from Njoku & Lee (2025); Utari (2024); Nguyen & Nguyen (2020) show that capital structure has a negative and significant effect on firm value. Research results from Efrianti (2023); Jonah et al. (2024); Sari & Trisnawati (2024) show that capital structure has a positive and insignificant effect on firm value.

B. Signaling Theory and Dividend Policy

Signaling theory explains that corporate financial decisions may transmit information from managers to external investors. Since managers usually have better information about future earnings and cash-flow prospects, dividend policy can become a signal of firm quality. Miller and Rock argue that dividend policy under asymmetric information can act as a signaling mechanism, while Myers and Majluf emphasize that information asymmetry affects corporate financing and investment choices (Miller & Rock, 1985).

However, dividend policy does not always increase firm value. In firms with high investment needs, excessive dividend payout may reduce retained earnings and weaken internal financing capacity (Njoku & Lee, 2025). This is particularly relevant for mining firms because they require large funds for exploration, maintenance, environmental obligations, and long-term asset renewal (Maquieira & Pastén-Henríquez, 2026). Therefore, high dividend payout may be interpreted positively as a signal of stable cash flows or negatively as a signal of reduced reinvestment capacity.

Recent empirical studies continue to show inconsistent findings. Some evidence indicates that dividend policy has a positive relationship with firm value in emerging markets, while other studies show that the relationship can vary depending on firm characteristics, investment opportunities, and market expectations. Jonah et al. (2024) and Njoku & Lee (2025) for example, finds a positive relationship between dividends and firm value in Nigerian firms, while other studies emphasize that dividend relevance may differ across sectors and market conditions.

C. Interest Rate as Moderating Variable

Interest rate is an important macroeconomic variable because it affects the cost of borrowing, discount rates, investor expectations, and capital allocation decisions. When interest rates increase, debt financing becomes more expensive and investors may evaluate leveraged firms more cautiously (Siregar & Sasongko, 2023). At the same time, dividend-paying firms may become more attractive to investors seeking cash returns during periods of higher financial uncertainty (Tarkom & Ujah, 2023).

The moderating role of interest rate is theoretically relevant because it may change the effect of capital structure and dividend policy on firm value. Higher interest rates may weaken the value effect of leverage because borrowing costs increase. On the other hand, higher interest rates may strengthen the value relevance of dividends because investors compare dividend income

with alternative returns in financial markets (Arteta, 2022). Thus, interaction variables between interest rate and DER, as well as between interest rate and DPR, are included to test whether macro-financial conditions alter the relationship between corporate financial policy and firm value.

D. Firm Value

Firm value represents the primary objective of managerial decision-making. It is an important measure for assessing a firm's competitiveness in the capital market and the extent to which the firm is able to generate favorable investment returns for its shareholders (Lanjas, 2021). A high stock price reflects investors' positive assessment of the company, as it indicates that the firm is perceived to be capable of maximizing shareholders' wealth (Brigham & Houston, 2020).

Tobin's Q was selected as a proxy for firm value because it reflects the market's assessment of a company's total assets as well as expectations regarding its future investment prospects (Passla et al., 2025). The use of Tobin's Q is particularly relevant for the mining industry, which is asset-intensive and characterized by long-term investment horizons. In this sector, firm value is determined not only by historical performance, but also by reserve potential and future mine development opportunities. Moreover, as a market-based measure, Tobin's Q is able to capture investors' responses to capital structure and dividend policy decisions (Jonah et al., 2024).

III. RESEARCH CONCEPTUAL FRAMEWORK

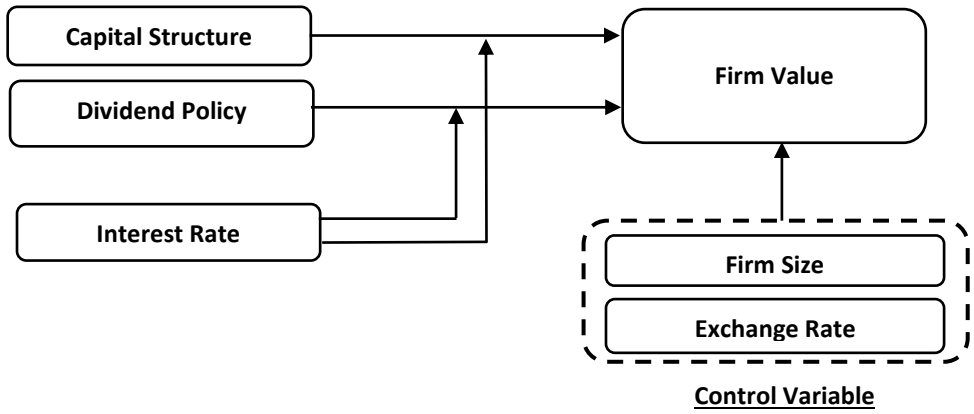


Figure 2. Research Conceptual Framework

Through this research conceptual framework, the study aims to examine the relationship between capital structure and dividend policy, and firm value, with interest rates serving as a moderating variable in the mining sector across Southeast Asia.

IV. HYPOTESIS

Capital structure is a fundamental aspect for every company because it has a direct effect on the firm's financial position. It serves two contrasting functions: on the one hand, it can act as a disciplinary mechanism that improves managerial efficiency; on the other hand, excessive debt may increase the possibility of financial distress, where a higher level of leverage raises the likelihood of a firm experiencing financial difficulties or even bankruptcy (Njoku & Lee, 2025).

From the investor's perspective, the amount of debt held by a company is not always the main concern, as they may also view debt as a productive financing instrument when it is used efficiently and effectively to generate higher returns, thereby maximizing firm value (G. Ramadhan, 2022). However, investors generally tend to avoid firms with high levels of risk. A high-risk perception may lead to negative investor sentiment toward the company, which can reduce stock prices and, ultimately, lower firm value (Gz & Lisiantara, 2022).

In mining sector, companies with a high debt-to-equity ratio may also experience a decline in investor confidence, as investors may become concerned that the firm's debt obligations cannot be adequately covered by its available assets or equity (Permata et al., 2025). Therefore, financing decisions are highly sensitive to changes in firm value because a higher proportion of debt increases the risk of financial distress, which may eventually have a negative impact on firm value (Njoku & Lee, 2025).

H1: Capital Structure has negative effect on firm value

Dividend policy refers to a company's decision regarding whether the earnings generated will be distributed to investors as dividends or retained within the company as retained earnings (Ramadhan, 2023). In general, investors tend to be more attracted to firms that consistently distribute dividends, as regular dividend payments may be perceived as a positive signal of

financial stability and management's confidence in the company's future performance (Njoku & Lee, 2025; Seth & Mahenthiran, 2022). The higher the dividends distributed to shareholders, the more positively the company's managerial performance is perceived. This positive perception may ultimately enhance investor confidence and increase firm value (Bui et al., 2023).

H2: Dividend Policy has positive effect n firm value

Interest rate stability is a fundamental prerequisite for reducing economic uncertainty and minimizing the risk of investment planning failure (Mishkin, 2007). Interest rates function as an external variable that influences the efficiency of corporate resource allocation. When interest rates increase, the real cost of capital also rises, which directly suppresses private investment value and may trigger potential capital losses in corporate portfolios (Mishkin, 2007; Saunders & Cornett, 2012).

In a high-interest-rate environment, interest expenses reduce net income, thereby weakening the positive effect of debt on firm value through the tax shield mechanism. Under the perspective of trade-off theory, this condition may even reverse the effect of leverage from positive to negative, as higher borrowing costs increase the probability of financial distress and bankruptcy risk (Maquieira & Pastén-Henríquez, 2026).

H3: Interest rates moderate the relationship between capital structure and firm value

When interest rates rise, the attractiveness of dividends as a source of investment return may be substituted by safer money market instruments or bonds with lower risk, reflecting a substitution effect. Higher interest rates reduce the money supply and increase the cost of capital, which psychologically encourages investors to demand a higher required rate of return from dividends. If firms are unable to meet these expectations, the market's appreciation of dividend policy may decline (Saunders & Cornett, 2017). During the 2022–2024 period, rising interest rates encouraged investors to demand higher dividend yields to compensate for increased market risk. If mining companies distribute relatively low dividends in a high-interest-rate environment, investors may shift their capital to alternative investment instruments, thereby weakening the effect of dividend policy on firm value through the substitution effect (Li et al., 2025).

H4: Interest rates moderate the relationship between dividend policy and firm value.

V. RESEARCH METHODOLOGY

This study uses balanced panel data from ASEAN mining companies during 2020–2024. The sample used in this study consists of companies classified within the mining sector based on the following criteria: Mining companies with upstream characteristics, specifically pure-play miners engaged in the exploration and extraction of natural resources, listed on the stock exchange and not delisted during the 2020–2024 period, published audited financial statements for the 2020–2024 period, and distributed dividends at least once during the 2020–2024 fiscal years.

The dependent variable is firm value, measured by Tobin's Q. The main independent variables are capital structure and dividend policy. Capital structure is measured by debt-to-equity ratio (DER), while dividend policy is measured by dividend payout ratio (DPR). Firm size is measured by the natural logarithm of total assets (Ln Total Asset). Exchange rate (ER) is measured in logarithmic form. Interest rate (IR) is used as both an control variable and a moderating variable.

The sample consists of 29 firms observed for five years, producing 145 firm-year observations. Firm-level financial data, including the components used to calculate Tobin's Q, capital structure, dividend policy, and firm size, were obtained from Refinitiv Data Laboratory.

Panel-data analysis is used because it combines cross-sectional and time-series information and allows researchers to control for unobserved heterogeneity across firms (Wooldridge, 2010). Baltagi (2021) also explains that fixed effects and random effects are standard approaches in panel-data econometrics when unobserved individual heterogeneity exists.

VI. RESULTS AND DISCUSSION

A. Descriptive Statistics

Table 1. Descriptive Statistics

Variable	Observ.	Mean	Std. Dev.	Min	Max
Tobin's Q	145	1.371618	0.6124313	0.7530717	2.829667
DER	145	0.9438063	0.9039759	0.096539	4.177239
DPR	145	0.4244819	0.3787153	0	1.616555
Ln Total Asset	145	20.32785	1.448374	17.64355	23.28824
Ln ER	145	7.71015	3.0169	1.391282	10.12663
IR	145	0.043319	0.014597	0.005	0.0625

The mean value of Tobin's Q is 1.371618, indicating that the average market valuation of the firms is above their asset value. The minimum value is 0.7530717 and the maximum value is 2.829667, showing variation in firm value across ASEAN mining firms.

The mean DER is 0.9438063, meaning that average debt is slightly below equity. However, the maximum DER of 4.177239 indicates that some firms rely heavily on debt financing. The mean DPR is 0.4244819, indicating that the average firm distributes approximately 42.45% of its earnings as dividends. The maximum DPR of 1.616555 indicates that some firms distribute dividends above current earnings.

Ln Total Asset has a mean of 20.32785, showing variation in firm size. Ln ER has a mean of 7.71015 with a standard deviation of 3.0169, reflecting cross-country exchange-rate differences. Interest rate has a mean of 0.043319, with a minimum of 0.005 and a maximum of 0.0625.

B. Model Selection Results

Table 2. Model Selection Summary

Model Selection Stage	Test	Statistic	Probability	Decision
Pooled OLS vs Fixed Effects	F-test	F(28,109) = 9.67	0.0000	Fixed effects preferred over pooled OLS
Fixed Effects vs Random Effects	Hausman test	chi2(7) = 6.67	0.4646	Random effects preferred
Heteroskedasticity	Breusch-Pagan/Cook-Weisberg	chi2(1) = 14.22	0.0002	Heteroskedasticity detected
Autocorrelation	Wooldridge test	F(1,28) = 16.956	0.0003	First-order autocorrelation detected
Final Model	REM robust cluster	—	—	REM with firm-level clustered robust SE

The F-test shows a probability value of 0.0000, indicating that pooled OLS is not appropriate because firm-specific effects exist. The Hausman test shows a probability value of 0.4646, which is greater than 0.05. Therefore, the random effects model is preferred over the fixed effects model.

The heteroskedasticity test shows a probability value of 0.0002, indicating that the constant variance assumption is violated. The Wooldridge test shows a probability value of 0.0003, indicating first-order autocorrelation. Therefore, the final model uses random effects estimation with firm-level clustered robust standard errors.

C. Final Random Effects Model with Firm-Level Clustered Robust Standard Errors

Table 3. Final Estimation Result: REM Robust Cluster

Variable	Coefficient	Robust std. error	z	P>|z|	[95% Conf. Interval]	
C	2.487	1.244	2.00	0.046	0.052	4.757
DER	-0.239	0.222	-1.08	0.281	-0.619	0.165
DPR	-0.584	0.212	-2.76	0.006	-1.055	-0.203
Ln Total Asset	-0.047	0.059	-0.80	0.425	-0.140	0.079
Ln ER	-8.065	4.901	0.85	0.395	-0.011	0.116
Interest Rate	0.026	4.212	-1.65	0.100	-29.706	-4.873
Mod. DER	2.328	0.030	0.55	0.580	-5.721	9.275
Mod. DPR	17.535	5.128	3.42	0.001	7.508	29.062

Table 4. Model Statistics

Indicator	Result
Number of observations	145
Number of groups	29
Observations per group	5
R-squared within	0.1843
R-squared between	0.1950
R-squared overall	0.1827
Wald chi2(11)	53.58
Prob > chi2	0.0000

Standard error adjustment	29 clusters in id_firmid

The final model is statistically significant, as shown by Prob > chi2 of 0.0000. The overall R-squared is 0.1827, meaning that 18.27% of the variation in Tobin's Q is explained by DER, DPR, firm size, exchange rate, interest rate, moderating variables, and year effects.

DER has a negative coefficient of -0.2393014 but is statistically insignificant with a probability value of 0.281. This indicates that capital structure has no significant direct effect on Tobin's Q.

DPR has a negative coefficient of -0.5839357 and is statistically significant at the 1% level with a probability value of 0.006. This indicates that higher dividend payout is associated with lower firm value.

Ln Total Asset has a negative but insignificant coefficient. Ln Exchange Rate has a positive but insignificant coefficient. Interest rate has a negative but insignificant coefficient at the 5% level, although it is close to significance at the 10% level.

The interaction variable mod_DER has a positive but insignificant coefficient. This means that interest rate does not significantly moderate the relationship between capital structure and firm value.

The interaction variable mod_DPR has a positive coefficient of 17.53494 and is statistically significant at the 1% level with a probability value of 0.001. This indicates that interest rate positively moderates the relationship between dividend policy and firm value.

D. Discussions

The insignificant effect of DER on Tobin's Q indicates that capital structure does not directly determine firm value in ASEAN mining firms. From the *trade-off theory* perspective, debt can increase firm value through tax benefits, but it can also reduce firm value when financial distress risk increases. Myers explains that the value effect of debt depends on the balance between tax-shield benefits and expected financial distress costs (Myers, 1984). In this study, the insignificant DER coefficient suggests that investors may not automatically interpret leverage as either value-enhancing or value-destroying in mining firms.

This result may be explained by the specific characteristics of mining companies. Debt may be productive when it is used for exploration, production expansion, and asset development. However, debt may also become risky when commodity prices decline, exchange rates fluctuate, or operational cash flows weaken. Therefore, the market may evaluate leverage based not only on the debt ratio itself, but also on the purpose of debt, repayment capacity, project quality, and future commodity outlook. This is consistent with empirical evidence showing that the relationship between capital structure and firm value is context-dependent and may vary across firms and markets (Bui et al., 2023; Dang et al., 2019).

The negative and significant effect of DPR on Tobin's Q is the most important direct finding of this study. Although signaling theory suggests that dividends may convey positive information about future earnings, the result indicates that higher dividend payout is associated with lower firm value in ASEAN mining firms. Miller and Rock argue that dividend policy can signal information under asymmetric information, but the interpretation of the signal depends on market expectations and firm conditions (Miller & Rock, 1985).

In the mining sector, high dividend payout may be interpreted as reducing retained earnings needed for reinvestment. The negative DPR effect suggests that investors may prefer mining firms to retain earnings for long-term investment rather than distribute excessive dividends (Al-Najjar & Kilincarslan, 2019). Mining companies require substantial internal funds for exploration, reserve replacement, heavy equipment renewal, environmental compliance, and production sustainability. Therefore, high dividend payout may reduce financial flexibility and weaken perceived long-term growth capacity (Surwanti & Pamungkas, 2021). This result differs from studies that find a positive relationship between dividends and firm value, such as evidence from Malaysian firms (Bakri, 2021), but it is reasonable because sectoral characteristics and investment intensity can change how investors interpret dividend policy.

The insignificant effect of firm size indicates that larger assets do not automatically create higher market valuation. In mining firms, large assets may reflect production capacity and reserve ownership, but they may also indicate heavy fixed assets, high depreciation, environmental liabilities, and operational rigidity. Therefore, investors may pay more attention to profitability, reserve quality, cash-flow sustainability, commodity price expectations, and capital allocation discipline than to asset size alone.

The insignificant effect of exchange rate suggests that currency movement does not directly explain Tobin's Q after controlling for firm-level variables, interest rate, interaction terms, and year effects. This may occur because mining firms have different revenue currencies, cost structures, debt denominations, and hedging policies. Export-oriented firms may benefit from local currency depreciation, while firms with foreign-currency debt or imported equipment may experience cost pressure. These opposing effects may weaken the aggregate relationship between exchange rate and firm value.

The direct effect of interest rate is negative but not significant at the 5% level in the final robust model. However, the significant positive interaction between DPR and interest rate indicates that interest rate changes the relationship between dividend policy and firm value. This means that although dividend payout has a negative direct effect, its effect becomes less negative or more favorable under higher interest-rate conditions. Investors may value dividend income more when macro-financial uncertainty increases or when interest rates make cash returns more relevant.

The insignificant interaction between DER and interest rate indicates that interest rate does not significantly moderate the relationship between leverage and firm value. This may occur because mining firms have different debt maturities, fixed-rate debt contracts, refinancing schedules, or currency structures. Therefore, the sensitivity of leverage to interest rate may not be homogeneous across firms. In addition, investors may evaluate debt in mining firms more strongly through commodity-cycle expectations and cash-flow stability than through interest rate alone (Arteta, 2022).

Overall, the findings show that *trade-off theory* is not strongly supported in the direct leverage–firm value relationship because DER is statistically insignificant. *Signaling theory* is partially supported because dividend policy is value-relevant, but the direction of the effect is negative. This means that the market responds to dividend policy, but in ASEAN mining firms, high dividend payout may be interpreted as a constraint on reinvestment rather than as a purely positive signal. The significant moderating effect of interest rate further indicates that macro-financial conditions shape how investors interpret dividend decisions (Bella et al., 2024; Puspitaningtyas, 2019).

VII. CONCLUSIONS

This study examines the effect of capital structure and dividend policy on firm value in ASEAN mining companies during 2020–2024, with interest rate as a moderating variable. The sample consists of 29 firms and 145 firm-year observations. The model selection procedure shows that pooled OLS is not appropriate because firm-specific effects exist, while the Hausman test supports the random effects model. Since heteroskedasticity and autocorrelation are detected, the final estimation uses a random effects model with firm-level clustered robust standard errors and year effects.

The results show that capital structure, measured by DER, has no significant direct effect on Tobin's Q. Dividend policy, measured by DPR, has a negative and significant effect on Tobin's Q. Firm size, exchange rate, and interest rate do not have significant direct effects on firm value in the final robust model. Interest rate does not moderate the relationship between DER and firm value, but it positively and significantly moderates the relationship between DPR and firm value.

The theoretical implication is that trade-off theory is not strongly supported in the ASEAN mining sector because leverage does not significantly affect firm value. Signaling theory is partially supported because dividend policy is statistically significant, but the negative direction indicates that high dividend payout may be interpreted as reducing reinvestment capacity. Therefore, dividend policy in mining firms should not be understood only as a positive signal of financial strength, but also as a signal of possible limitations in long-term internal financing.

For corporate directors, the findings suggest that dividend policy should be designed carefully by considering investment needs, reserve replacement, asset renewal, environmental obligations, and long-term value creation. Mining firms should avoid excessive dividend payout when internal funds are needed for productive investment. Directors should also communicate clearly to investors whether retained earnings are being used for value-enhancing projects.

For government and capital-market regulators, the findings imply the need to strengthen disclosure requirements related to debt structure, dividend policy, capital expenditure plans, project risks, and environmental liabilities. Transparent disclosure can help investors distinguish between productive leverage and risky leverage. Effective enforcement of competition law and anti-monopoly regulation can improve market efficiency, protect minority investors, and support healthier capital-market development.

Future research may include profitability, commodity price index, ESG performance, ownership structure, cash-flow volatility, and country-level institutional quality. Further studies may also compare ASEAN countries separately to identify whether institutional differences affect the relationship between capital structure, dividend policy, interest rate, and firm value.

REFERENCES

1) Akpor, A. A., Ogbaini, C. A., Oboh, R., Oputa, J. E., Bello-Marvis, V., & Okafor, N. (2024). Unveiling Firm Value: Exploring Price to Book Value Method in Nigerian Food and Beverage Companies. *Neraca: Jurnal Pendidikan Ekonomi*, *9*(2), 128–135. https://doi.org/10.33084/neraca.v9i2.7178
2) Al-Najjar, B., & Kilincarslan, E. (2019). What do we know about the dividend puzzle? – A literature survey. In *International Journal of Managerial Finance* (Vol. 15, Issue 2). https://doi.org/10.1108/IJMF-03-2018-0090
3) Ari Saputra, I. G. A., & Sri Arta Jaya Kusuma, P. (2025). The Effect of Liquidity, Profitability, and Capital Structure on Firm

Value with Firm Size as a Variable. In *American Journal of Economic and Management Business (AJEMB)* (Vol. 4, Issue 1, pp. 24–41). https://doi.org/10.58631/ajemb.v4i1.158

4) Arteta, C. (2022). *How Do Rising U.S. Interest Rates Affect Emerging and Developing Economies?*
5) Bakri, M. A. (2021). Does Dividend Policy Affect Firm Value in An Emerging Market?: Evidence From Malaysian Firms. *Labuan Bulletin of International Business and Finance (LBIBF)*, *19*(1), 49–58. https://doi.org/10.51200/lbibf.v19i1.3383
6) Bella, C., Haryono, C., Worokinasih, S., & Darmawan, A. (2024). The Mediating Role of Dividend Policy on Financial Performance and Firm Value : A Literature Review. *KnE Social Sciences*, *2024*, 247–257. https://doi.org/10.18502/kss.v9i11.15780
7) Bui, T. N., Nguyen, X. H., & Pham, K. T. (2023). The Effect of Capital Structure on Firm Value: A Study of Companies Listed on the Vietnamese Stock Market. *International Journal of Financial Studies*, *11*(3), 100. https://doi.org/10.3390/ijfs11030100
8) Cardao-Pito, T. (2025). Why financial economics cannot explain financial management. *International Review of Financial Analysis*, *106*(August), 104558. https://doi.org/10.1016/j.irfa.2025.104558
9) Chung, K. H., & Pruitt, S. W. (1994). A Simple Approximation of Tobin's q. *Financial Management*, *23*(3), 70. https://doi.org/10.2307/3665623
10) Colline, F. (2022). The Mediating Effect of Debt Equity Ratio on The Effect of Current Ratio, Return on Equity and Total Asset Turnover on Price to Book Value. In *Jurnal Keuangan dan Perbankan* (Vol. 26, Issue 1, pp. 75–90). https://doi.org/10.26905/jkdp.v26i1.6882
11) Cordiaz, E. F., . E., & Situmeang, C. (2021). The Effect of Profitability, Liquidity, and Capital Structure on Firm Value with Dividend Policy as a Moderating Variable in the Company Mining Listed on the Indonesia Stock Exchange. *International Journal of Research and Review*, *8*(12). https://doi.org/10.52403/ijrr.20211241
12) Dang, H. N., Vu, V. T. T., Ngo, X. T., & Hoang, H. T. V. (2019). Study the Impact of Growth, Firm Size, Capital Structure, and Profitability on Enterprise Value: Evidence of Enterprises in Vietnam. *Journal of Corporate Accounting and Finance*, *30*(1), 144–160. https://doi.org/10.1002/jcaf.22371
13) Dang, H. N., Vu, V. T. T., Ngo, X. T., & Hoang, H. T. V. (2021). Impact of dividend policy on corporate value: Experiment in Vietnam. *International Journal of Finance & Economics*, *26*(4), 5815–5825. https://doi.org/10.1002/ijfe.2095
14) de Souza Junior, W. D., Hijazi, M. M., & da Silva, T. P. (2025). Determinants of Dividend Payout Policy: More Evidence From Emerging Markets of <scp>G20</scp> Bloc. *International Journal of Finance & Economics*, *30*(4), 4113–4124. https://doi.org/10.1002/ijfe.3111
15) Efrianti, N. (2023). Pengaruh Profitabilitas, Growth Opportunity, Struktur Modal dan Likuiditas Terhadap Nilai Perusahaan (Studi Empiris Pada Sektor Telekomunikasi dan Transportasi yang Terdaftar di Bursa Efek Indonesia 2017-2022). *Jurnal Ekonomi Dan Bisnis*.
16) Erlangga, Y. H. (2025). Pengaruh Struktur Modal, Kebijakan Dividen dan Ukuran Perusahaan Terhadap Nilai Perusahaan Pada Perusahaan. *Jurnal Pendidikan Dan Kebudayaan Nusantara*, *Vol. 3 (1)*.
17) Ghifari, M. S. El. (2025). Pengaruh Struktur Modal, Intellectual Capital, Growth Opportunity, Inflasi dan Nilai Tukar Terhadap Nilai Perusahaan (Studi Kasus Pada Perusahaan Sektor Energi Sub Sektor Minyak, Gas, Dan Batubara Yang Terdaftar Di Bursa Efek Indonesia Periode 2018-2023). *Jurnal Ekonomi & Bisnis*.
18) Hágen, I., & Ahmed, A. M. (2024). Carbon Footprint, Financial Structure, and Firm Valuation: An Empirical Investigation. *Risks*, *12*(12), 1–22. https://doi.org/10.3390/risks12120197
19) Hendiarto, R. S., & Annisa, D. (2021). The Effect of Capital Structure on Firm Value (Case Study on Mining Sector Companies Listed On the Indonesia Stock Exchange (Period 2014-2018). *Review of International Geographical Education Online*, *11*(5), 3198–3206. https://doi.org/10.48047/rigeo.11.05.210
20) Ishanda, R. L. (2025). Pengaruh Ukuran Perusahaan, Kebijakan Dividen, Struktur Modal dan Profitabilitas Terhadap Nilai Perusahaan Pada Perusahaan Makanan dan Minuman yang Terdaftar di Bursa Efek Indonesia. *Jurnal Ekonomi Dan Bisnis*.
21) Jonah, A. O., Bemshima., O. B., & BELLO, M. (2024). Capital Structure, Dividend Policy and Firm Value of Listed Non-Financial Companies in Nigeria. *International Journal of Research and Innovation in Social Science*, *VIII*(IV), 1279–1296. https://doi.org/10.47772/IJRISS.2024.804096
22) Lanjas, V. M. (2021). The Effect of Capital Structure, Company Growth, and Profitability on Firm Value. *Research Journal of Finance and Accounting*, *12*(6), 102–109. https://doi.org/10.7176/RJFA/12-6-09
23) Maquieira, C. P., & Pastén-Henríquez, B. (2026). Does climate policy uncertainty impact gold-mining stock returns? International evidence. *Journal of Commodity Markets*, *41*, 100539. https://doi.org/10.1016/j.jcomm.2026.100539
24) Miller, M. H., & Rock, K. (1985). Dividend Policy under Asymmetric Information. *The Journal of Finance*, *40*(4), 1031–1051.

https://doi.org/10.1111/j.1540-6261.1985.tb02362.x

25) Myers, S. C. (1984). The Capital Structure Puzzle. *The Journal of Finance*, *39*(3), 574–592. https://doi.org/10.1111/j.1540-6261.1984.tb03646.x
26) Nguyen, H. T., & Nguyen, A. H. (2020). The impact of capital structure on firm performance: Evidence from Vietnam. *Journal of Asian Finance, Economics and Business*, *7*(4), 97–105. https://doi.org/10.13106/JAFEB.2020.VOL7.NO4.97
27) Njoku, O. E., & Lee, Y. (2025). Financial Strategies Driving Market Performance During Recession in Nigerian Manufacturing Firms. *Journal of Risk and Financial Management*, *18*(2). https://doi.org/10.3390/jrfm18020081
28) Passla, V. K., Podile, V. R., Durga, S., & Narapareddy, V. (2025). The Influence of Financial Leverage on Firm Value Through Investment Decisions: Empirical Evidence from Oman's Food Sector. *Journal of Applied Economic Sciences*, *20*(2), 313–324. https://doi.org/10.57017/jaes.v20.2(88).10
29) Puspitaningtyas, Z. (2019). Empirical evidence of market reactions based on signaling theory in Indonesia stock exchange. *Investment Management and Financial Innovations*, *16*(2).
30) Ramadhan, G. F. (2023). Pengaruh Kebijakan Hutang dan Kebijakan Dividen Terhadap Nilai Perusahaan Kelompok LQ 45 yang Terdaftar di Bursa Efek Indonesia Tahun 2012-2016. *Jurnal Riset Akuntansi Keuangan*, *Vol. 3 (1)*.
31) Sari, F. N., & Trisnawati, R. (2024). Pengaruh Perencanaan Pajak, Keputusan Investasi, Kebijakan Dividen, Cash Holding dan Struktur Modal Terhadap Nilai Perusahaan. *Journal of Management*, *Vol. 7 (2)*.
32) Siregar, H., & Sasongko, H. (2023). *Peran Moderasi Faktor Makroekonomi pada Faktor-Faktor yang Mempengaruhi Nilai Perusahaan*. *6*(1), 229–252.
33) Surwanti, A., & Pamungkas, W. S. (2021). Dividend Policy, Firms' Characteristics and the Impact on the Southeast Asian Firms' Value. *Proceedings of the 4th International Conference on Sustainable Innovation 2020-Accounting and Management (ICoSIAMS 2020)*, *176*(ICoSIAMS 2020), 150–156. https://doi.org/10.2991/aer.k.210121.021
34) Tarkom, A., & Ujah, N. U. (2023). Inflation, interest rate, and firm efficiency: The impact of policy uncertainty. *Journal of International Money and Finance*, *131*, 102799. https://doi.org/10.1016/j.jimonfin.2022.102799
35) Umoru, David; Igbinovia, B. (2024). Exchange rate behaviour in ASEAN countries. *The Central European Review of Economics and Management*, *8*(4), 37–73. https://doi.org/10.29015/cerem.1008
36) Utari, N. K. D. T. (2024). Pengaruh Profitabilitas, Likuiditas, Struktur Modal, Kebijakan Dividen dan Ukuran Perusahaan Terhadap Nilai Perusahaan Pada Perusahaan Property dan Real Estate Yang Terdaftar Di BEI Tahun 2017–2022. *Jurnal Ekonomi Dan Bisnis*.
37) Wooldridge, J. M. (2010). Econometric Analysis of Cross Section and Panel Data. In *The MIT Press* (Vol. 16, Issue 4). The MIT Press.
38) Zhang, Y., Li, Y., & Wang, W. (2026). Comparative analysis of investor sentiment and attention in the U.S. and Chinese stock markets: Implications for financial stability. *International Review of Financial Analysis*, *109*(May 2025), 104751. https://doi.org/10.1016/j.irfa.2025.104751
39) Zhao, Y., & Su, K. (2022). Economic policy uncertainty and corporate financialization: Evidence from China. *International Review of Financial Analysis*, *82*(December 2021), 102182. https://doi.org/10.1016/j.irfa.2022.102182

There is an Open Access article, distributed under the term of the Creative Commons Attribution – Non Commercial 4.0 International (CC BY-NC 4.0) (https://creativecommons.org/licenses/by-nc/4.0/), which permits remixing, adapting and building upon the work for non-commercial use, provided the original work is properly cited.