Southeast Asian Journal of Economics Vol.13(3), December 2025:
Received: May 25, 2024
Revision: July 30, 2024
Accepted: October 28, 2024

CSR Practice and Asymmetric Information: The ASEAN-5 Experience of Banking Industry

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Abstract

This research explores the relationship between Corporate Social Responsibility (CSR) practices and information asymmetry within the banking sector of ASEAN. Unlike much of the existing literature in accounting and finance, which predominantly concentrates on the Environmentally Sensitive Industry (ESI), this study shifts the focus toward the Socially Sensitive Industry (SSI), presenting a unique and pertinent perspective. The analysis encompasses data from 27 publicly-listed ASEAN-5 banks over the period from 2011 to 2016, yielding a total of 162 bank-year observations for the final sample. Employing a panel regression approach, the study utilizes a fixed-effect model at both the bank and country levels, along with robust standard errors in the analysis. The results reveal that CSR practices, represented through the publication of CSR reports, CSR assurance, and adoption of the GRI framework, have a statistically significant negative association with information asymmetry, as indicated by the market-to-book value and Tobin's Q ratio. The findings underscore the value of voluntary non-financial information as an important additional resource for stakeholders.

Keywords: ASEAN, banks, CSR practices, information asymmetry.

1. Introduction

This research explores the relationship between Corporate Social Responsibility (CSR) practices and the level of information asymmetry among banks in the ASEAN region. The global development of CSR reporting has been noted in the accounting field as an indicator of corporate efforts to support environmental and social welfare in their operational areas. Furthermore, CSR activities and disclosures also function as a means of legitimization, signaling adherence to compliance standards. Predominantly, CSR disclosures are composed of non-financial information, which is considered critical for a wide array of stakeholders (Ackers, 2017). These activities are aimed at balancing stakeholder interests, potentially at the expense of operational profitability. In contemporary corporate environments, stakeholders demand extensive and inclusive data to make well-informed business decisions, with CSR disclosures serving as a key source of this non-financial data. However, there is ongoing contention regarding the authenticity of information in CSR reports, debating whether it is substantial or merely symbolic. Previous research has shown that CSR disclosures can act as a tool for enhancing corporate reputation (Axjonow, Ernstberger, & Pott, 2018), with management often pursuing symbolic rather than substantive objectives. This study aims to investigate whether CSR reporting practices effectively reduce information asymmetry between firms and their stakeholders.

The significance of this study is highlighted by the limited focus in existing literature on CSR reporting within industries that are not environmentally sensitive, here referred to as Socially Sensitive Industries (SSIs). KPMG (2017) reports that non-financial reporting is increasingly prevalent within the banking sector, with a growing number of institutions beginning to disclose non-financial information publicly. Research by Caby, Ziane, and Lamarque (2020) also looked at the voluntary disclosure of non-financial data in the banking sector, suggesting that such disclosures signal a firm's commitment to societal and environmental responsibilities. Additionally, a study by Rusmanto and Williams (2015) assessed CSR reporting relative to existing regulations and policies in a specific country, finding that CSR disclosures by publicly listed companies are well-received by the public, particularly when firms demonstrate clear CSR policies and implementation. In a more focused inquiry, Wu and Shen (2013) analyzed the presence of CSR disclosures in the banking sector and explored the motivations behind such disclosures by management. They concluded that long-term strategic considerations are the primary drivers behind a firm's engagement with CSR activities. The durability of integrated reporting supports well-informed decision-making in both the short and long term.

Furthermore, previous studies indicate that information asymmetry is influenced by the availability of pertinent data in the market, encompassing both financial and non-financial information (Cho, Lee, & Pfeiffer, 2013). Literature suggests that non-financial data should be considered by firms as it provides value-relevant, incremental information to stakeholders and market participants. Recent studies on non-financial information, particularly within CSR contexts, have documented that firms in environmentally and socially sensitive industries place a greater emphasis on sustainability issues. Conversely, firms in industries characterized as non-sensitive are less likely to prioritize CSR disclosures due to their voluntary nature (Usman, 2020). Currently, non-financial information disclosed by management is deemed essential for stakeholders, with institutional investors particularly favoring firms that provide extensive non-financial disclosures in their reports. Thus, a study by Hickman (2018) revealed that a primary motive for disclosing CSR information publicly is to mitigate the impact of information asymmetry.

To date, there remains a significant gap in the understanding of how firms in less environmentally sensitive sectors manage their CSR initiatives. This gap is largely attributed to the voluntary nature of such disclosures and the constraints related to data availability. While many nations still treat CSR practices as optional, regulatory frameworks in regions like Europe and North America have evolved to mandate the disclosure of non-financial information. Specifically, the European Directive, enacted in 2018, mandates that companies in Europe publicly disclose non-financial information, such as CSR reports. This mandate is expected to enhance both the volume and the quality of the information provided, thereby aiding stakeholders in making more informed decisions. Management teams carry the significant burden of providing comprehensive disclosures, including both financial and non-financial details, to stakeholders. However, this trend of enhanced disclosure has not been universally adopted across Asia, where only a select group of companies, recognizing the potential benefits, choose to engage in non-financial reporting.

This research seeks to determine the efficacy of CSR reporting in bridging the information asymmetry between companies and their stakeholders. Utilizing data from the ASEAN-5 region, this study examines whether CSR activities, as evidenced through CSR reports, external CSR assurance, and adoption of the Global Reporting Initiative (GRI) framework, correlate with reduced information asymmetry in five ASEAN banks. The regulatory landscape regarding CSR in ASEAN-5 countries varies, with Indonesia implementing Regulation No. 40/2007, which governs voluntary CSR disclosures, and similar but distinct laws existing in the Philippines, Singapore, and Vietnam. Contemporary literature suggests that CSR disclosures, whether voluntary or mandatory, are considered incrementally valuable by stakeholders. This analysis explores the dynamics between CSR practices and information asymmetry within the banking sector of five key Southeast Asian countries, specifically examining elements like CSR assurance, performance, and the impact of public awareness on financial metrics such as the market-to-book value (MBV) ratio and Tobin's Q.

The dataset for this study is sourced from the Thomson Reuters EIKON and ASSET4 databases, encompassing all operational banks across Indonesia, Malaysia, Thailand, the Philippines, and Singapore. Of the 84 publicly listed banks analyzed across these countries, 27 are actively engaged in CSR practices. This study posits that the optional nature of CSR reporting contributes to the varied engagement levels observed. The empirical evidence suggests that CSR practices, as manifested in CSR reporting, assurance, and GRI framework adoption, generally inversely correlate with indicators of information asymmetry. A further robustness check, incorporating a one-year lag in CSR practices, aligns with the primary findings, although aggregating the indicators of information asymmetry results in statistically insignificant outcomes. This paper aims to deepen the discourse around CSR and information asymmetry, building on previous studies, such as that of Lopatta, Buchholz, and Kaspereit (2016), and assesses the broader implications of CSR engagement on corporate transparency and stakeholder trust.

This article makes a threefold contribution to the existing body of knowledge. First, it evaluates the link between CSR practices and information asymmetry, grounded in the premise that asymmetry within agency theory may impair organizational agility and decision-making speed. Understanding how management's CSR activities influence information asymmetry is vital. Second, the study assesses how the impact of CSR practices on information asymmetry varies between contexts with high and low asymmetry, exploring the value relevance of these practices. Third, this work pioneers an exploration of the interaction between CSR practices and information asymmetry, specifically within the ASEAN region. Cho et al. (2013) identified a negative correlation between CSR performance and the bid-ask spread, used as a measure of information asymmetry, noting that this relationship is less pronounced in entities with substantial institutional investment. This suggests that well-informed investors might leverage CSR disclosures for their advantage, highlighting the positive role of CSR in diminishing the information gap faced by less informed investors and stakeholders.

Differing from Cho et al. (2013), this study shifts focus from CSR performance's direct impact on bid-ask spreads to its broader association with information asymmetry as indicated by MBV and Tobin's Q ratios. The following arguments are presented in order to indicate information asymmetry using the MBV and Tobin's Q ratio: (1) The MBV ratio is a financial ratio that compares the market value of a company's stock with the book value of its equity. A notable discrepancy between the two may be indicative of information asymmetry, wherein investors may hold disparate perspectives on the intrinsic value of the company in comparison to the value reflected in the financial statements. (2) Market value is a function of investors' perceptions regarding the company's future prospects, encompassing expectations about earnings, risk, and growth. A significant discrepancy between the market value and the book value may indicate that the available information is not fully or evenly known to all parties. (3) Tobin's Q value may reflect the efficiency and profitability of the company. Banks with high Tobin's Q may possess competitive advantages or intangible assets that are not fully reflected in the financial statements, thereby reflecting information asymmetry. And (4) Changes in Tobin's Q may signal to investors about changes in market conditions or expectations about the company's future, which may not be fully based on public information. A number of previous studies have employed the use of MBV and Tobin's Q as a means of measuring information asymmetry, e.g., studies conducted by Abosede and Oseni (2011), Jabeen, Malik, Zaib, Saleem, and Jabeen (2021), Zaigham, Wang, and Ali (2019), and Cai, Liu, Qian, and Yu (2015).

The structure of this paper is comprehensive, beginning with an introduction that sets the stage by outlining the background, aims, and significance of the research. Following this, a detailed literature review and hypothesis formulation section draw on relevant previous studies addressing CSR practices and information asymmetry. The methodology section describes the data collection, sample selection, and regression analysis techniques used to test these hypotheses. This is followed by a results and discussion section that delves into the findings and their implications. The paper concludes with a summary of the key insights and contributions, providing a synthesis of the research outcomes and their broader implications.

2. Literature Review and Hypothesis Development

2.1 CSR Reports and Information Asymmetry

The first hypothesis posits that the existence of CSR reports is inversely related to information asymmetry. According to research conducted by Kim, Kim, and Qian (2018), public CSR disclosures can diminish potential corporate risks, suggesting that a firm's dedication to CSR transparency may alleviate poor reporting practices, thereby reducing information asymmetry among investors. The literature supports the notion that CSR reports contribute to lessening informational disparities, not only between a company and its investors but also between informed and uninformed market participants. Companies are often faced with the decision of whether to present this information in standalone reports or as part of their annual financial statements (Cho, Michelon, Patten, & Roberts, 2015).

Recent trends indicate a surge in the publication of CSR reports globally. A 2017 KPMG survey on corporate responsibility reporting highlighted a substantial increase in the number of CSR reports issued by the G250 companies, showing a 93% rise since 1993, and a 75% increase among N100 companies worldwide over the same period. Despite the growing volume of CSR disclosures, critiques within the social accounting sphere have increasingly scrutinized how these reports are presented. Beyond their role in enhancing transparency and mitigating information asymmetry, some critiques, such as those by Unerman and O'Dwyer (2007), argue that CSR reports may be strategically used as public relations tools to shape stakeholder perceptions and secure their approval, which is crucial for business continuity. Additionally, Thorne, Mahoney, and Manetti (2014) highlighted concerns regarding the motivations behind CSR disclosures, suggesting they may also serve to manage political and media scrutiny.

Despite these critiques, the dissemination of CSR information holds significant implications for stakeholders' understanding of a company's commitment to CSR practices. Studies by Jo and Kim (2007; 2008) indicate that firms that voluntarily enhance the transparency of their CSR activities tend to diminish information asymmetry with external parties. Further supporting evidence from Cui, Jo, and Na (2018) underscores CSR's role in elevating the quality of corporate disclosures, thus reducing information asymmetry. These findings emphasize the responsibility of corporate managers to produce high-quality CSR disclosures while considering the potential impact on their firms' reputations.

H1: There is a negative relationship between CSR reports and information asymmetry.

2.2 CSR Assurance and Information Asymmetry

Hypothesis two is formulated on the premise that the implementation of CSR assurance is inversely related to information asymmetry. This hypothesis begins with the understanding that merely publishing a CSR report may not be adequate, as such practices are susceptible to various forms of misuse, such as impression management (Rutherford, 2003), the portrayal of a hypocritical stance (Michelon, Pilonato, Ricceri, & Roberts, 2016), or the use of CSR disclosures as means of camouflaging or greenwashing (Moneva, Archel, & Correa, 2006). These actions may serve to manage reputational risks (Bebbington, Larrinaga, & Moneva, 2008) or simply to fulfill CSR requirements superficially (Junior & Best, 2017), undermining the authentic purpose of CSR as a source of valuable information.

Given that such misappropriations reflect opportunistic behaviors by firms, the credibility, reliability, and trustworthiness of CSR reports may be significantly compromised (Hodge, Subramaniam, & Stewart, 2009; Briem & Wald, 2018). This could lead to deliberate obfuscation of information, particularly negative news, making it less detectable to stakeholders, thereby increasing information asymmetry (Neu, Warsame, & Pedwell, 1998; Rutherford, 2003; Muslu, Mutlu, Radhakrishnan, & Tsang, 2019).

Further literature insights from Bagnoli and Watts (2017) suggest that companies are acutely aware of their actual CSR engagement levels. Often based on managerial discretion, firms may selectively disclose information that portrays them favorably, while stakeholders are typically limited to the information presented in public CSR reports. To mitigate the potential for information asymmetry between the preparers (companies) and the users (stakeholders) of these reports, it is advocated that firms legitimize their CSR disclosures by obtaining independent third-party assurance (Mercer, 2004; Moroney, Windsor, & Aw, 2011; Cho, Michelon, Patten, & Roberts, 2014; Romero, Fernandez-Feijoo, & Ruiz, 2014). This assurance process involves rigorous scrutiny, where a company's CSR report undergoes evaluation and verification by the assuring body, which could be professional accountants or consultancy firms specialized in environmental and CSR consulting (Deegan, Cooper, & Shelly, 2006; Simnett, Vanstraelen, & Chua, 2009; Moroney et al., 2011). This commitment to verified CSR reporting is regarded by stakeholders as a sign of the firm's credibility and the reliability of its CSR information, enhancing the value relevance of the CSR reports and potentially diminishing information asymmetry. Thus, the second hypothesis is structured to explore the impact of CSR assurance on reducing informational disparities.

H2: There is a negative relationship between CSR assurance and asymmetry information.

2.3 GRI Adoption and Information Asymmetry

Hypothesis three suggests that the adoption of the GRI standards is inversely related to information asymmetry. Established as a global framework, the GRI enables corporations to report on various environmental, social, and governance

(ESG) concerns (GRI, 2014). Given that CSR reporting is often voluntary and lacks regulatory enforcement in some regions, firms frequently opt for non-mandatory frameworks like GRI to manage their disclosure of non-financial data. Several frameworks available for such disclosures include the United Nations Global Compact (UNGC), the IFC Sustainability Framework, and others noted by Pope and Wæraas (2016). In the United States, the Sustainability Accounting Standards Board (SASB) formulates industry-specific ESG disclosure standards (Khan, Serafeim, & Yoon, 2016). Among these, GRI is recognized globally, with its adoption by thousands of organizations across more than 90 countries (Brown, de Jong, & Levy, 2009; Hahn & Lülfs, 2014). GRI's standards are continuously refined and integrate stakeholder feedback to ensure that the non-financial metrics it proposes accurately quantify and justify non-financial information, leading to more measurable and comparable data sets (Mahoney, Thorne, Cecil, & LaGore, 2013).

Despite its widespread acceptance, GRI's adoption has not been without criticism. For instance, it has been suggested that GRI can facilitate selective reporting or "cherry-picking," where firms might focus on specific CSR aspects to the exclusion of others, thus undermining the balance in CSR reporting (Moneva et al., 2006). Another issue involves the "tick-box technique," where companies comply with codes superficially without substantial engagement (Michelon et al., 2016). Nevertheless, firms that implement GRI are often perceived as more committed to CSR than those that do not. It is argued that GRI compliance enhances the relevance of disclosed information to stakeholders by providing metrics that are both measurable and comparable across the industry. This could potentially enable stakeholders to better understand the reported information and its relevance, thus reducing information asymmetry. The structured and standardized nature of GRI disclosures could thus lead to more value-relevant information for stakeholders and subsequently decrease information asymmetry.

H3: There is a negative relationship between GRI adoption and information asymmetry.

3. Methods

3.1 Data and Sample

This study investigates CSR reporting practices within the banking sector across ASEAN-5 nations. The primary data source for CSR and sustainability reports was the Corporate Register database (http://www.corporateregister.com), which is widely acknowledged by scholars, e.g., Simnett et al. (2009), as the most exhaustive repository of CSR and sustainability documentation globally. When reports were unavailable in the Corporate Register, the official websites of the respective banks served as an alternative source. The empirical analysis underpinning the hypotheses drew on a dataset consisting of 162 bank-year observations from 2011 to 2016, involving 27 publicly traded banks distributed across five ASEAN countries. These included five banks from Indonesia, eight from Malaysia, three from Singapore, four from the Philippines, and seven from Thailand.

Table 1. Sample selection procedures

	Sample construction procedures	Number of Banks	Bank-year observations	%
1	Banks listed in the banking sector of IDX, BM, SES, PSE, and SET.	84	504	100
2	Banks without CSR report data as covered by ASSET4 and Corporate Register database.	57	342	67.85
3	Banks with complete observation and financial fundamental data (control variables).	27	162	32.15

Note: IDX (Indonesia stock exchange), BM (Bursa Malaysia (Malaysia stock exchange), SES (Singapore stock exchange), PSE (the Philippine stock exchange), and SET (Thailand stock exchange).

3.2 Regression Model

To explore the connection between CSR practices and information asymmetry, this study employs panel data regression analysis, applying various dependent variables to serve as proxies for information asymmetry. A specific regression model has been developed to assess the stipulated hypothesis.

$$MBV_{i,t} = \alpha + \beta_1 CSR\_REP_{i,t} + \beta_2 CSR\_ASS_{i,t} + \beta_3 GRI_{i,t} + + \beta \sum Controls_{i,t} + \gamma \sum Year + \varepsilon_{i,t} \quad (1)$$

$$TOBIN'S\_Q_{i,t} = \alpha + \beta_1 CSR\_REP_{i,t} + \beta_2 CSR\_ASS_{i,t} + \beta_3 GRI_{i,t} + \beta \sum Controls_{i,t} + \gamma \sum Year + \varepsilon_{i,t} \quad (2)$$

To empirically assess information asymmetry, this study utilizes two surrogate indicators: MBV and Tobin's Q ratio (TOBIN'S_Q). The application of MBV and Tobin's Q enables researchers to ascertain the extent to which information held by a company's internal parties differs from that accessible to the market in general.
This is a particularly pertinent issue in the banking industry, where the accurate measurement of information pertaining to asset quality, credit risk, and management is often challenging for external parties.

To investigate whether the disclosure of CSR information is inversely related to information asymmetry, the research examines several key factors. Three proxies for CSR practices are adopted as the principal independent variables. The first, the availability of a CSR report (CSR_REP), considers whether CSR information is provided in a standalone report or within a dedicated section of the annual report. Secondly, CSR assurance (CSR_ASS) is analyzed, which represents the external verification of CSR disclosures by an independent third party, such as an accounting or consulting firm. The third variable, the GRI, pertains to the adoption of this specific framework by companies for their CSR reporting. The three main independent variables are represented by dummy values, as recommended by previous studies, including Dhaliwal, Li, Tsang, and Yang (2011), Simnett et al. (2009), and Michelon, Pilonato, and Ricceri (2015). According to Dhaliwal et al. (2011), firms that initiate CSR disclosures subsequently experience a reduction in the cost of equity capital, indicating a decrease in information asymmetry; in their research, a dummy variable was used as a proxy for the availability of CSR reports. Furthermore, Simnett et al. (2009) found that the presence of assurance (0;1) on sustainability reports is associated with higher firm valuation, as measured by Tobin's Q, suggesting reduced information asymmetry. Similarly, Michelon et al. (2015) provided evidence that GRI adoption is positively correlated with improved firm performance and market valuation, implying enhanced information transparency. Based on these findings, we employ three dummy variables to measure CSR practices in the ASEAN-5 context. The use of dummy variables (i.e., the availability of CSR reports, assurance reports, and GRI adoption) simplifies the model and yields clear, interpretable results regarding the presence or absence of these factors and their impact on information asymmetry.

Additionally, to address potential endogeneity issues, such as correlated omitted variable bias that could influence the accuracy of the results, control variables are incorporated. These controls are derived from firm-specific accounting data, including size, leverage (LEV), return on equity (ROE), non-performing loans (NPL), and net interest margin (NIM). Detailed descriptions of the operational definitions for these variables are provided in Table 2.

3.3 Operational Definition

This research employs diverse surrogate indicators for each principal dependent and independent variable under investigation. Furthermore, the incorporation of control variables plays a crucial role in addressing potential endogeneity issues, particularly concerning correlated omitted variable bias. Detailed definitions of these variables are provided below.

Table 2. Definition of variables employed in the analysis

No	Variables	Measures	Source
1	**MBV** (Market-to-book value ratio)	Market value / Book value	EIKON
2	**TOBIN'S_Q** (Tobin's Q ratio)	(Total asset - Book value + Market value) / Total asset	EIKON
3	**CSR_REP** (CSR report)	1 if firm published a stand-alone, or CSR information in the annual report; 0 otherwise	Corporate Register

4	**CSR_ASS** (CSR assurance)	1 if firms assured their CSR reports; 0 otherwise	ASSET4,
5	**GRI** (Global Reporting Initiative)	1 if CSR reports adopt GRI disclosure framework; 0 otherwise	ASSET4
6	**SIZE** (Firm size)	Natural Logarithm of total asset	EIKON
7	**LEV** (Leverage)	Total debt / Total asset	EIKON
8	**ROE** (Return on equity)	Net income / Shareholder equity	EIKON
9	**NPL** (Non-performing loan)	Non-performing loan / Total loan	EIKON
10	**NIM** (Net interest margin)	(Investment income – Interest expenses) / Average earning asset	EIKON

4. Results and Discussion

4.1 Descriptive Statistics

The section of results and discussion contains the empirical descriptive outputs, correlation tests results, panel data regression test, and its interpretation. At the first stage, after collecting the sample based on the purposive sampling and selection procedure criteria, the sample is further elaborated into descriptive statistics output as follows.

Table 3. Descriptive statistics

Variables	**obs**	**mean**	**sd**	**25th percentile**	**median**	**75th percentile**	**min**	**max**
Dependent variables								
MBV	162	1.63	0.60	1.24	1.50	1.87	0.73	3.78
TOBIN'S_Q	162	1.42	0.04	1.39	1.42	1.45	1.32	1.56
Independent variables of interest								
CSR_REP	162	0.63	0.48	0	1	1	0	1
CSR_ASS	162	0.14	0.34	0	0	0	0	1
GRI	162	0.41	0.49	0	0	1	0	1
Control variables								
SIZE	162	9.27	1.23	8.45	8.89	9.41	7.56	12.01
LEV	162	50.66	14.93	42.26	53.53	61.73	8.27	89.91

Variables	obs	mean	sd	25^{th} percentile	median	75^{th} percentile	min	max
ROE	162	15.06	5.32	11.49	14.01	17.46	1.20	34.89
NPL	162	7.34	1.28	6.37	7.00	7.75	5.58	10.42
NIM	162	3.53	1.92	2.27	3.04	3.80	1.10	10.10

Table 4. CSR distribution by year

Year	CSR Report			Assurance			GRI		
	No	Yes	Total	No	Yes	Total	No	Yes	Total
2011	13	14	27	26	1	27	21	6	27
2012	11	16	27	25	2	27	18	9	27
2013	9	18	27	23	4	27	17	10	27
2014	9	18	27	23	4	27	15	12	27
2015	9	18	27	22	5	27	14	13	27
2016	9	18	27	21	6	27	11	16	27
Total	60	102	162	140	22	162	96	66	162

Table 5. CSR distribution by countries

Country	CSR Report			Assurance			GRI		
	No	Yes	Total	No	Yes	Total	No	Yes	Total
Indonesia	1	29	30	20	10	30	16	14	30
Malaysia	21	27	48	43	5	48	35	13	48
Singapore	15	3	18	18	0	18	15	3	18
The Philippines	14	10	24	15	9	24	14	10	24
Thailand	9	33	42	35	7	42	16	26	42
Total	60	102	162	131	31	162	96	66	162

Table 3 outlines the descriptive statistical analysis for each variable, including measures such as the mean, standard deviation, 25th percentile, median, 75th percentile, and the minimum and maximum values. For clarity in data presentation, the descriptive statistics are segmented into three Tables. Table 3 details the aggregated characteristics of the dataset, covering dependent variables, primary independent variables, and control variables. Table 4 illustrates the yearly distribution of CSR practices, while Table 5 provides an analysis of CSR practices by country.

In more detail, Table 3 reports that the average mean value of the first proxy for information asymmetry (MBV) is 1.63. The second proxy for information asymmetry (TOBIN'S_Q) has an average mean value of 1.42. Concerning CSR practices, the first proxy (CSR_REP) shows that 63% of the sample disclose their CSR information publicly, whether through standalone reports or within the annual report. The second proxy (CSR_ASS) reveals that only 14% of these reporting banks have their CSR reports externally assured by a third party. The third proxy (GRI) indicates that approximately 41% of the banks that disclose CSR information follow the GRI reporting framework.

Table 4 highlights a consistent increase in public CSR disclosures by ASEAN banks over the years. In 2011, 14 out of 27 banks disclosed their CSR reports publicly, increasing to 16 in 2012, with a steady rise to 18 banks engaging in CSR reporting from 2013 to 2016. Moreover, the practice of having CSR reports externally assured has also gradually increased, starting with just one bank in 2011 and rising to six by 2016. The adoption of GRI frameworks among these banks has similarly increased during this period. Table 5 categorizes the data by country, following a similar analytical approach as Table 4. Subsequent analyses will include a correlation study to further explore these relationships.

4.2 Correlation analysis

The correlation on each variable of interest is elaborated in the Pearson correlation analysis, as illustrated in Table 6.

Table 6. Pearson correlation among the variables

	Variables	1	2	3	4	5	6	7	8	9	10
1	MBV	1									
2	TOBIN'S_Q	0.336***	1								
3	CSR_REP	0.203**	-0.179*	1							
4	CSR_ASS	-0.068	-0.116	0.304***	1						
5	GRI	-0.026	-0.200*	0.636***	0.478***	1					
6	SIZE	0.374***	-0.121	0.424***	0.310***	0.157*	1				
7	LEV	-0.512***	0.022	-0.136	-0.075	-0.019	-0.585***	1			
8	ROE	0.628***	0.007	0.294***	-0.018	-0.040	0.433***	-0.322***	1		

9	NPL	0.303***	-0.073	0.459***	0.335***	0.215**	0.977***	-0.527***	0.370***	1	
10	NIM	0.348***	-0.122	0.368***	0.318***	0.191*	0.860***	-0.424***	0.360***	0.853***	1

Note: Asterisks ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 6 presents the results from the correlation analysis. This analysis includes two dependent variables representing proxies for information asymmetry: MBV and Tobin's Q (TOBIN'S_Q). Additionally, three main independent variables serve as proxies for CSR practices: CSR Report (CSR_REP), CSR Assurance (CSR_ASS), and GRI adoption.

The analysis reveals that the first independent variable, CSR_REP, demonstrates a positive ($r= 0.203$) and statistically significant ($p < 0.01$) correlation with MBV. Conversely, CSR_REP exhibits a negative ($r= -0.179$) and statistically significant ($p < 0.1$) correlation with TOBIN'S_Q. The second independent variable, CSR_ASS, displays a negative correlation with both MBV ($r= -0.068$) and TOBIN'S_Q ($r= -0.116$), though these relationships are not statistically significant ($p > 0.01$). Lastly, GRI, the third independent variable, shows a negative correlation with MBV ($r= -0.026$) that is not statistically significant ($p > 0.1$). However, the correlation between GRI and TOBIN'S_Q is statistically significant at the 10% level ($p < 0.1$).

4.3 Hypothesis Testing

In the main analysis, we perform a direct OLS test on two different statistical models. Each model accommodates the empirical test between CSR practices and information asymmetry. However, we broke down the test into two different models as we utilize two proxies of information asymmetry. The complete OLS test is available as follows.

Table 7. Panel data regression analysis

$$MBV_{i,t} = \alpha + \beta_1 CSR\_REP_{i,t} + \beta_2 CSR\_ASS_{i,t} + \beta_3 GRI_{i,t} + \beta \sum Controls_{i,t} + \gamma \sum Year + \varepsilon_{i,t} \tag{1}$$

$$TOBIN'S\_Q_{i,t} = \alpha + \beta_1 CSR\_REP_{i,t} + \beta_2 CSR\_ASS_{i,t} + \beta_3 GRI_{i,t} + \beta \sum Controls_{i,t} + \gamma \sum Year + \varepsilon_{i,t} \tag{2}$$

VARIABLES	Expected Direction	(1) MBV	(2) TOBIN'S_Q
CSR_REP	-	-0.8500***	-0.0272**
		[-2.972]	[-2.720]
CSR_ASS	-	-0.2630	-0.0188
		[-1.252]	[-1.606]
GRI	-	-0.9100***	-0.0422***
		[-4.292]	[-3.701]
SIZE	+/-	-2.008***	-0.0760***
		[-5.441]	[-5.801]
LEV	+/-	0.0092	0.00000847
		[1.373]	[0.042]
ROE	+/-	0.0160	0.0027***
		[1.103]	[3.375]
NPL	+/-	1.5100***	0.0659***
		[3.942]	[5.069]
NIM	+/-	0.0970*	0.0009
		[1.901]	[0.290]
Constant		6.5240***	1.5660***
		[6.985]	[35.590]
Year fixed-effect		Yes	Yes
Country fixed-effect		Yes	Yes
SE clustered		Yes	Yes
Observations		162	162
R-squared		0.453	0.298

Note: *** $p<0.01$, ** $p<0.05$, and * $p<0.1$ indicate statistical significance at the 1%, 5%, and 10% levels, respectively (two-tailed). t values are available in parentheses.

Table 7 displays the statistical output of our panel data regression analysis, which empirically tests the association of CSR practices (CSR_REP, CSR_ASS, and GRI) on two proxies of information asymmetry (MBV and TOBIN'S_Q). As we have three hypotheses, we draw our results sequentially. *H1* conjectures that there is a negative relationship between CSR_REP and information asymmetry (MBV and

TOBIN’S_Q). The obtained results show that CSR_REP is negatively and significantly associated with two proxies of information asymmetry. More precisely, the coefficient value of CSR_REP is reported negative (β= -0.8500) and statistically significant ($p < 0.05$) when we run a direct test on MBV. The same result is found in the direct test of CSR_REP on TOBIN’S_Q (β= -0.0272) with a statistically significant value ($p < 0.05$). These results indicate that *H1* is statistically supported.

In *H2*, we develop a notion in which CSR_ASS is negatively related to information asymmetry. To empirically prove this notion, we run Model 1 and Model 2. The result of Model 1 (Column 1) shows that CSR_ASS is negatively associated (β= -0.2630) with MBV but statistically insignificant ($p > 0.1$). To further confirm this result, we also run a direct test of CSR_ASS on TOBIN’S_Q. The obtained output shows that there is a negative but statistically insignificant association between CSR_ASS and TOBIN’S_Q. These results indicate that the coefficient values of CSR_ASS are negative to information asymmetry, but these results do not provide us with a convincing estimate, prompting us to reject *H2*. Therefore, we infer that *H2* is inconclusive and statistically unsupported.

Furthermore, the presumption of *H3* notes that there is a negative relationship between GRI adoption and information asymmetry. In this regard, we run a direct test between GRI and MBV (Model 1). The result shows that there is a negative (β= -0.9100) and significant ($p < 0.01$) association between GRI and MBV. In Model 2, we also run a direct test between GRI and TOBIN’S_Q. The obtained empirical result shows that GRI is negatively (β= -0.0422) and statistically ($p < 0.01$) associated with TOBIN’S_Q. Given these results, we infer that *H3* is statistically supported. To further confirm that the obtained results in our main analysis are robust, we further proceed with a robustness check.

4.4 Robustness Check

After running the main analysis, we proceed with a robustness check. This robustness check aims to investigate whether a different way of variable measurement provides us with a sound and robust empirical result. We also conjecture that the reported information in the previous year may relate to the current situation of information asymmetry. Therefore, this notion indicates that non-financial information (e.g., CSR reporting) with respect to its CSR practices needs a time lag to be fully reflected in the proxies of information asymmetry. To empirically test this notion, we run OLS panel data analysis with one-year independent lagged variables. In this regard, our presumption of the current variation of information asymmetry (MBV and TOBIN'S_Q) is the function of CSR practices in the previous year (t-1), as illustrated in Table 8.

Table 8. Robustness Check

$$MBV_{i,t} = \alpha + \beta_1 CSR\_REP_{i,t-1} + \beta_2 CSR\_ASS_{i,t-1} + \beta_3 GRI_{i,t-1} + \beta \sum Control_{i,t-1} + \gamma \sum Year + \varepsilon_{i,t} \quad (1)$$

$$TOBIN'S\_Q_{i,t} = \alpha + \beta_1 CSR\_REP_{i,t-1} + \beta_2 CSR\_ASS_{i,t-1} + \beta_3 GRI_{i,t-1} + \beta \sum Control_{i,t-1} + \gamma \sum Year + \varepsilon_{i,t} \quad (2)$$

VARIABLES	Expected Direction	(1) MBV	(2) TOBIN'S_Q
$CSR\_REP_{i,t-1}$	-	-0.8040***	-0.0301***
		[-2.697]	[2.663]
$CSR\_ASS_{i,t-1}$	-	-0.2640	-0.0305**
		[1.118]	[-2.276]
$GRI_{i,t-1}$	-	-0.8990***	-0.0365***
		[-3.841	[-2.683]
$SIZE_{i,t-1}$	+/-	-1.8420***	-0.0713***
		[-2.141]	[-5.484]
$LEV_{i,t-1}$	+/-	0.0087	-0.00000702
		[1.208]	[-0.035
$ROE_{i,t-1}$	+/-	0.0069	0.0022**
		[0.466]	[2.444]
$NPL_{i,t-1}$	+/-	1.4270***	0.0635***
		[3.532]	[4.738]
$NIM_{i,t-1}$	+/-	0.0657	0.0001

VARIABLES	Expected Direction	(1) MBV	(2) TOBIN'S_Q
		[1.225]	[0.031]
Constant		5.863***	1.553***
		[5.916]	[35.056]
Year fixed-effect		Yes	Yes
Country fixed-effect		Yes	Yes
SE clustered		Yes	Yes
Observations		135	135
R-squared		0.451	0.303

Note: *** p<0.01, ** p<0.05, and * p<0.1 indicate statistical significance at the 1%, 5%, and 10% levels, respectively (two-tailed). t values are available in parentheses.

Table 8 provides robustness check results by employing one-year independent lagged variables (t-1). As previously done in the main analysis, we also perform the same procedure for the OLS test. In this step, we would like to draw our analysis using independent lagged variables. Specifically, we proceed with the test of *H1*. In *H1*, we presume that there is a negative relationship between CSR_REP and information asymmetry (MBV and TOBIN'S_Q). The obtained direct test using $CSR\_REP_{i,t-1}$ on MBV and TOBIN'S_Q indicates a negative and statistically significant association. The result of the robustness check is consistent with our main analysis, in which CSR_REP is negatively associated with MBV and TOBIN'S_Q, either in the contemporaneous model or the one-year lagged model.

In *H2*, we conjecture that there is a negative relationship between CSR_ASS and information asymmetry (MBV and TOBIN'S_Q). As can be seen in Table 8, the test using $CSR\_ASS_{i,t-1}$ shows that there is a negative association between $CSR\_ASS_{i,t-1}$ – MBV and $CSR\_ASS_{i,t-1}$ – TOBIN'S_Q. However, in these negative associations, only the relationship between $CSR\_ASS_{i,t-1}$ and TOBIN'S_Q shows a significant relationship, while the direct test of $CSR\_ASS_{i,t-1}$ on MBV is statistically insignificant. In this regard, we recall that our main analysis using contemporaneous variables shows an inconclusive relationship between CSR_ASS and information asymmetry (MBV and TOBIN'S_Q). However, using the one-year independent lagged variable, we report that the obtained output is slightly better than the main analysis but remains consistent with the a priori hypothesis development.

Regarding the test on *H3*, we propose a notion where GRI adoption is negatively associated with information asymmetry (MBV and TOBIN'S_Q). In the empirical test using contemporaneous data, we report that *H3* is statistically supported. Using one-year lagged independent variables, we also document a negative and significant association between $GRI_{i,t-1}$ and information asymmetry. Particularly, we report that the coefficient value of the direct test between $GRI_{i,t-1}$ and MBV is -0.8990. Meanwhile, the coefficient value of the direct test between $GRI_{i,t-1}$ and TOBIN'S_Q is -0.0365. Both of the direct tests on MBV and TOBIN'S_Q indicate a negative and significant association ($p < 0.01$). Therefore, the output of the robustness check is consistent with that of our main analysis, suggesting that GRI adoption is negatively associated with information asymmetry. In the next stage, we continue to elaborate on the obtained result in the discussion subsection.

As the interest in non-financial information, particularly CSR-related, is growing profoundly, we thus propose an empirical study on how CSR practices may help companies deal with the mitigation of information asymmetry. CSR practices, i.e., the questions on (i) how the non-financial information is reported, (ii) through which venue the information is disclosed, (iii) whether the reported information has been verified by the independent third party or not, and (iv) how standardized the reported information is provided to the public, have turned into interesting research questions to investigate. We, therefore, explore the potential presumption on how CSR practices are deemed value-relevant for stakeholders.

Our study, in general, shows the negative relationship between CSR practices and information asymmetry (report preparers vs. report users) in the ASEAN-5 banking industry. The notion that CSR practices are deemed as value-relevant information in truncating the information asymmetry between companies and stakeholders is empirically tested. Our results suggest that the proxies of CSR practices have shown a negative association with the surrogate indicators of information asymmetry, meaning that the CSR practices are value-relevant sources of information, and the voluntary disclosure of CSR-related information to the public provides more propensity for market participants to mitigate the plausible risk and to minimize the informational gap between companies (report preparers) and investors (report users). Recalling the output of our analysis, the association between CSR practices and information asymmetry is conducted using several surrogate indicators. CSR practices, as the main independent variable of interest, are proxied by three types, namely CSR report (CSR_REP), CSR assurance (CSR_ASS), and GRI. Meanwhile, information asymmetry is represented by employing two common proxies, namely MBV and Tobin's Q ratio (TOBIN'S_Q).

Among the three main independent variables of interest, two proxies of CSR practices show a negative and significant association with information asymmetry. The presence of a CSR report and the adoption of the GRI framework have consistently shown a negative relationship either with MBV or Tobin's Q ratio. In this context, our study reveals an indication that the presence of a CSR report is deemed value-relevant in terms of the level of information asymmetry among the ASEAN banks' investors. Investors in this matter are no longer considering the financial information as the sole element of material information, but are also considering the role of non-financial information in driving the level of information asymmetry in the market. The study conducted by Usman and Yennita (2018) mentioned that public, timely information and availability of firm-related information are the essential elements when investors deal with their portfolio of investment construction. Apart from that, the particular information on CSR-related actions also attracts more public attention (Usman, Bernardes, & Kananlua, 2020; Zorio, García-Benau, & Sierra, 2013).

With respect to the negative but insignificant relationship between the presence of CSR assurance and information asymmetry, we report that among the ASEAN-5 banks, CSR assurance practice is not that familiar; therefore, the existing CSR assurance reports (external audit) are not considered as the incremental value for investors in reducing the potential informational gap. Investors might think that the availability of CSR reports is enough, even though the reports are not complemented by external audit reports (CSR assurance). As previously noted in the voluntary disclosure study in Southeast Asian nations, the practice of engaging with non-financial reports is still in its early stages. Therefore, a company's commitment to dealing with CSR action and its reporting has been seen as enough initiative by investors, even though in fact there could be various motives behind the CSR publication to the public (e.g., green-washing, signaling, obtaining legitimacy motives, and so forth). When it is related to the prior study in the same context, our study offers a different empirical finding when compared to Fuhrmann, Ott, Looks, and Guenther's (2017) study. That study investigates the content of assurance statements for sustainability reports, and they found that there is a negative association between the presence as well as the content with the reduction of information asymmetry of a matched sample of 442 STOXX European companies. However, on the other hand, a recent study by Usman et al. (2020) brought a unique context, in which the empirical research using a European and an Asian country in a comparison study shows similar results with our findings. Usman et al. (2020) used Portuguese and Indonesian publicly listed companies from 2012 to 2016 and further tested the presence of CSR vetting on bid-ask spread as the alternate surrogate indicator of information asymmetry. Their study suggests a negative but insignificant association between the main variable of interest, meaning that the presence of CSR assurance is not immediately reflected via the price changes (bid-ask spread), and thus does not significantly affect the reduction of asymmetric information.

The last hypothesis obviously suggests that the adoption of the GRI framework has been seen as a positive commitment that might help companies to better deal with CSR reporting. The previous literature has well documented that the model, format template, and non-financial information metrics do not adopt a particular framework of disclosure. As a result, GRI emerges as one of the alternative frameworks that might enable companies to better organize the type of non-financial information metrics that could be deemed important to be disclosed to the public. Therefore, the GRI framework has evolved several times, and the latest version (GRI generation 3) takes into account the materiality issue to help companies dealing with material information disclosure. In our empirical study, we report that GRI adoption among ASEAN banks is negatively associated with information asymmetry (MBV and Tobin's Q). This finding is in line with Usman et al.'s (2020) study, which notes that GRI adoption is negatively associated with information asymmetry when it is proxied by the bid-ask spread. Their investigation also specifically suggests that GRI adoption helps a company to provide a more organized and structured report to the public, which may facilitate the stakeholders to better understand the essence behind the published information.

More specifically, in the banking sector, our study found that CSR practices, particularly the presence of CSR reports and the adoption of the GRI framework, are negatively associated with information asymmetry, as measured by MBV and Tobin's Q ratio. This aligns with findings from studies such as Zhou et al. (2016), which noted that the presence of assurance on sustainability reports is linked to higher firm valuation, indicating reduced information asymmetry. However, the relationship between CSR assurance and information asymmetry was found to be less significant in the banking industry, which contrasts with some findings in the non-bank sector. Meanwhile, on the other hand, empirical research on non-bank companies has shown that CSR disclosures can have varying impacts on information asymmetry. For instance, studies such as Dhaliwal et al. (2011) have found that firms initiating CSR disclosures experience a reduction in the cost of equity capital, implying reduced information asymmetry. Additionally, Michelon et al. (2015) provided evidence that GRI adoption is positively associated with enhanced firm performance and market valuation, suggesting better information transparency. These results indicate that non-bank companies benefit from CSR disclosures in terms of improved market perceptions and reduced information asymmetry. CSR disclosures can enhance trust and reputation, which are crucial for banks given their reliance on customer and stakeholder confidence. Studies such as Usman et al. (2020) have highlighted the importance of CSR in building trust and reducing information asymmetry in banking. Apart from that, investors in the banking industry may value CSR disclosures for their role in risk management. CSR activities related to governance, ethical behavior, and environmental impact can signal lower operational risks, which is a key concern for bank investors.

5. Conclusion

This study tests the relationship between CSR practices and information asymmetry in the ASEAN-5 banking industry. Using a sample of 27 banks from 2012 to 2016, it is found that CSR practices are negatively associated with information asymmetry. Particularly, the presence of a CSR report shows a negative association, either with MBV or Tobin's Q. However, the firm's adoption of voluntary external assurance (CSR assurance/audit) does not necessarily mean it is associated either with MBV or Tobin's Q ratio. In this regard, we report that in the ASEAN-5 banking industry, external verification on the reported non-financial information is not mandatory. This is indicated by the low number of assurance adoption in the ASEAN-5 banking industry. Finally, the direct test of GRI adoption is negatively related to MBV and Tobin's Q ratio, suggesting that the adoption of a particular disclosure framework (i.e., GRI) is potentially useful in reducing the information asymmetry as proxied by MBV and Tobin's Q ratio. The obtained empirical evidence remains consistent even after being controlled for a number of control variables. To confirm that the statistical estimation outcome is robust, we further run a robustness check using a one-year independent lagged variable. The robustness check results indicate a consistent output with our main analysis, in which CSR practices are negatively associated with information asymmetry.

This study has several limitations that should be considered. First, the reliance on dummy variables for CSR report availability, assurance reports, and GRI adoption may oversimplify the complex nature of CSR practices and their impacts on information asymmetry. While these proxies provide clear and interpretable results, they may not capture the full breadth and depth of CSR activities and disclosures. Second, the study is confined to the ASEAN-5 banking industry, which may limit the generalizability of the findings to other sectors or regions. The banking industry has unique characteristics that might influence the relationship between CSR practices and information asymmetry differently compared to other industries. Additionally, the use of lagged variables, while helpful for robustness checks, does not completely address potential endogeneity issues, as there may be other unobserved factors influencing both CSR practices and information asymmetry.

Future research should consider expanding the scope beyond the ASEAN-5 banking sector to include a more diverse range of industries and geographical regions. This broader approach would enhance the generalizability of the findings and provide a more comprehensive understanding of the impact of CSR practices on information asymmetry. Moreover, incorporating additional measures of CSR activities, such as the quality and content of CSR disclosures, could provide deeper insights into how specific CSR practices influence information asymmetry. Researchers should also explore advanced econometric techniques to address potential endogeneity issues more rigorously. Finally, longitudinal studies tracking changes in CSR practices and their impacts over time could offer valuable insights into the dynamic nature of CSR and its role in mitigating information asymmetry.

In summary, our study contributes to the burgeoning amount of CSR literature by exploring the potential link between CSR practices and information asymmetry. Particularly, the evidence we provide may enhance public understanding of the interplay between CSR practices and information asymmetry in the ASEAN-5 banking industry setting. Our empirical evidence is also relevant for those investors and market participants who are interested in CSR issues in the banking industry, specifically to minimize the potential information asymmetry between the CSR report preparers and the report users.

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