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Article

Determinants of dividend yield: A comparative analysis of long-run and short-run influences in ASEAN leading countries

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Abstract: This paper investigates the elements affecting dividend yield in developing Southeast Asian countries—more specifically, Thailand, Malaysia, and Singapore. Examined here are the roles of financial information including debt to equity ratio, free cashflows, property, plant, and equipment (PPE) and total sales with controlling factors of size, institutional ownership, and firm age using both short-run and long-run analytical frameworks including the Error Correction Model and Engle and Granger's approach. The results reveal different trends in the three nations. Higher debt and free cashflows lower dividend yield in Thailand; institutional shareholders benefit from maintaining greater dividend payouts. Aging companies in Malaysia are more likely to pay more dividends while rising revenues are linked to smaller short-term payouts. Leveraged and asset-heavy companies are more likely to keep paying dividends in Singapore. These discoveries have important ramifications for investors and business management trying to maximize dividend policies and improve shareholder value in developing economies.

Keywords: dividend; error correction model; long-run and short-run analysis; Thailand; Malaysia; Singapore

1. Introduction

As a fundamental indication of shareholder returns and company performance, dividend yield is a crucial statistic for investors and analysts. Dividend yield, a major indicator of shareholder return, plays a critical role in investment decision-making and indicates a firm's financial health and payment policy (Redding, 1997). It is generally considered to be a signal of stability and profitability, especially in economies with substantial information asymmetry, where dividends tend to diminish investor uncertainty (Deangelo et al., 2006). High dividend yields draw income-focused investors, encourage market value and liquidity and match shareholder objectives for regular returns (Denis and Osobov, 2008). Moreover, dividend yield is a significant component of overall returns, particularly in low-interest rate situations (Baker et al., 2020). In addition, previous studies indicate that dividend yield helps disclose its link with business features, governance structures, and market dynamics and offer insights into firms' financial strategy and investor behavior (Firth et al., 2016).

In emerging market economies like Thailand, Malaysia, and Singapore, investors often rely on dividend yield as an instrument of assessing corporate stability and potential profitability utilizing market volatility and variances in regulations. Nevertheless, despite their significance, the elements affecting dividend yield in these Southeast Asian markets are still alternated, so there are clear gaps in the scholarly body that this paper aims to fill. One main restriction in the field of current research is

the limited emphasis on earlier investigations. Although previous studies on dividend yield determining factors exist, most focus on single-country analyses or highly generalized cross-national datasets, therefore overlooking regional differences.

This research aims to close this gap by focusing on these three countries and assessing their particular business practices. Moreover, current studies usually ignore the need to differentiate between long-term and short-term effects on dividend yield. Financial information and business circumstances can immediately influence and continuously change a company's dividend policy. This paper applies both long-run and short-run studies to denote the varied consequences of these elements on dividend yield to manage this complexity. In addition, the dual analytical technique is unique since it lets one see how these elements affect dividend yield across time from a more all-encompassing perspective. The study will evaluate instantaneous effects on dividend policies in the near run, therefore offering information on elements likely to cause quick changes or transitory policy deviations. The long-run study seeks to pinpoint the long-standing consequences of these elements, thus providing a viewpoint on how structural elements such as institutional ownership or firm age affect dividend policies over a long time. Finally, few studies in dividend literature specifically look at these time-sensitive impacts, particularly with reference to developing economies where corporate environments and the overall economic scenario are changing fast. This method closes the research gap by examining the factors influencing dividend yield in three emerging economies. Focusing on Thailand, Malaysia, and Singapore helps the study to provide a region-specific knowledge of dividend yield trends.

This study finds that higher dividends supported by institutional owners in Thailand help minimize managerial discretion and reduce agency conflicts. The fast restoration to equilibrium emphasizes the need for a stable dividend policy. In Malaysia, debt limits dividends and the country's aging companies are more likely to pay significantly larger dividends. Sales growth lowers short-term dividend yield. Leveraged and asset-rich companies in Singapore exhibit better dividend yields, reflecting that country's economic stability. The slower adjustment rate points to a conservative dividend policy approach, sustaining investor confidence as institutional owners tend to pursue reinvestment strategies.

The rest of the research is organized as follows. Section 2 concentrates on the underlying hypotheses and the variables influencing dividend yield. Section 3 introduces the framework for this research. Section 4 explains the research methodology and related data collection techniques. Section 5 summarizes the results and then in Section 6 appears the discussion, implications and contributions. Section 7 concludes this research with a summary of the main themes covered in this paper, and the limitation aspects.

2. Literature review

2.1. Theories underpinning the study

2.1.1. Agency theory

Agency theory, developed by Jensen and Meckling (1976), describes how management (agents) and shareholders (principals) may fight due to their different

goals. Agency conflicts may arise when managers put themselves before shareholders. Dividends constrain managerial discretion by limiting free cashflows. Businesses decrease the risk of non-value-added spending by sharing earnings to shareholders. Agency theory is used to explore how dividend yield reflects governance procedures in rising economies like Thailand, Malaysia, and Singapore, where institutional shareholders are important. The research examines how free cashflows, debt to equity ratio, and institutional ownership affect dividend yield. The agency hypothesis states that dividends reduce management opportunism, hence increased institutional ownership may support regular dividend distributions. Leverage (debt to equity ratio) may also influence management to prioritize dividends. These dynamics answer the issue of how governance and finance institutions impact dividend yield in different economic settings.

2.1.2. Signaling theory

Spence's (1973) signaling theory states that corporations utilize specific actions to educate the market, minimizing management-investor knowledge asymmetry. Dividend yield signaling theory claims that dividends indicate a firm's financial health, stability, and growth possibilities. Management's confidence in a company's success is shown by its dividend payments, reassuring investors regarding operations and cash flow. Dividends reveal particularly well in emerging markets. This study uses signaling theory to examine how financial measures like property, plant, and equipment levels and sales growth affect dividend payout policy to suggest a firm's stability and operational strength. To attract and keep investors, the study questions examine whether continuously high dividend yields or dividend revisions indicate competent financial management and future profitability.

This study is well-supported by agency theory and signaling theory. Signaling theory emphasizes dividends as a communication instrument to minimize investor uncertainty, whereas agency theory emphasizes dividends as a governance instrument to reduce management discretion and align interests. To answer the research questions, this study examines how free cashflows, institutional shareholders, leverage, sales, and asset levels affect dividend yield in Thailand, Malaysia, and Singapore from this dual perspective. These theories describe how dividends regulate agency conflicts and communicate financial soundness, especially in emerging economies with high information asymmetry and governance issues.

2.2. Previous studies

Dividend yield, an essential component of shareholder returns, is influenced by a variety of factors. This literature review explores these determinants, including financial metrics and previously successful factors.

2.3. Financial ratios and dividend policy

Many studies underline how financial metrics shape dividend policy. Free cashflows strongly suggest that corporations with strong free cashflows are more motivated to declare dividends, indicating profitability and lowering agency costs. Dividend policy can be influenced by asset intensity (i.e., property, plants and equipment) as companies making large investments in tangible assets could give

capital budget first priority over payouts. Greater profitability usually corresponds with higher sales, resulting in the ability to pay dividends. Previous studies are well-documented, showing how financial ratios affect dividend policy. Studies on dividend policy have been continuously done and refined from basic ideas so that more modern assumptions are employed to explain what is happening in many market settings. Selected studies are as follows. Rozeff (1982) first suggested that the ideal dividend payout policy balances agency costs and transaction costs connected with outside funding. This view helped to explain dividends as a way to reduce disputes between the management team and shareholders. Building on Rozeff's approach, Lang and Litzenberger (1989) looked at dividend announcements and found that companies with limited investment potential—that is, evaluated by Tobin's Q—show good returns from significant dividend adjustments since these payouts indicate a decrease in overinvestment. This validated the free cashflows, suggesting that dividends restrict the money managers may have access to for perhaps ineffective or risky ventures. Agrawal and Jayaraman (1994) expanded this viewpoint by demonstrating that high dividend distributions are used as a substitute mechanism to limit executive overreach by all-equity companies—which lack debt to regulate free cashflows.

Studies on how companies' life cycles affect dividend policies started in parallel. Jones and Sharma (2001) stated that high-growth firms prioritize reinvestment over dividends. Firms share their income as dividends grow, resulting in decreased investment possibilities. Charitou and Vafeas (2003) point out the relevance of cashflows as a driver of dividends, as operational cashflows are a more accurate indicator of dividend changes than profits. While developing markets follow similar dividend patterns to U.S. companies regarding profitability and debt, country-specific characteristics and asset mixes produce distinct sensitivity, extending these ideas by Aivazian et al. (2003). Their results highlight the need for context, since dependence on bank loans and local regulatory restrictions causes different outcomes in developing countries.

Deangelo et al. (2006) provided additional evidence for the life-cycle approach by showing that companies depending on contributed capital avoid payments, while those with a high proportion of retained earnings compared to total equity are more likely to pay dividends. This implies that retained earnings act as an internal financing source, allowing companies to maintain dividends without compromising expansion. Recent research has explored the dynamics of industry-specific and rising markets. Gill et al. (2010) underlined how industry traits significantly affect dividend policy; manufacturing companies by tax and book ratios and U.S. service companies affected by sales growth. Dividend policies interact with capital structure and profitability in Indonesia, as observed by Karismawati and Suarjaya (2020) and Purwanto et al. (2021), suggesting that companies with faster sales growth and active dividend policies usually depend more on debt. Maharani et al. (2021) recently verified the impact of liquidity and profitability on dividends in high-yield companies. The study found that dividends are a balancing tool for growth, stability, and shareholder satisfaction.

2.4. Control factors

Past research has effectively found additional elements affecting dividend policy. Because larger companies usually have steadier and more predictable cashflows, which helps them to keep continuous dividend payments, firm size generally corresponds to the dividend yield. Corporate governance and its impact on dividend policy much depend on institutional shareholders. As well, aging firms are more able to pay continuous dividends because they are more likely to have steady income sources and predictable cashflows. Studies on dividend policy have investigated various influential elements. Early research generated a fundamental understanding of how institutional shareholders and corporate size influence dividend decisions. Redding (1997), for example, noted larger companies are more likely to pay dividends, and institutional investors gained a welcome sense of stability by choosing dividend-paying companies. Supporting this, Han et al. (1999) discovered there is a favorable link between institutional ownership and dividend distributions as institutions value dividends for tax advantages. Building on this, Short et al. (2002) examined UK companies to demonstrate that institutional ownership increases dividends to reduce management excesses, hence underlining the function of agency theory in governance.

Likewise, Grinstein and Michaely (2005) found that a strong institutional shareholder encourages share buybacks as a more flexible distribution option, although American institutions prefer repurchases over dividends. Deangelo et al. (2006) suggested the life-cycle hypothesis of dividends, stating that although younger businesses preferred reinvestment, older companies with retained earnings were more likely to pay dividends.

International research started looking at how institutional investors affect payouts in developing countries. Kim and Sul (2010), for instance, underlined those international investors in South Korea who support larger payouts, therefore matching rising markets with global governance norms. Similar dynamics were noted by Firth et al. (2016) in China, where mutual funds encourage dividends to lower agency costs in companies with significant cashflows or state ownership. Likewise, Cao et al. (2017) revealed that, particularly in high-risk situations, international investors in China favor high-yield companies as an indication of financial stability. Stable institutional shareholders tie with consistent dividends. Jory et al. (2017) supported good governance, life cycle and agency theories and stated that larger and older companies often pay regular dividends as shown in the research conducted by Brawn and Ševič (2018). Baker et al. (2020) investigated investor preferences in Sweden and discovered that domestic institutional shareholders give high-yield equities under low-interest circumstances top priority. This results in the function of dividends being critical in overall returns. With altered consequences for emerging economies, dividend policy-related studies generally reveal that business size, institutional preferences, life-cycle stages, and market circumstances affect payouts.

The recent studies on factors influencing dividend policy are as follows. While efficiency-oriented companies pay higher dividends, prospectors pay lower dividends due to cash flow unpredictability and R&D focus (Akindayomi and Amin, 2022). Cao et al. (2022) reveal that a firm's business strategy significantly shapes its dividend decisions. Lee et al. (2022) find that while debt and firm size negatively affect

dividends in Vietnam, profitability and free cash flow increase them. With Big Four-audited companies having tougher criteria, ESG scores enhance dividends but limit expansion owing to financial expenses, Zahid et al. (2023) say. Hartono and Robiyanto (2023) say that whilst leverage and growth potential enhance volatility, profitability and lagged dividends stabilize payments. Anuar et al. (2023) reveal that tax efficiency involves Malaysian dividend behavior. Strong government negatively affects information asymmetry on UAE corporate dividends (Al-Hiyari et al., 2024). Management ownership cut down dividends in Pakistan, while institutional, foreign, and personal ownership raises them (Farooq et al. 2024). Miller et al. (2022) find that distributed family ownership increases dividends in later-generation companies. While gender and age have no effect on dividends in Turkey, Khan et al. (2024) showed that board diversity, education, and experience increases them.

In summary, dividend policy is influenced by various factors. Recent studies show that business strategies, tax efficiency, ESG practices, and board diversity further shape payouts, reflecting a balance between shareholder returns and corporate priorities across different markets.

3. Conceptual framework

The above literature review gives rise to a research opportunity for this study. **Figure 1** suggests that financial information variables (debt to equity, free cashflows, Property, Plants, and equipment, Sales) and control variables (size (Total assets), institutional shareholders, and firm age) highlight the multifaceted influences on dividend yield, emphasizing the need for companies to manage both financial indicators and control variables.

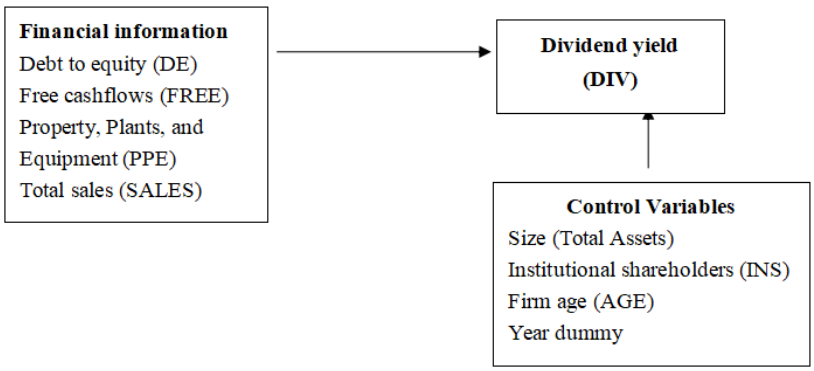

Figure 1. Conceptual framework.

4. Research methodology

4.1. Dataset and statistical analysis

This study employs all listed on the Stock Exchanges of Thailand, Malaysia, and Singapore during 2013–2023. The dataset was considered as developing markets with different governance classifications and economic settings. In addition, they are notable and fast-growing economies in the ASEAN region. The dataset was downloaded from Bloomberg database. Bloomberg was selected as the data source because it is dependability, broad coverage, and accuracy in offering thorough

financial indicators and company data. Companies with consistent financial reporting during the research period and enough data availability on important factors such dividend yield, debt to equity ratio, free cashflows, institutional shareholders. Companies having incomplete or absent data on any one of these factors were eliminated to guarantee the dependability and strength of the study.

Although the dataset seeks to have a wide and representative sample, some prejudices have to be admitted. First, depending on publicly traded companies can exclude tiny, privately owned businesses, therefore restricting the generalizability of results to the wider corporate world. Second, excluding enterprises with incomplete data may cause bias because companies with more consistent operations and reporting overrepresent themselves. Third, although deliberate, the emphasis on only three ASEAN economies might restrict the application of the findings to other developing markets with different governance systems and economic settings. Notwithstanding these restrictions, the dataset provides a strong basis for evaluating the value relevance of financial measures and elements affecting dividend yield in developing countries. Including a ten-year period guarantees that the research records both short-term and long-term patterns, therefore offering insightful analysis of the dynamics of dividend policy in Thailand, Malaysia, and Singapore.

Furthermore, long-term and short-term analyses are performed. This study reveals the changes in environmental policies in globally significant, fast-growing economies that are also increasingly regionally strategic. Moreover, these countries provide alternative ways to industrialized countries to balance company responsibilities with economic development. The analysis employs the Hildreth-Lu approach, ensuring that the sequential relationships among data do not skew the regression results (Subhi and Azkiya, 2022). Furthermore, Driscoll and Kraay standard errors were employed to compensate for heteroskedasticity, offering strong, consistent values independent of non-constant data variances (Driscoll and Kraay, 1998).

4.2. Measurements for the variables

Table 1 summarizes the detailed information on the measurement of both dependent and independent variables, along with references to previous studies that have used these measurements.

Table 1. Summary of variables.

Variables	Measurement
Dependent variable	
DIV	Dividend per share over earnings per share
Independent variables	
DE	Debt to equity
FREE	Cashflows from operations minus expenditure investments
PPE	Property, Plants, and Equipment – Net
SALES	Sales during the year
INS	Institutional shareholders divided by to total shareholders
SIZE	Total Assets
AGE	Firm age since inception

4.3. Model specifications

In order to fulfill the study's objective, the analysis initially structures the equation as specified below:

$$DIV_{it} = \alpha + \beta_1 DE_{it} + \beta_2 FREE_{it} + \beta_3 PPE_{it} + \beta_4 SALES_{it} + \beta_5 SIZE_{it} + \beta_6 INS_{it} + \beta_7 AGE_{it} + \varepsilon \quad (1)$$

For long-term to equilibrium analysis, the study adopts the study of Engle and Granger (1987) is as

$$\hat{y}_t = \alpha_0 + \beta_1 X_{1,t} + \ldots + B_n X_{n,t} + u_t \quad (2)$$

and $\hat{u}_t = y_t - \alpha_0 - \beta_1 X_{1,t} - \ldots B_n X_{n,t}$, If $\hat{u}_t$ is stationary the variables are cointegrated with a long run αto equilibrium, so these equations of long run to equilibrium are shown in **Table 4**. For short run analysis as depicted in **Table 5**, the study uses the Error Correction Model as follows.

$$\Delta DIV_t = \beta_0 + \beta_1 \Delta DE_{t-1} + \beta_2 \Delta FREE_{t-1} + \beta_3 \Delta PPE_{t-1} + \beta_4 \Delta SALES_{t-1} + \beta_5 \Delta SIZE_{t-1} + \beta_6 \Delta INS_{t-1} + \beta_7 \Delta AGE_{t-1} + \alpha\varepsilon_{t-1} + \delta \quad (3)$$

5. Findings

5.1. Descriptive statistics

The descriptive statistics in **Table 2** provide insights into dividend yield (DIV), debt to equity (DE), free cashflows (FREE), property, plant, and equipment (PPE), sales, firm size (SIZE), institutional ownership (INS), and firm age (AGE) across firms in Thailand, Malaysia, and Singapore.

Table 2. Descriptive statistics.

Variables	λ	MEAN	SD	MAX	MIN	Skewness	Kurtosis
THAILAND							
DIV	2.29	0.555	0.994	6.330	−13.330	−4.821	16.860
DE	0.15	1.192	1.466	8.130	0.000	2.592	7.255
FREE	1.310	−0.218	0.262	0.590	−0.950	−0.535	−0.152
PPE (10^6)	−2.00	3.75	5.90	46.50	0.02	2.996	10.662
SALES (10^8)	0.170	1.01	0.13	8.32	0.01	9.170	7.624
SIZE (10^8)	0.180	3.06	0.59	35.90	0.04	3.499	12.941
INS	−1.44	7.624	3.439	24.000	5.000	2.337	6.465
AGE	0.810	41.360	15.585	87.100	1.100	0.251	0.107
MALAYSIA							
Div	1.09	0.479	0.300	2.174	−1.296	0.266	6.624
DE	−0.230	1.150	1.802	11.684	0.000	3.223	10.932
FREE	1.34	−0.216	0.256	0.579	−0.952	−0.778	1.248
PPE (10^5)	0.140	61.123	9.547	54.196	0.001	2.327	5.498
SALES (10^8)	−2.030	0.12	0.014	0.066	0.001	1.613	1.926
SIZE (10^5)	−1.010	24.68	46.15	255.81	0.013	3.510	12.506
INS	−0.510	2.871	5.018	28.000	0.000	2.169	5.426

AGE	0.290	27.192	18.382	113.200	0.000	1.811	5.223
SINGAPORE							
Div	0.96	0.602	0.483	3.050	−1.550	0.543	5.493
DE	−0.19	1.786	2.720	12.350	0.050	2.447	4.823
FREE	0.4	−0.448	0.401	0.130	−0.960	−0.039	−1.754
PPE (10^5)	−1.02	159.001	753.353	4409.239	0.001	5.481	28.276
SALES (10^8)	−0.83	6.466	6.061	73.015	0.001	10.908	38.972
SIZE (10^5)	−0.72	567.516	16432.967	7704.279	1.156	3.306	10.150
INS	0.14	5.802	6.381	29.000	0.000	1.136	1.036
AGE	0.38	24.599	22.201	90.700	0.000	1.326	0.982

Table 2 shows that in Thailand, the mean dividend yield (2.29) is relatively higher than in Malaysia (1.09) and Singapore (0.96), suggesting Thai firms might prioritize dividends more, potentially as a means of attracting and retaining investors. Thailand's DE illustrates notable skewness (2.592), meaning that while some firms use high leverage, a considerable number operate with minimal debt. High kurtosis values for PPE and sales in all countries imply that the distributions of these variables have extreme outliers, particularly in Singapore where sales and PPE skewness and kurtosis are exceptionally high, reflecting significant variations among firms in capital intensity and revenue. Malaysia and Singapore exhibit negative mean values for some variables, such as DE and SIZE, indicating that specific sectors may operate differently compared to Thailand, possibly due to market structure or firm strategies. Singapore shows the most variability, with particularly high mean values for SIZE and sales, highlighting the dominance of large, capital-intensive firms in the market. Skewness and kurtosis levels in institutional ownership and firm age show variations across the countries, with Thai firms presenting a positive skew, suggesting a younger firm base. In contrast, Singapore's firms show more stability in institutional ownership. Overall, the descriptive statistics highlight structural and operational differences in dividend policies, leverage, and market positioning across the three markets, providing a foundation for understanding how these characteristics influence dividend-related decisions.

5.2. Data validation

The study begins with Tukey's Biweight M-Estimator (Sinova and Aelst, 2018) with a weighting constant of 4.685, searching for anomalies. Moreover, a Box-Cox transformation was executed to guarantee the data fits presumptions of normality. Normality was verified post-transformation by Z-skewness and Z-kurtosis; results fell within accepted criteria for normal distribution. The paper claims that the Zskew and Zkur values should be within the range of (−1.96, 1.96) at a 0.05 significance level and (−2.58, 2.58) at a 0.01 significance level if the data is to be regularly distributed (Hair et al., 2010). Consequently, the data follows normal distribution presumptions.

Regarding the testing of multicollinearity, the VIF values for all three countries are between 1.115–4.242, much below 10 (Hair et al., 2010). These findings confirm that the independent variables do not show too strong an association with one another, thereby verifying that every variable adds specifically to the study without duplication.

This lack of multicollinearity increases the interpretative power of any variable and therefore generates better knowledge of their unique correlations with dividend yield.

Though not shockingly low, the Durbin-Watson statistics show some degree of positive autocorrelation in the data for all countries. Positive autocorrelation implies that error factors might be correlated across data, therefore biasing conventional regression findings. The Wooldridge test for panel data (Wooldridge, 2008) established the existence of yet more autocorrelation. Both the Breusch-Pagan test (Breusch and Pagan, 1979) and the Wald test for heteroskedasticity verified significant heteroskedasticity, suggesting that variations were not stable across data. This conclusion implies that, in case of uncritical correction, standard error estimations might be incorrect, compromising the accuracy of the regression outcomes. The Pesaran CD test (Pesaran, 2006) for cross-sectional dependency showed no appreciable correlation between residuals across several nations, implying that every nation's dataset runs independently, free from affecting one another. The ADF test for stationarity (Chang and Park, 2002) revealed that every nation's data is stationary, so the series lacks unit roots. Stationarity guarantees that statistical characteristics, including mean and variance, stay constant throughout time, therefore supporting the dependability of both short-term and long-term studies in the research.

To solve the found dataset problems, autocorrelation was corrected using the Hildreth-Lu approach, ensuring that the sequential relationships among data do not skew the regression results (Subhi and Azkiya, 2022). Furthermore, Driscoll and Kraay standard errors were employed to compensate for heteroskedasticity, offering strong, consistent values independent of non-constant data variances (Driscoll and Kraay, 1998).

After regression assumption tests, including outliers, guarantee normality, regulate multicollinearity, and solve problems of autocorrelation and heteroskedasticity, are considered, the validity of the data is justified. This gives hope that the next interpretations and conclusions will represent the real data.

Table 3. Assumption tests.

Statistics Tests	Thailand	Malaysia	Singapore
VIF	1.592–4.186	1.324–4.017	1.115–4.242
Durbin-Watson	1.132	1.224	1.265
Breusch-Pagan test	8.964 (0.006)	17.5022 (0.000)	14.8092 (0.0000)
Wooldridge test for autocorrelation in panel	104.126 (0.000)	57.806 (0.000)	7.6498 (0.007)
Wald test for heteroskedasticity in panel	12653.59 (0.000)	18233.10 (0.000)	16577.50 (0.000)
Pesaran CD test for cross-sectional dependence	−1.7522 (0.104)	−1.2253 (0.225)	−1.437 (0.324)
ADF test Stationary	−19.6132 (0.000)	−18.4925 (0.000)	15.1207 (0.000)

5.3. Regression analysis results

5.3.1. Long-run results

The long-run analysis of dividend yield across Thailand, Malaysia, and Singapore, using Engle and Granger's (1987) approach to assess equilibrium relationships, provides insights into how various factors contribute to dividend yield stability over time. The following is the descriptive analysis based on the long-run results that are documented in **Table 4**.

Table 4. Long-run analysis.

VARIABLE	Thailand	Malaysia	Singapore
ρ	0.1337	0.4755	0.2359
CONST	0.480** (0.159)	0.424*** (0.049)	0.577*** (0.098)
DE	−0.038* (0.018)	−0.130* (0.055)	0.047*** (0.007)
FREE	0.158 (0.113)	−0.103 (0.074)	−0.272*** (0.071)
PPE	0.000 (0.000)	0.000 (0.000)	0.002* (0.001)
SALES	−0.003* (0.001)	0.000 (0.000)	0.000 (0.000)
SIZE	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
INS	0.011* (0.005)	−0.004* (0.002)	−0.001 (0.004)
AGE	−0.002 (0.002)	0.002* (0.001)	−0.001 (0.002)
Year dummy	Yes	Yes	Yes
Adj R^2	0.2587	0.3118	0.4528
Durbin-Watson	2.0710	2.0299	2.0487
ADF TEST tau_c(1) =	−14.8447 (0.000)	20.4463 (0.000)	18.1964 (0.000)

(1) Thailand

With an adjusted *R*-squared of 0.2587, a value of −0.038, significant at the 5% level, the debt to equity ratio reduces dividend yield. Implied here is that greater leverage results in less dividend yield. With coefficients close to zero, PPE and size (total assets) imply little to no long-run impact on dividend yield. With a strong 5% level value, the coefficient for sales is −0.003, suggesting that increasing sales might really correspond with an insignificant drop in dividend yield. This would suggest that, over time, Thai companies with higher sales give reinvestment priority over dividend payments. Reflecting the monitoring function of institutional shareholders in supporting dividend distribution, the positive and notable coefficient of 0.011 indicates that a larger degree of institutional shareholders usually supports dividend yield.

(2) Malaysia

In Malaysia, the model with adjusted *R*-squared of 0.3118, debt to equity has a substantial negative impact on dividend yield, with a coefficient of −0.130, significant at the 5% level. Malaysian firms with higher leverage are likely to pay lower dividends. Institutional shareholders negatively impact dividend yield, with a coefficient of

−0.004, significant at the 5% level. The positive coefficient of 0.002, significant at the 5% level, indicates that older firms in Malaysia tend to have higher dividend yields in the long run.

(3) Singapore

With a 0.4528 corrected *R*-squared, the Singaporean analysis shows the best. With a coefficient of 0.047, significant at the 1% level, the debt to equity ratio helps to increase dividend yield in Singapore, unlike in Thailand and Malaysia. Highly significant and negative (−0.272), the coefficient indicates that companies with larger free cashflows would not prioritize dividends. At the 5% level, PPE has a positive coefficient of 0.002, which significantly relates to dividend yield.

All things considered, the long-term analysis exposes different trends across Thailand, Malaysia, and Singapore. While debt levels and sales are more likely to reduce dividend yield in Thailand, institutional ownership supports dividend distributions. High debt and younger companies age lower dividend yields in Malaysia; older companies are more likely to pay dividends. Leveraged companies and those with high PPE levels often pay larger dividends in Singapore; stronger free cashflows generally correspond with lower payouts.

5.3.2. Short-run analysis

The short-run analysis uses an Error Correction Model (ECM) to evaluate how each variable impacts dividend yield in the short-term for Thailand, Malaysia, and Singapore, with adjustments toward long-run equilibrium when deviations occur. **Table 5** is a descriptive summary of the short-run results for each country.

Table 5. Short-run analysis.

Variables	THAILAND	MALAYSIA	SINGAPORE
const	−0.0235 (0.0447)	0.0052 (0.0127)	0.0080 (0.0087)
ΔDE_{t-1}	−0.0436* (0.0192)	−0.0156 (0.0127)	−0.0007 (0.0115)
$\Delta FREE_{t-1}$	−0.2346*** (0.0469)	0.0082 (0.1241)	−0.1112 (0.1108)
ΔPPE_{t-1}	−0.0000 (0.0001)	−0.0000 (0.0003)	0.0003** (0.0002)
$\Delta SALES_{t-1}$	−0.0000 (0.0035)	−0.0070* (0.0033)	−0.0000 (0.0002)
$\Delta SIZE_{t-1}$	0.0000 (0.0026)	0.0000 (0.0002)	−0.0004** (0.0001)
ΔINS_{t-1}	−0.0074** (0.0029)	0.0054 (0.0039)	−0.0049* (0.0022)
ΔAGE_{t-1}	−0.0029* (0.0012)	0.0021* (0.0011)	0.0095 (0.0027)***
ε_{t-1}	−0.4821** (0.1322)	−0.4088*** (0.0662)	−0.3178*** (0.0582)
Adj R^2	0.2836	0.2115	0.2509
Durbin-Watson	2.6718	1.917	2.5409

Significance at level *0.05, ** 0.01, *** 0.001, standard error in the parenthesis.

(1) Thailand

With an adjusted *R*-squared of 0.2836, the short-run model in Thailand explains around 28.36% of the variability in dividend yield. Significantly at the 5% level, a one-unit change in the debt to equity ratio results in a 0.0436 decline in dividend yield. With a one-unit increase producing a 0.2346 fall in dividend yield, highly significant at the 0.001 level, free cashflows clearly affect dividend yield. With a one-unit increase lowering dividend yield by 0.0074 (significant at the 0.01 level), institutional shareholders have a tiny but statistically significant negative influence on dividend yielding. Firm age exerts a little negative effect, lowering dividend yield by 0.0029 for every extra year (significant at 5%). Equilibrium Adjustment: (ε_{t-1}) Dividend yield moves returns toward long-run equilibrium at a speed of 48.21% for each period in reaction to any shock that deviates the relationship from its equilibrium.

(2) Malaysia

With an adjusted *R*-squared of 0.2115, a one-unit rise in sales produced a 0.007 decline in dividend yield, substantial at the 5% level. Firm age has a favorable effect on dividend yield; a one-unit rise results in a 0.0021 gain, notable at the 5% level. Equilibrium Adjustment (ε_{t-1}), following a shock, the rate of change toward equilibrium is 40.88% per period. This modest change rate implies that Malaysian companies realign with their long-term dividend policy via a fast correction of short-term aberrations.

(3) Singapore

With an adjusted *R*-squared of 0.2509, a one-unit increase yielding a 0.0003 gain in dividend yield—significant at the 1% level—PPE favorably affects dividend yield. A one-unit increase produces a 0.0004 drop in dividend yield, which is substantial at the 1% level. Size—total assets—negatively affect dividend yield in the near term. With a one-unit increase lowering dividend yield by 0.0049, which is considerable at the 5% level, institutional shareholders have a little but noticeable negative effect. Unlike Thailand and Malaysia, firm age increases dividend yield in Singapore; a one-unit change in age produces a very significant 0.0095 rise in dividend yield, at the 0.001 level. Equilibrium Adjustment (ε_{t-1}), slower than in Thailand and Malaysia, Singapore's adjustment pace toward long-run equilibrium is 31.78% per period. This delayed correction implies that Singaporean companies might approach realigning with their long-term dividend policy following short-term aberrations more gradually.

In summary, the short-term analysis reveals a distinction between the three economies. In Thailand, higher debt to equity and free cashflows decrease dividend yield, while the adjustment speed toward equilibrium is the highest among them. In Malaysia, increased sales and younger firm age reduce dividend yield, while older firms maintain dividends. In Singapore, firms with high PPE and older firms show a tendency toward higher dividends in the short-term, though firms with large assets or institutional ownership are more inclined toward reinvestment. Overall, the short-run results highlight how country-specific factors and investor preferences affect dividend policies, with each country displaying distinct dynamics.

6. Discussion, contributions and implications

(1) Thailand

The study reveals in Thailand that both the debt to equity ratio and free cashflows have negative effects on dividend yield both in the long- and short-terms. Agency theory argues that the negative impact of the debt to equity ratio indicates Thai companies with more leverage give repaying debt top priority above dividend distribution. Remarkably, free cashflows also have a negative short-term effect, suggesting that companies may choose reinvestment over dividend distributions even in cases of extra cash availability to support expansion or lower debt. For the long-term scenario, the study suggests that institutional shareholders significantly shape dividend policy. The fast return speed back to equilibrium (48.21%) suggests that Thai companies often readjust with their long-term dividend plan following any short-term divergence, maybe to preserve stability and investor trust.

The results imply that debt levels affect the dividend decisions of Thai companies. Regulators should pay attention to cautious leverage management, especially in companies with a significant number of institutional shareholders. The favorable impact on dividend yield emphasizes to institutional investors the need for their presence in promoting returns through dividends, thereby drawing more income-oriented investors.

Thai management teams may be able to develop a combination plan including dividend distribution and reinvestment. Monitoring debt and free cashflows will help management create a sustainable dividend policy suitable for both long-term development and shareholder expectations. Investors—especially those seeking consistent dividend returns—should evaluate management practices on debt and cashflows.

(2) Malaysia

The debt to equity ratio in Malaysia reduces long-term dividend yield, implying that leveraged companies prioritize debt repayments over dividends—a sensible strategy in a developing country with possibly higher financing costs. The short-term negative impact of sales on dividend yield indicates that companies with higher sales are more inclined to reinvest in operations or expansion rather than pay dividends. On the other hand, firm age improves dividend yield in both the short- and long-term. Older firms tend to pay dividends probably because they enjoy consistent cashflows and financial stability. The changing speed toward equilibrium (40.88%) in Malaysia indicates that Malaysian companies retain some flexibility in dividend policy changes but typically realign with their long-term strategy.

In addition, it is found that both age and leverage affect dividend distributions. Regulators should monitor governance rules for debt management in older companies because these companies are more likely to continue dividend payments. Institutional shareholders may also find Malaysian companies with reduced debt levels and constant sales growth more attractive.

These ideas will help Malaysian managers design dividend plans that strike a balance between stability and development. Companies might appeal to income-oriented investors more by keeping reasonable debt levels and concentrating on sustainable development than younger companies. Similarly, those with strong sales growth may give reinvestment top priority, which would impact short-term dividend stability but might present long-term growth potential.

(3) Singapore

The study finds a clear trend in Singapore whereby dividend yield is favorably influenced by the debt to equity ratio and property, plant, and equipment (PPE). This favorable link with PPE implies that asset-heavy companies might employ physical assets as security, therefore allowing them to create consistent cashflows and fund dividend payments. In Singapore, debt to equity positively relates to dividend yield, showing that leveraged companies could give dividends first priority as a financial stability indicator. On the other hand, institutional shareholders and size have a negative effect on short-term dividend yield, suggesting an inclination for reinvestment over payouts among asset-concentration companies and those with large institutional shareholders. Reflecting a cautious attitude toward preserving consistent dividend policies, the slower adjustment rate toward equilibrium (31.78%) shows that Singaporean companies use a more gradual approach to address short-term aberrations.

The favorable link between leverage and dividends indicates to legislators that rules promoting sensible debt use might help dividend-paying companies in Singapore, hence strengthening their stability. Institutional shareholders could choose companies with substantial assets in long-term extension rather than short-term dividend distributions.

Managers at Singaporean companies should implement a dividend policy that is a balance between debt control and asset use to preserve investor trust and indicate financial stability. The dividend-oriented investors among asset concentration and moderately leveraged companies should make such companies appealing investment choices. Investors should be careful of the slow-moving adjusting rate because it is possible that companies may postpone matching their long-term dividend policy in reaction to temporary changes.

6.1. Theoretical contributions

In many respects, the study findings confirm agency theory. First, the debt-to-equity ratio reveals that lower dividend yields are associated with more leverage in Thailand and Malaysia, as debt limits free cashflows and matches managers' interests with those of shareholders. However, leverage improves dividend yield in Singapore, inferring that companies there could utilize dividends to indicate stability despite more debt, therefore reflecting particular institutional effects in this economy. Second, institutional investors are very important as institutional ownership in Thailand increases long-term dividend yield, thereby signaling that institutional investors promote greater dividends to lower agency conflicts. In Malaysia and Singapore, conversely, institutional investors have a negative short-term impact on dividend yield, so reinvestment may be preferred above dividends in these settings depending on the state of the national economy. Last but not least, free cashflows negatively influence dividend yield in Thailand in line with the free cashflow theory, in which companies could reinvest extra cash instead of distributing it immediately depending on strategic goals. With influences differing by countries and environment frameworks, overall, the results support agency theory by revealing how leverage and institutional shareholders affect dividend policies across countries to lower agency conflicts.

The findings confirm the signaling hypothesis. First, the relevance of the constant term throughout Thailand, Malaysia, and Singapore indicates that companies keep a

baseline dividend yield as a symbol of stability, therefore expressing a commitment to paying shareholders and reassuring them of the state of the business. This is consistent with the notion of signaling that constant dividend distributions, even in performance swings, foster investor trust. The positive link between property, plant, and equipment and dividend yield indicates that asset-rich companies in Singapore employ dividends to show financial stability, therefore demonstrating their potential to produce steady returns despite reinvestment demands. In Malaysia, company age also affects dividend yield; older companies offer steady payouts to indicate maturity and lower risk, thereby attracting income-oriented investors who seek stability. Moreover, companies with larger debt in Singapore keep dividends to reassure investors of reasonable debt and how it is being managed, and consistent cashflows. In these ways any issues about financial risks are addressed.

6.2. Practical implication

(1) Thailand

Thai companies may give debt repayment and reinvestment first priority above dividends when debt to equity ratios and free cashflows are strong. Payouts should be balanced by growth-oriented investments among managers. Tracking debt and free cashflows helps companies keep financial stability and dividend policy intact. Through governance, institutional investors remove agency conflicts and advocate larger dividend payouts. Income-oriented investors looking for dividend-paying firms have to consider leverage and cash flow management.

(2) Malaysia

In Malaysia, the negative correlation between dividend yields and debt to equity ratios highlights debt management issues for investors and managers. Using the financial stability and regular cashflows of older companies will help management balance investments and shareholder returns to maintain appealing dividend policies. While younger companies or those with notable sales increase may give investment first priority, management should present investors with long-term development prospects. Seeking companies with less debt and mature operations can help institutional investors find consistent dividend payers. Investors should consider firm age and sales trends in order of dividend sustainability.

(3) Singapore

Leverage and PPE help to explain why asset-rich, moderately leveraged companies pay dividends in Singapore, hence influencing dividend rates. These revelations will enable managers to maximize asset utilization and leverage, therefore reassuring investors and proving financial stability. The inclination of institutional investors for investments in asset-heavy companies highlights long-term growth against short-term dividends. High-PPE, controlled-leverage companies are the choice of dividend investors. The slower pace of adjustment toward dividend equilibrium indicates that management is wary of policy changes that investors should consider when timing returns.

Regarding more general recommendations, business managers should consider the dividend policy. This is so because managers should reveal temporary deviations from long-term objectives as it shows business traits like leverage, asset structure, and

development possibilities. Maintaining investor confidence depends on balanced reinvestment and dividend payouts. While institutional investors may hunt companies with strong governance and regular returns, income-oriented investors should assess businesses' financial situation including debt levels and cash flow management. To make better investment selections, take sector-specific dynamics and country-specific government under account. Finally, governments should give careful debt management and governance top priority in order to improve the stability of dividend-paying companies—especially in developing nations like Thailand, Malaysia, and Singapore. Participation of institutional investors and openness help to increase market trust.

7. Conclusions

This study illuminates short- and long-term elements affecting dividend policy in Thailand, Malaysia, and Singapore. Agency theory and signaling theory influence dividend policies in each nation, as seen by the patterns. Thai dividend yields are lower due to heavy debt and free cashflows, although institutional investors help raise them. Dividends reduce management discretion and agency conflicts. Thai enterprises' consistent dividend policies are shown by the swift return to long-term equilibrium.

In Malaysia, debt limits dividend yields, but company age positively correlates with greater payouts, suggesting that mature enterprises with sound finances are more willing to reward shareholders. Sales hurt short-term dividends, indicating reinvestment and growth. Short-term flexibility and long-term dividend schemes are balanced in the modest adjustment toward equilibrium.

Leverage and property, plant, and equipment favorably affect dividend yields in Singapore, showing financial stability to investors. Signaling theory suggests that asset-rich corporations employ dividends to show resilience via their positive association with physical assets. Institutional investors prefer reinvestment in these businesses, making dividend policy revisions more conservative.

Combining agency theory and signaling theory to describe how financial measures and governance issues affect dividend yield in developing nations improves dividend policy knowledge. Institutional shareholders and leverage help align managerial actions with shareholder interests, especially in markets with different governance systems, according to the study. Dividends' significance as a financial health indicator highlights their importance as a communication tool, especially in information-asymmetric contexts.

This paper provides a nuanced view of dividend policy factors in different economic circumstances, contributing to corporate finance. They emphasize personalized governance and investor strategies that include short-term and long-term financial situations. This research links theoretical frameworks with practical consequences to advance corporate payment strategy debate by laying the groundwork for dividend policy in other emerging economies.

Limitations

The limits of this study offer chances for further investigations and let to place the results in particular perspective. First, the study concentrates just on the economies

of Thailand, Malaysia, and Singapore, therefore restricting the generalizability of its findings to other developing nations or world situations. The specific government systems, economic situation, and cultural foundations in various countries are more likely to produce results that are generally irrelevant. To verify the validity of the findings, future studies should widen the geographic extent to include other countries. Second, the study uses a dataset from 2013–2023, which although all-encompassing might be impacted by regional events, global trends, or economic cycles throughout this time. Examining data throughout several economic cycles or include more current, longitudinal datasets should help analyzing how dividend policies change with time. Third, although noting that dividend policy might vary greatly across sectors, the report does not specifically consider industry-specific variances. Future studies would benefit from include industry proxies or sector-specific variables to provide a more complex examination. Fourth, the linear presumptions in the used models could oversimplify intricate interactions among the variables. Non-linear dynamics, including threshold effects or declining returns, that cannot be adequately expressed by linear models typically shapes dividend policy. To investigate these complex interactions, future research may use cutting-edge econometric methods such non-linear or interaction models. Moreover, utilizing instrumental variables or dynamic panel techniques to solve any endogeneity problems might help to improve the causal interpretations of the results. Lastly, this study introduces some financial and governance indicators. This perhaps excludes other central elements such as macroeconomic variables, corporate governance quality, or investor attitude. Furthermore, investigating the moderating influences of elements like institutional shareholders could provide a more thorough understanding of the conditional consequences of these elements on dividend policy. These components may be included in future studies to offer a more complete picture of the factors influencing dividend yield.

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References

Agrawal, A., & Jayaraman, N. (1994). The dividend policies of all-equity firms: A direct test of the free cash flow theory.

Managerial and Decision Economics, 15(2), 139–148. Portico. https://doi.org/10.1002/mde.4090150206

Aivazian, V., Booth, L., & Cleary, S. (2003). Do Emerging Market Firms Follow Different Dividend Policies From U.S. Firms? Journal of Financial Research, 26(3), 371–387. Portico. https://doi.org/10.1111/1475-6803.00064

Akindayomi, A., & Amin, M. R. (2022). Does business strategy affect dividend payout policies?. Journal of Business Research, 151, 531-550. https://doi.org/10.1016/j.jbusres.2022.07.028

Al-Hiyari, A., Kolsi, M. C., Lutfi, A., et al. (2024). Information asymmetry and dividend payout in an emerging market: Does corporate governance quality matter? Journal of Open Innovation: Technology, Market, and Complexity, 10(1), 100188. https://doi.org/10.1016/j.joitmc.2023.100188

Anuar, A. Z. W., Haniff, M. N., & Azero, M. A. (2023). Determinants of Dividend Policy: Evidence from Malaysian Public Listed Companies. International Journal of Academic Research in Business and Social Sciences, 13(4). https://doi.org/10.6007/ijarbss/v13-i4/16602

Baker, H. K., De Ridder, A., & Råsbrant, J. (2020). Investors and dividend yields. The Quarterly Review of Economics and Finance, 76, 386–395. https://doi.org/10.1016/j.qref.2019.09.004

Brawn, D. A., & Šević, A. (2018). "Firm size matters: Industry sector, firm age and volatility do too in determining which publicly-listed US firms pay a dividend." International Review of Financial Analysis, 58, 132–152. https://doi.org/10.1016/j.irfa.2018.05.002

Breusch, T. S., & Pagan, A. R. (1979). A Simple Test for Heteroscedasticity and Random Coefficient Variation. Econometrica, 47(5), 1287. https://doi.org/10.2307/1911963

Cao, L., Du, Y., & Hansen, J. Ø. (2017). Foreign institutional investors and dividend policy: Evidence from China. International Business Review, 26(5), 816–827. https://doi.org/10.1016/j.ibusrev.2017.02.001

Cao, Y., Zhao, S., & Luo, X. (2022). The role of business strategies in shaping dividend policies: Evidence from global firms. Journal of Corporate Finance, 77, 102-113.

Chang, Y., & Park, J. Y. (2002). On the asymptotics of adf tests for unit roots. Econometric Reviews, 21(4), 431–447. https://doi.org/10.1081/etc-120015385

Charitou, A., & Vafeas, N. (1998). The Association Between Operating Cash Flows and Dividend Changes: An Empirical Investigation. Journal of Business Finance & Accounting, 25(1–2), 225–249. Portico. https://doi.org/10.1111/1468-5957.00185

Deangelo, H., Deangelo, L., & Stulz, R. (2006). Dividend policy and the earned/contributed capital mix: a test of the life-cycle theory. Journal of Financial Economics, 81(2), 227–254. https://doi.org/10.1016/j.jfineco.2005.07.005

Denis, D. J., & Osobov, I. (2008). Why do firms pay dividends? International evidence on the determinants of dividend policy☆. Journal of Financial Economics, 89(1), 62–82. https://doi.org/10.1016/j.jfineco.2007.06.006

Driscoll, J., & Kraay, A. (1998). Consistent Covariance Matrix Estimation with Spatially Dependent Panel Data. Review of Economics and Statistics, 80(4), 549–560. https://doi.org/10.1162/003465398557825

Farooq, M., Hussain, S., & Ahmed, T. (2024). Corporate governance and dividend policy in Pakistan: The role of ownership structure and firm characteristics. Managerial Finance, 50(3), 221-234.

Firth, M., Gao, J., Shen, J., et al. (2016). Institutional stock ownership and firms' cash dividend policies: Evidence from China. Journal of Banking & Finance, 65, 91–107. https://doi.org/10.1016/j.jbankfin.2016.01.009

Gill, A., Biger, N., & Tibrewala, R. (2010). Determinants of Dividend Payout Ratios: Evidence from United States. The Open Business Journal, 3(1), 8–14. https://doi.org/10.2174/1874915101003010008

Grinstein, Y., & Michaely, R. (2005). Institutional Holdings and Payout Policy. The Journal of Finance, 60(3), 1389–1426. https://doi.org/10.1111/j.1540-6261.2005.00765.x

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010) Multivariate Data Analysis, 7th ed. New York: Pearson.

Han, K. C., Lee, S. H., & Suk, D. Y. (1999). Institutional Shareholders and Dividends. Journal of Financial and Strategic Decisions, 12(1), 53-64.

Hartono, J., & Robiyanto, R. (2023). Factors affecting dividend policy inconsistency: Evidence from Indonesian manufacturing firms. Emerging Markets Review, 54, 100776.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behaviour, Agency Costs, and Ownership Structure. Journal of Financial Economics, 3(4), 305-360. https://doi.org/10.1016/0304-405X(76)90026-X

Jones, S., & Sharma, R. (2001). The association between the investment opportunity set and corporate financing and dividend decisions: some Australian evidence. Managerial Finance, 27(3), 48–64. https://doi.org/10.1108/03074350110767097

Jory, S. R., Ngo, T., & Sakaki, H. (2017). Institutional ownership stability and dividend payout policy. Managerial Finance, 43(10), 1170–1188. https://doi.org/10.1108/mf-09-2016-0272

Karismawati, N. P. A. & Suarjaya, A. A. G. (2020). The Effect of Dividend Policy, Sales Growth, and Liquidity of the Company's Capital Structure. American Journal of Humanities and Social Sciences Research, 4(5), 25-31.

Khan, M., Yilmaz, R., & Aksoy, T. (2024). The relationship between board demographic diversity and dividend payout policy in Turkey. Emerging Markets Review, 56, 100793.

Kim, S., & Sul, W. (2010). Impact of Foreign Institutional Investors on Dividend Policy in Korea: A Stock Market Perspective. Journal of Financial Management and Analysis, 23(1), 10-26.

Lang, L., & Litzenberger, R. H. (1989). Dividend announcements: Cash flow signaling vs. free cash flow hypothesis? Journal of Financial Economics, 24(1), 181-191. https://doi.org/10.1016/0304-405X(89)90077-9

Lee, C. W., Hsu, H. H., Peng, S. J., et al. (2022). Exploring the Determinants of Company's Dividend Payout Policy in Vietnamese Stock Market. Journal of Applied Finance & Banking, 12(2), 1–25. https://doi.org/10.47260/jafb/1221

Maharani, S., Lukiana, N., & Fauziah, A. (2021). The Effect of Current Ratio, Debt to Equity Ratio, and Return on Assets on Dividend Payout Ratio in IDX High Dividend Index Company 20 (2017-2019). Progress Conference, 4(1), 183-184.

Miller, D., Amore, M. D., Quarato, F., et al. (2022). Family Ownership Dispersion and Dividend Payout in Family Firms. Journal of Family Business Strategy, 13(3), 100436. https://doi.org/10.1016/j.jfbs.2021.100436

Pesaran, M. H. (2006). Estimation and Inference in Large Heterogeneous Panels with a Multifactor Error Structure. Econometrica, 74(4), 967–1012. https://doi.org/10.1111/j.1468-0262.2006.00692.x

Purwanto, I., Sanjaya, I. K. P. W., & Kawisana, P. G. W. P. (2021). The Effect of Debt To Equity Ratio, Total Asset Turnover, Return On Assets And Return On Equity On Dividend Policy In Manufacturing Companies. Journal of Tourism Economics and Policy, 1(2), 41–47. https://doi.org/10.38142/jtep.v1i3.109

Redding, L. S. (1997). Firm Size and Dividend Payouts. Journal of Financial Intermediation, 6(3), 224–248. https://doi.org/10.1006/jfin.1997.0221

Rozeff, M. S. (1982). Growth, beta and agency costs as determinants of dividend payout ratios. Journal of Financial Research, 5(3), 249–259. Portico. https://doi.org/10.1111/j.1475-6803.1982.tb00299.x

Short, H., Zhang, H., & Keasey, K. (2002). The link between dividend policy and institutional ownership. Journal of Corporate Finance, 8(2), 105-122. https://doi.org/10.1016/S0929-1199(01)00030-X

Sinova, B., & Van Aelst, S. (2018). Advantages of M-estimators of location for fuzzy numbers based on Tukey's biweight loss function. International Journal of Approximate Reasoning, 93, 219–237. https://doi.org/10.1016/j.ijar.2017.10.032

Spence, M. (1973). Job Market Signaling. The Quarterly Journal of Economics, 87(3), 355. https://doi.org/10.2307/1882010

Subhi, K. T., & Al Azkiya, A. (2022). Comparison of Cochrane-Orcutt and Hildreth-Lu Methods to Overcome Autocorrelation in Time Series Regression (Case Study of Gorontalo Province HDI 2010-2021). Parameter: Journal of Statistics, 2(2), 30–36. https://doi.org/10.22487/27765660.2022.v2.i2.15913

Wooldridge, J. (2008). Introductory Econometrics, 4th ed. Mason, OH: Western Cengage Learning.

Zahid, R. M. A., Taran, A., Khan, M. K., et al. (2023). ESG, dividend payout policy and the moderating role of audit quality: Empirical evidence from Western Europe. Borsa Istanbul Review, 23(2), 350–367. https://doi.org/10.1016/j.bir.2022.10.012