INTERNATIONAL JOURNAL OF ECONOMICS AND FINANCE STUDIES
Vol: 15 **No:** 04 **Year:** 2023 **ISSN:** 1309-8055 (Online) (**pp.** 26-42) **Doi:** 10.34109/ijefs.202315402
Received: 15.10.2023 | **Accepted:** 03.11.2023 | **Published Online:** 31.12.2023

-RESEARCH ARTICLE-

EFFECTS OF BOARD STRUCTURE ON INFORMATION ASYMMETRY: THE MODERATING ROLE OF EARNINGS MANAGEMENT

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─Abstract─

This study examines the influence of corporate governance factors on information asymmetry, with a specific focus on board structure and its impact on the utilization of earnings management for sustaining corporate performance. The primary objective is to explore the interdependencies among board structure, earnings management, and information asymmetry within publicly listed firms in Thailand. A sample comprising 1,430 firm-years of Thailand publicly listed companies over a 10-year period (2013-2022) was employed. Utilizing a fixed-effects panel data model, financial and market data were collected and analysed. The investigation revealed that board structure variables, including board independence and board meeting frequency, along with return on asset, significantly affected information asymmetry. However, CEO duality did not exhibit a significant

Citation (APA): Chamchoy, S., Samsudin, M. A. M. & Che Pak, N. A. H. (2023). Effects of Board Structure on Information Asymmetry: The Moderating Role of Earnings Management. *International Journal of Economics and Finance Studies, 15*(04), 26-42. doi: 10.34109/ijefs.202315402

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impact. Moreover, earnings management demonstrated a positive association with information asymmetry. Notably, earnings management acted as a moderator in the relationship between board meeting frequency and information asymmetry.

Keywords: Board Structure, Board Independence, Earnings Management, Information Asymmetry, Stock Exchange of Thailand.

INTRODUCTION

Information asymmetry (IA) emerges as a by-product of the disjunction between economic ownership and managerial control within a firm, as posited by agency theory (Jensen & Meckling, 1976). Within the agency theory framework, IA emanates from the principal-agent relationship, where the owners (principals) delegate control of the firm to managers (agents). This divergence from the efficient market assumption of perfect information availability (Stiglitz, 1985) poses a theoretical challenge for market analysis. Managers may exploit IA through the practice of earnings management (EM), manipulating actual earnings or discretionary accruals to enhance the perceived performance of the firm (Schipper, 1989). Consequently, the quest for methods to mitigate information asymmetry in the market becomes imperative, as it holds the potential to enhance market efficiency.

This study explores corporate governance (CG) factors in IA, specifically emphasizing board structure. Robust CG practices are often seen as a safeguard against principal-agent issues, with the board serving as a check on managerial power to mitigate corruption and inaccurate financial reporting (Pargendler, 2016). The relationship between earnings management (EM) and IA is complex. While IA is traditionally seen as causing EM (Richardson, 2000), EM, as an intentional distortion of information, can also contribute to IA (El-Diri, 2018). Hence, a key challenge is discerning the role of EM in IA. An empirical concern is identifying the causes of elevated IA levels in publicly listed firms in Thailand. Previous research in Thai markets indicates that board structure may impact both EM (Nuanpradit, 2019) and IA (Kornlert & Penvutikul, 2022).

Several studies, including those conducted by Kornlert & Penvutikul (2022) and Nuanpradit (2019), have endeavoured to explore the associations between EM and IA. However, the outcomes of these investigations have yielded equivocal results, contributing to a lack of clarity regarding the interrelationship among board structure, EM, and IA within the Thai market. The absence of substantive evidence from Thailand holds significance as the Stock Exchange of Thailand exhibits distinct market efficiency characteristics compared to the settings of previous research. Historically perceived as a market with poor efficiency, Thailand's stock market has undergone gradual improvements between 1975 and 2011 (Khanthavit, Boonyaprapatsara, & Saechung, 2012). Recent examinations of market trends from 2000 to 2019 reveal that while major

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indices such as the SET and SET50 have enhanced weak-form efficiency, overall efficiency remains lacking in an absolute sense. Comprehensive indices have not demonstrated a commensurate level of increased efficiency (Jenwittayaroje, 2021). In summary, market efficiency in Thailand is characterized by partiality, potentially influencing activities such as earnings management and the manifestation of information asymmetry. Consequently, Thailand presents an intriguing opportunity for investigating the nature of information asymmetry within an inefficient yet evolving market.

Hence, the primary aim of this study is to scrutinize the interdependencies among board structure, earnings management, and information asymmetry within publicly listed firms in Thailand. In pursuit of this research objective, two specific research questions are posited.

RQ1. *How do board structure and earnings management contribute to the occurrence of information asymmetry?*
RQ2. *To what extent does earnings management act as a moderating factor in the associations between board structure and information asymmetry?*

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Information Asymmetry

IA denotes the possession of private information by one party involved in a transaction, conferring a strategic advantage in their engagements (Mishra, Heide, & Cort, 1998). In the realm of stock markets, IA assumes significance as the efficacy of market pricing hinges on the disclosure of information pertinent to factors influencing the value of a firm's stocks (Kwakye & Ahmed, 2023). Although some degree of IA is inherent due to the limitations of financial disclosures, elevated IA levels and suboptimal information quality can engender pricing uncertainties and escalate the firm's cost of equity (Kwakye & Ahmed, 2023). Consequently, both financial markets and individual investors, as economic owners of the firm, harbour a preference for diminished IA levels, as this fosters greater transparency and insight into the firm's operations.

Market Signalling

Signalling theory, a branch of communication theory, is specifically focused on the transmission of information between communicators (Bergh et al., 2014). In this framework, communicators, or signallers, disseminate messages pertaining to a particular subject of interest (Connelly et al., 2011). Subsequently, recipients receive, assess, and respond to these signals, often providing feedback or undertaking actions based on their evaluation of the communicated information. Firms employ various forms of mandatory and voluntary disclosures, such as financial statements and environmental impact statements, to mitigate information asymmetry (IA) and convey signals to the market regarding their performance in specific domains (Bergh et al.,

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2014; Connelly et al., 2011). This study explores EM as the primary mechanism through which firms engage in market signalling to communicate their investment potential.

Earnings Management

EM is characterized as the manipulation of a firm's financial statements to achieve specific objectives, such as meeting financial targets (Schipper, 1989). EM practices encompass both real EM, involving the manipulation or even falsification of actual earnings, and accruals-based EM, wherein discretionary accruals are timed to present a desired financial performance (El-Diri, 2018; Kadhim, 2023). Consequently, this study refrains from making assumptions about the motivations driving EM practices, instead concentrating on their impacts. In the realm of signalling theory, EM serves as a signal from a firm's management regarding its present and potential financial outlook. Frequently employed to project an optimistic view of the firm's short-term performance prospects (Habib et al., 2022), this signalling through EM is not necessarily fraudulent but may convey an overly positive perception, especially when the firm's actual performance is suboptimal (Habib et al., 2022).

Board Structure and Information Asymmetry

The initial research inquiry examines the potential impact of board structure on IA. Scholars have extensively explored various board-related factors that could potentially shape the degree of IA (Linck, Netter, & Yang, 2008). This study concentrates on four pivotal factors supported by substantial evidence: board independence, board meeting frequency, CEO duality, and return on assets (ROA).

Board Independence

Board independence pertains to the degree of autonomy exhibited by a firm's Board of Directors from its managerial echelons, encompassing aspects such as external directorship and the interplay between the board and management (Westphal, 1998). Empirical investigations in various contexts have revealed the relevance of board independence in influencing IA. For instance, a study conducted in China identified a negative association between the ratio of outside directors and risk disclosure, indicating that higher (lower) board independence correlated with lower (higher) IA levels (Elshandidy, Neri, & Guo, 2018). Consistent findings emerged in French and UK studies, wherein board independence exhibited a negative relationship with IA (Ajina, Sogne, & Laouiti, 2013; Elbadry, Gounopoulos, & Skinner, 2015). Despite limited scrutiny of board structure variables in Thai studies directly addressing IA, some broader examinations exist. For instance, a study by Kornlert & Penvutikul (2022) investigated board structure's impact on disclosure quality and EM, finding no significant influence of board independence on these factors, though this finding contrasts with earlier research. Another study by Chantapet et al. (2021) explored board structure's role as a determinant of corporate governance, indicating a

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significant effect of independent directors on corporate governance, influencing profitability and capital structure, yet without direct exploration of the board structure-IA linkage. In summary, extant evidence suggests that higher (lower) board independence corresponds to lower (higher) information asymmetry, although certain studies report non-significant effects, and direct investigations of this relationship within the Thai context are lacking. Consequently, the first segment of Hypothesis 1 posits:

H1a. *Board independence is negatively associated with information asymmetry.*

Board Meeting Frequency

Board meeting frequency, denoting the number of times the Board convenes annually, serves as an indicator of the board's diligence and engagement (Vafeas, 1999). Diverse investigations have indicated a negative association between board meeting frequency and IA. In a study encompassing French firms over the period 2008-2010, Ajina, Sogne, & Laouiti (2013) explored various board characteristics as potential influencers of IA, discovering a negative correlation between the number of board meetings and IA. A parallel study involving a sample of UK firms reported a similar negative impact of board meeting frequency on IA (Elbadry, Gounopoulos, & Skinner, 2015). This relationship was corroborated in an African context by Daadaa (2021), whose study was particularly noteworthy for employing multiple IA measures, yielding robust results across diverse measures. Although not uniformly consistent, as evidenced by a unique finding suggesting a widening bid-ask spread around board meetings (Mishra et al., 2009), the prevailing trend in the literature suggests that more frequent (less frequent) board meetings are linked to lower (higher) levels of IA. Despite the absence of direct evidence on the impact of board meeting frequency on IA among Thai firms, studies in other markets support an association. Thus, predicated on extant research, the conditional articulation of the second segment of Hypothesis 1 is posited:

H1b. *Board meeting frequency is negatively associated with information asymmetry.*

CEO Duality

CEO duality denotes a scenario where an individual concurrently occupies the positions of CEO and Chair within a firm, thereby consolidating both managerial control and oversight (Krause, Semadeni, & Cannella Jr, 2014). Krause, Semadeni, & Cannella Jr (2014) underscored the insufficient comprehension of CEO duality as a phenomenon, noting its fluctuating frequency and effects across diverse markets and periods. Consequently, the evidentiary support for any specific impact remains tenuous, a situation persisting due to the often inconclusive or conflicting findings associated with CEO duality. While limited evidence suggests a potential role of CEO duality in information asymmetry (IA), as exemplified by a study on European firms post-mandatory IFRS adoption (2000 to 2014) revealing a positive association with earnings management (Kouaib, Jarboui, & Mouakhar,

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2018), other investigations yield weaker outcomes. For instance, an examination in African markets found that, unlike other board structure factors, CEO duality in isolation was not significantly associated with IA (Daadaa, 2021). Given these disparate findings, the inclusion of CEO duality in the conceptual framework is based on its potential relevance, without assuming a specific impact on IA at this juncture. Consequently, the third component of Hypothesis 1 is articulated as:

H1c. *CEO duality is not associated with information asymmetry.*

Return on Assets (ROA)

ROA quantifies a firm's financial performance relative to the resources (assets) at its disposal during a given financial period (Selling & Stickney, 1989). Frequently utilized as a proxy measure for a firm's financial health, ROA serves as an amalgamation of profitability and managerial efficiency (Fridson & Alvarez, 2021). Despite its widespread use as an indicator of financial condition, it is noteworthy that assets, especially intangible ones like goodwill and intellectual property, are not comprehensively disclosed to investors due to challenges in description and valuation (Haji & Mohd Ghazali, 2018). Empirical investigations in Germany have revealed an inverse relationship between firms with higher levels of intellectual property and intangible assets and their voluntary disclosure practices, suggesting that heightened asset levels correlate with diminished voluntary disclosure and, consequently, elevated information asymmetry (Schiemann, Richter, & Günther, 2015). Although empirical studies may not consistently find a significant association between ROA and the bid-ask spread, a theoretical basis suggests that ROA remains a potential factor in IA. Consequently, the associated hypothesis with this proposition is posited as follows:

Hypothesis 1d: *ROA is positively associated with information asymmetry.*

Earnings Management and Information Asymmetry

The second segment of Research Question 1 (RQ1) delves into the correlation between EM and IA. IA has long been recognized as a factor influencing EM, wherein the absence of sufficient information for investors to scrutinize management reports potentially enables managers to manipulate earnings reporting for personal gain or other motives (Richardson, 2000). Abad et al. (2018), in their examination of Spanish firms, observed that those involved in real EM exhibited higher levels of information asymmetry compared to entities reporting their financial position without manipulation. Another study exploring the behaviour of firms utilizing EM to mitigate year-end earnings boosts suggested that EM deployment heightened information asymmetry in the market (Makarem & Roberts, 2020). Consequently, the relationship between IA and EM is not unidirectional; while IA facilitates EM, the use of EM can also exacerbate information asymmetry. In essence, the available evidence indicates that higher (lower) levels of EM correspond to higher (lower) levels of IA, irrespective of the purpose or strategy employed, be it real EM or accruals-based EM.

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This aligns with the theoretical perspective that EM elevates the information opacity of the firm (Habib et al., 2022). A limited number of studies in the Thai context have linked EM with IA, notably emphasizing the role of "other comprehensive income" (OCI) as an indicator of EM in Thai firms, predominantly utilizing discretionary accruals-based EM (Sabsombat, 2019). Although the inverse relationship between OCI and EM suggests that EM intensifies IA, the authors did not explicitly investigate the EM-IA relationship. Building upon this foundation, the second hypothesis posits:

H2: *Earnings management is positively associated with information asymmetry.*

Board Structure, Earnings Management, And Information Asymmetry

The second research question delves into a relatively underexplored domain, investigating the intricate relationship among board structure, EM, and IA. As elucidated earlier, board structure variables such as board meeting frequency and CEO duality exhibit connections with the incidence of IA, although these associations are not consistently straightforward. Concurrently, EM contributes to IA, a relationship theorized and substantiated as bidirectional through both theoretical frameworks and empirical investigations. This prompts an inquiry into whether EM functions as an intervening variable in the link between board structure variables and IA. No identifiable empirical research has probed this particular relationship. This study contends that EM operates as a moderating force in the relationship between board structure and IA. Specifically, under conditions of heightened EM, which diminishes available information in the market, the impact of board meeting frequency and CEO duality on IA is accentuated. Consequently, in response to this assertion, two components of the study's third hypothesis are posited as:

Hypothesis 3a: *EM moderates the relationship between board meeting frequency and information asymmetry.*
Hypothesis 3b: *EM moderates the relationship between CEO duality and information asymmetry.*

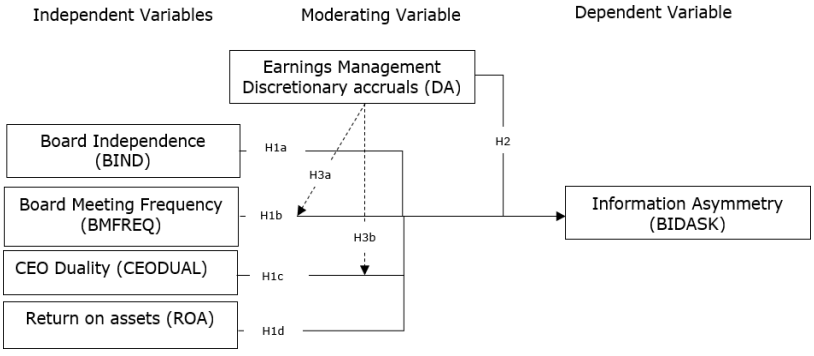

Figure 1: Conceptual Framework.

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RESEARCH METHODOLOGY

The study spanned from 2013 to 2022, focusing on firms listed on the Stock Exchange of Thailand (SET). Initially, 583 firms were selected based on the SET listings at the end of 2022 (Stock Exchange of Thailand, 2024). After screening for the availability of historic Annual Reports (Form 56-1), 23 firms were excluded. Subsequently, screening for sufficient financial statements during the period led to the removal of an additional 417 firms. The final sample comprised 143 firms, resulting in a total of 1,430 firm-years for analysis. Data were sourced from firm financial reports and stock market records over the specified period.

VARIABLE MEASUREMENT

Dependent Variable

The dependent variable, information asymmetry, was operationalized through the bid-ask spread (BIDASK). This metric is postulated as a pertinent proxy for information asymmetry, as an expanded bid-ask spread signifies the dealer's perception that information advantages held by traders are on the rise (Chung et al., 1995; Venkatesh & Chiang, 1986). Consequently, a greater aggregated bid-ask spread indicates a market belief in elevated information asymmetries, whereas a diminished bid-ask spread signifies a belief in reduced information asymmetries (Chung et al., 1995; Venkatesh & Chiang, 1986).

Independent Variables

Board Independence (BIND), a widely utilized structural variable indicative of board quality, can be operationalized through various variables and proxies (Westphal, 1998). While some of these variables are extractable from publicly available information such as financial statements, others, like CEO-board friendships, are not easily discernible. In this study, the outsider ratio, quantifying the ratio of outside directors to the total board members (Westphal, 1998), was employed. This ratio is expressed as a percentage for ease of computation. Board meeting frequency (BMFREQ) serves as a metric of board diligence, recognized for its association with firm performance (Vafeas, 1999). The frequency is quantified as the total number of board meetings in the year corresponding to the annual report. CEO duality (CEODUAL) denotes whether the roles of chairperson and CEO are held by the same individual during the specified period (Krause, Semadeni, & Cannella Jr, 2014). Typically measured as a dummy variable, the same approach was adopted in this study.

Return on Assets (ROA)

The firm's ROA serves as an indicator of managerial efficiency, calculated as the ratio of net profits to total assets (Selling & Stickney, 1989). The standard equation is employed for ROA measurement, and the result is expressed as a percentage.

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Earning Management (EM)

Earnings management was quantified employing the adjusted Jones and Dechow model, specifically focusing on discretionary accruals (Dechow et al., 2012; Dechow, Sloan, & Sweeney, 1995; Jones, 1991).

The in-depth details about variable definition and measurement are summarized in Table 1.

Table 1: Variable Definition and Measurement.

Variable	Description
Information Asymmetry (BIDASK)	The bid-ask spread as a proxy measure for information asymmetry, measured as $BIDASK_{F,t} = \frac{Ask\ Price - Bid\ Price}{(Ask\ Price + Bid\ Price)/2} * 100$ (Choi, Sami, & Zhou, 2010) Where the bid-ask spread of firm F in time t ($BIDASK_{F,t}$) is the difference between ask price and bid price, divided by the average of ask price and bid price.
BIND	Board independence, measured as the outsider ratio: $BIND_{F,t} = \frac{Outside\ directors}{Total\ directors} * 100$ (Westphal, 1998)
BMFREQ	Board meeting frequency, measured as the total reported board meetings for firm *F* in time *t* (Vafeas, 1999)
CEODUAL	CEO Duality, measured as a dummy variable: 1 = CEO and Chairperson roles held by the same individual at firm *F* in time *t*
ROA	Return on assets, measured as $ROA_{F,t} = \frac{Net\ Income}{Total\ Assets} * 100$ (Selling & Stickney, 1989)
Discretionary Accruals (DA)	Earnings management by using discretionary accruals, as specified by the modified Jones (1991) model (Dechow et al., 2012; Dechow, Sloan, & Sweeney, 1995): $DA_{F,t} = \frac{TA_{F,t}}{A_{avg}} - NA_{F,t}$

Model Specification

The panel regression model is formulated in a general manner as follows:

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$$Y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 Z_i + u_{it}$$

Where Z_i denotes unobservable time-invariant heterogeneities inherent to each entity $_i$ (Cheng, 2022). Two distinct assumptions are possible – either every entity $_i$ shares the same Z_i (the fixed effects assumption) or each entity $_i$ possesses a randomly varying Z_i (the random effects assumption) (Cheng, 2022). Given the primary focus of this research on time-varying variables, the fixed effects assumption was adopted (Huntingdon-Klein, 2022). The fixed effects assumption is delineated following the specifications outlined by Cheng (2022):

$$Y_{it} = \beta_1 X_{1,it} + \cdots \beta_k X_{k,it} + \alpha_i + u_{it}$$

Derived from this equation, the research model designed to examine H1 and H2 is formulated as:

$$Y_{BIDASK} = \beta_1 X_{BIND} + \beta_2 X_{BMFREQ} + \beta_3 X_{CEODUAL} + \beta_4 X_{ROA} + \beta_5 X_{DA} + \alpha_i + u_{it}$$

To explore H3, pertinent interaction terms are incorporated:

$$Y_{BIDASK} = \beta_1 X_{BIND} + \beta_2 X_{BMFREQ} + \beta_3 X_{CEODUAL} + \beta_4 X_{ROA} + \beta_5 X_{DA} + \beta_6 X_{DA*BMFREQ} + \beta_7 X_{DA*BIND} + \alpha_i + u_{it}$$

RESULTS AND DISCUSSION

Two regression models were computed. Model 1 exclusively encompasses the main effects of the variables, testing the direct impacts of the five predictor variables on BIDASK, as posited in Hypotheses 1 and 2. Notably, the influence of DA on BIDASK was found to be positive and statistically significant (t = 5.64, p = .000). The regression equation for this model is articulated as:

$$Y_{BIDASK} = -0.272 X_{BIND} + 0.791 X_{BMFREQ} + 0.525 X_{CEODUAL} + 47.443 X_{ROA} + 34.454 X_{DA} + 27.320$$

Meanwhile, Model 2 incorporates the moderating impacts of DABMFREQ and DACEODUAL, introducing additional interaction terms to assess H3a and H3b. In terms of direct effects in this model, the outcomes largely mirrored those of Model 1. The only notable alteration from Model 1 was the negative, albeit non-significant, effect of DA within this model (t = -0.44, p = 0.662). Concerning the interaction effects, DABMFREQ exhibited a significant and positive impact (t = 3.46, p = 0.001). However, the effect of DACEODUAL did not reach statistical significance (t = -1.88, p = 0.060). Significance for variables is acknowledged at p < .05 as shown in Table 2.

$$Y_{BIDASK} = -0.252 X_{BIND} + 0.755 X_{BMFREQ} + 0.525 X_{CEODUAL} + 47.524 X_{ROA} - 5.696 X_{DA} + 3.751 X_{DA*BMFREQ} - 5.155 X_{DA*CEODUAL} + 25.024$$

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Table 2: Regression.

Variable	Model 1			Model 2		
	Coeff.	**t**	***p*-value**	**Coeff.**	**t**	***p*-value**
Constant	27.320	4.66	.000*****	25.024	3.83	.000*
BIND	-0.272	-2.35	.019*****	-0.252	-2.16	.031*
BMFREQ	0.791	2.29	.022*****	0.755	2.18	.029*
CEODUAL	0.525	0.77	.440	0.525	0.77	.440
ROA	47.443	4.35	.000*****	47.524	4.36	.000*
DA*BMFREQ				3.751	3.46	.001*
DA*CEODUAL				-5.155	-1.88	.060
R-squared	.0192			.0265		

Note: *significant at $p < 0.05$ level

The results of the hypotheses are succinctly presented in Table 3. H1a and H1d were substantiated as hypothesized. Contrarily, H1b was refuted as BMFREQ exhibited a positive effect on BIDASK, contrary to the anticipated negative impact. H1c found support, as CEODUAL did not yield a significant effect. Regarding H2, the positive and significant effect of DA on BIDASK, as observed in Model 1, corroborates this hypothesis. However, it is noteworthy that this effect became non-significant when additional interactions were taken into consideration.

The findings pertaining to H1 and H2 bear relevance to Research Question 1, posited as "What roles do (a) board structure and (b) earnings management play in information asymmetry?" These outcomes are intricately linked to the literature review, providing contextualization and potential explanations for their results. The observed impact of board independence on information asymmetry aligns with expectations, considering both the theoretical role of an independent board in managerial oversight (Westphal, 1998) and empirical evidence indicating that a higher proportion of outside directors tends to diminish information asymmetry (Ajina, Sogne, & Laouiti, 2013; Elbadry, Gounopoulos, & Skinner, 2015; Elshandidy, Neri, & Guo, 2018). Consequently, despite a prior study reporting non-significant findings (Kornlert & Penvutikul, 2022), this particular result appears uncontroversial.

The unexpected positive impact of board meeting frequency on information asymmetry is noteworthy, considering that numerous studies have indicated that more frequent board meetings typically result in a reduction of information asymmetry (Ajina, Sogne, & Laouiti, 2013; Daadaa, 2021; Elbadry, Gounopoulos, & Skinner, 2015). Nevertheless, these findings align with a previous study proposing that inside board members might utilize private information, potentially intensifying information asymmetry (Mishra et al., 2009). Although this discovery is anomalous, and the current research was not explicitly designed to explore the interaction of board

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structure factors on information asymmetry, it presents an intriguing facet warranting further investigation.

The lack of significance of CEO duality as a factor in information asymmetry aligns with expectations derived from the literature, as previous studies have not consistently demonstrated a direct impact on information asymmetry itself, although CEO duality might at times influence earnings management (Daadaa, 2021; Kouaib, Jarboui, & Mouakhar, 2018). Within the framework of agency theory, CEO duality could potentially contribute to information asymmetry, given that it represents an elevated level of managerial control over the firm (Jensen & Meckling, 1976). This study posits that the heightened level of control may not be statistically significant, although, as highlighted by Krause, Semadeni, & Cannella Jr (2014), the precise impact of CEO duality remains inadequately understood.

Moreover, the expected positive influence of ROA on information asymmetry aligns with existing literature. As noted by other scholars, despite the apparent informativeness of ROA regarding the firm's performance, it may, in practice, obscure information asymmetries linked to assets, including the impact of intangible assets on the firm's performance (Haji & Mohd Ghazali, 2018). Therefore, while ROA may not consistently emerge as a significant factor, this study contributes to a more nuanced comprehension of its potential influence on performance.

The final inquiry undertaken to address RQ1 examined the impact of EM on IA. This hypothesis stemmed from both theoretical frameworks and empirical evidence, affirming that EM serves as a managerial strategy intentionally veiling information and augmenting the information opacity of the firm, consequently leading to elevated levels of IA (Abad et al., 2018; Habib et al., 2022; Makarem & Roberts, 2020). This study corroborated this theoretical association in an unconventional manner, demonstrating that indeed, EM amplifies the degree of IA, as evidenced by bid-ask prices. Thus, despite the predominant focus on IA as a precursor to EM in most research, this study furnishes evidence supporting the alternative directionality of the relationship.

Regarding moderation effects, the interaction term DABMFREQ exhibited a significant and positive impact on BIDASK, suggesting that the frequency of board meetings heightened the influence of DA on BIDASK. Consequently, H3a was affirmed. Conversely, the effect of DACEODUAL did not yield a significant impact on the relationship between DA and BIDASK. Thus, H3b was not substantiated.

H3 constituted the sole hypothesis directly pertinent to Research Question 2, which inquired, "Does earnings management moderate the relationships between board structure and information asymmetry?" This research question delved into the interplay

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of board structure, EM, and IA. EM served as a moderator for board structure variables, specifically those with varying or inconclusive evidence regarding their impact on IA, namely board meeting frequency and CEO duality. The objective was to discern whether the mixed findings could be attributed to the moderating influence of EM as an unobserved variable. The results indicated no significant interaction of EM with CEO duality, suggesting the insignificance of CEO duality within this set of relationships. However, a positive interaction effect emerged between EM and board meeting frequency on IA. This observation aligns with a previous study that emphasized higher levels of insiders on the board correlating with increased IA during board meetings, implying insider trading based on private information (Mishra et al., 2009). Additionally, it aligns with the notion that board independence extends beyond the mere presence of outsiders, encompassing internal relationships within the board itself {Westphal, 1998 #37. While this relational aspect remains unexplored empirically, it holds potential for enhanced comprehension of the interaction between board structure and EM in shaping IA.

Table 3: Hypothesis Test Outcomes.

Hypothesis	Relationship	Outcome
H1a	BIND → BIDASK (-)	Supported
H1b	BMFREQ → BIDASK (-)	Not supported (+)
H1c	CEODUAL → BIDASK (n.s.)	Supported
H1d	ROA → BIDASK (+)	Supported
H2	DA → BIDASK (+)	Supported
H3a	BMFREQ → DA (Mod) → BIDASK	Supported
H3b	CEODUAL → DA (Mod) → BIDASK	Not supported (n.s.)

CONCLUSION

This study examined board structure, EM, and IA within the SET. The research contributes by elucidating the interactions among board structure, EM, and IA, revealing nuanced contributions of board structure and the moderating influence of EM on these relationships. The study introduces the novel exploration of EM as a moderating variable, shedding light on its potential to explain how board structure impacts firm management. However, limitations include the study's focus solely on the SET during a specific timeframe, potentially limiting generalizability to other markets or periods. Replicating the research in larger markets with diverse conditions could enhance the study's scope and comparability. The findings suggest that EM may play a more pivotal role in efficient markets than previously thought, influencing IA directly and intensifying the effects of other variables. Further research is needed to comprehensively understand this observed impact.

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