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# The Impact of Corporate Social Responsibility Disclosure on the Future Earnings Response Coefficient (ASEAN Banking Analysis)

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**Abstract:** Corporate social responsibility in the banking industry has an impact on the environment and society. Research was conducted on the impacts of environmental social responsibility disclosure on future income response coefficients of The Association of South East Asian Nations (ASEAN) Banking to determine the level of concern ASEAN banks have in disclosing corporate responsibility, and to understand the levels of future revenue response coefficients. The variable in this research was measured by corporate social responsibility disclosure, while the variable of the Future Earnings Response Coefficient (FERC) was based on the value of banking stocks. Other variables—size, growth, earning persistence, and earnings volatility—were the control variables. The sampling method used was a purposive sampling approach; a research sample of 280 banks in 5 ASEAN countries was determined with this provision: banking report data were taken from the stock exchanges of each country and sustainability reports, using the Global Reporting Initiative (GRI) standard version 4 (G4) from 2014 to 2018. The researchers used conducted multiple regression analysis to examine the variables. The analysis tools used included panel data, so that data processing was carried out using review software. The results of the study show that corporate social responsibility disclosure has a positive and significant effect on the future earnings response coefficient, whereas other variables (i.e., company size, growth, and earnings persistence), do not have a relationship with the disclosure of corporate responsibility or FERC. Only the volatility of earnings has an influence on disclosure of corporate social responsibility and FERC.

**Keywords:** corporate social responsibility; earnings response coefficient; stock prices

**JEL Classification:** G32; G34

## 1. Introduction

Financial information cannot reflect all changes that occur in business operations [1]. A financial report is considered a “fail” when describing coverage areas of intangible asset values, bringing out the increase of information asymmetry between company and user. It creates inefficiency in the process of resource allocation in the stock market (Refs [1–3] Accounting failures show that the intangible resources owned by a company emphasize claims that traditional financial reports have lost their relevance as decision-making instruments [4].

Ref [1] argue that financial reports that mostly value the tangible assets of a company have seen a decrease of value–relevance, especially in an industry sector that is dominated by knowledge-intensive

and innovative organizations. This should encourage companies to raise awareness to external parties about the different (non-financial) conditions. For example, corporate social responsibility (CSR) is still a worthy topic to be examined because it can lead to conflict between two different parties. The potential conflicts can happen to two types of shareholders that are affiliated with the company (insider), and other shareholders, such as institutions or small individual investors, who are not affiliated with the [5].

Ref [5] They found a relationship between insiders and CSR ratings. The insider has a personal advantage when the company has a high CSR rating. The CSR conflict can be seen from two different perspectives. On the one hand, we find that greater levels of CSR spending can maximize a company's value [5,6]. On the other hand, CSR activity is considered an expense for the company, so that it can decrease shareholder value.

Corporate social responsibility is needed to maintain the harmony of relationships between companies and the environment. The World Bank defines CSR as a business commitment to contribute to sustainable economic development, through collaboration with employees and their representatives, their families, local communities, and the general public, to improve the quality of life, in ways that are beneficial for both business and development. Ref [7] stated that the disclosure of information in annual reports, conducted by companies, can reduce information asymmetry and agency problems. The research conducted by [8] showed that one of the reasons that management performs social reporting is for strategic reasons. From an economic perspective, the company will disclose information if it can increase the value of the company. This indicates that companies implementing CSR expect positive response from market participants.

Corporate social responsibility was previously seen as a new concept for Asian business culture; however, many scholars have found that this may not be the case—that a notion appropriate to CSR behavior exists within Asian philosophy [9]. The evolution of CSR in ASEAN originated from the establishment of industrialization in 1990, which affected the Asian Economic era. In this period, the CSR program focused on human rights, politics, gender equality, employment conditions, and environmental concerns, due to the increasing use of natural resources [10–12].

The ASEAN Stock Exchange requires disclosure of financial and non-financial information that can be used to predict future conditions of a company [9]. The ASEAN stock exchange may play an increasingly important role in shaping the development of financial reporting in ASEAN. A high level of harmony exists within the disclosure requirements of the five ASEAN countries. Nevertheless, there are important national differences in volume and disclosure levels, as well as sources of authority [9].

By disclosing their CSR activities, it is expected that companies will obtain a good reputation in order to attract investors, so that future earnings of the company can be predicted. The existence of voluntary disclosure in a company's annual report allows investors to obtain additional information to accurately assess future earnings of the company [13]. A lack of information disclosure limits the ability of capital and labor markets to monitor and discipline managers [14]. The higher disclosure can also reduce the cost of equity capital by reducing non-diversifiable risk [15]. Ref [13] examined the relationship between the extent of voluntary disclosure and stock price informatization to predict future earnings. The results of the research show that the future earnings response coefficient (FERC) for a high disclosure company is significantly larger than FERC in a low disclosure company.

Ref [16] explored how the company environmental reputation (CER) affects the relationship between a company's current annual earnings and future annual earnings. They found that companies with higher CER scores show higher levels of stock price anticipation against earnings than companies with lower CER scores. Therefore, environmental problems will most likely influence an investor's ability to forecast future earnings and, hence, their decision to buy corporate securities [16].

In contrast to [16], this study aims to examine the effect of CSR disclosure in a company's annual report on prediction of future earnings, as measured by FERC. Samples in this research include banking companies in five selected ASEAN countries: Indonesia, Malaysia, Philippines, Singapore, and Thailand. Banking companies are selected as samples in this study because, according to the

Association of Chartered Certified Accountants (ACCA) report 2010, the percentage of banks in ASEAN that make the CSR report is still very small, although it increases every year. There is increasing recognition that banks should provide disclosure on social, environmental, and economic (CSR) aspects of their operations, as CSR can enhance bank reputation and investor confidence [17].

The concept of CSR generally states that a company's responsibility is not only to its owners or shareholders, but also to stakeholders who are affected by company operations. Companies that carry out CSR activities will pay attention to the impact of their operations on social and environmental conditions, and strive for positive impacts. So, with the concept of CSR, it is hoped that environmental damage that occurs in the world, such as deforestation, air and water pollution, and climate change, can be reduced. The future earnings response coefficient (FERC) is the relationship between this year's return and next year's earnings, which shows stock price informativeness [18].

The future earnings response coefficient (FERC) is often used as a measure to predict future earnings. FERC reflects more than just persistence. If income smoothing makes earnings more informative, then returns should reflect more information on future earnings, and FERC should be higher for firms, with greater smoothing. If income smoothing merely garbles information, then returns should reflect less future earnings information, and the FERC should be lower for firms with greater smoothing. A more negative correlation indicates more income smoothing. The understanding (that has been explained) is based on several studies related to research on corporate responsibility, and is something that must be done by companies, especially banks.

Ref [19] reported that CSR is desirable because it adds a unique dimension to the attributes of income and is useful for company valuation. In particular, their FERC-based testing results show that companies with higher-CSR smoothness reflect more information about future earnings than companies with lower-CSR smoothness. FERC measurements in [19] referred to the model developed by [20], and also used in [21]. The method approach used in corporate social responsibility is Global Reporting Initiative version 4 (GRI G4), while for the future earnings response coefficient (FERC) uses future stock prices. The control variables in this study are firm size, growth, earnings persistence, and volatility. Profit is a moderating variable. Thus, the study was conducted to determine the impact of disclosure of corporate responsibility on the efficiency of future income responses (ASEAN Banking Analysis).

## 2. Literature Review and Hypotheses

The agency problem occurs due to information asymmetry between principals and agents. In reducing information discrepancy, a company discloses their annual reports, including a corporate social responsibility disclosure. One strategy to maintain a harmonious relationship with company stakeholders is to implement CSR—With expectations that the company can realize the desires of stakeholders. A harmonious relationship between the company and its stakeholders will help the company achieve sustainability.

Differences in the quality of information between companies occur because of the special characteristics in each company. Due to information discrepancies (information asymmetry) between companies, the manager may try to give a signal about the information to investors. Signaling theory states that there are two ways to give a signal: direct and indirect. Direct signals can be given through, for example, voluntary disclosure of the company's financial statements [22,23].

Investor predictions on future earnings of a company can be tested, for example, with the stock price informativeness model, where the current stock return would reflect the earnings of the next period. This study uses the stock price informativeness model, where the profit prediction rate can be expected from the coefficient of regression result between the current stock return and next period earnings, by adding some control variables, such as those done by [23,24].

In general, study results on the relationship between the levels of information disclosure by companies, with company market performances, are still very diverse. The contents and timing of other expressions (besides financial statement information) may affect the usefulness of financial statements,

as disclosed by [25]. Disclosure of information in annual reports conducted by companies is expected to reduce information asymmetry and agency problems [7].

Ref [22] examined the relationship between the extent of voluntary disclosure and stock price informativeness. The [22] studies have hypothesized that the more disclosures, the higher the informativeness of the price, as measured by FERC, *ceteris paribus*. The results of the research conducted by [22] show that FERC for high disclosure companies is significantly greater than FERC for low disclosure companies.

Research conducted by [26] used a wide range of voluntary disclosures in the annual report as a proxy for the uncertainty on future prospects of the company. CSR reflects the company's efforts to improve the company's image (to be seen as a responsible company). This raises the notion that CSR disclosure has a positive effect on firm value. The existence of voluntary disclosure in the company's annual report allows investors to obtain additional information to accurately assess future earnings of the company in the future, so that uncertainty about future prospects of the company will be reduced. CSR brings many benefits to the banking sector; thus, enhances a bank's reputation and financial performance [27].

FERC is the relationship between this year's return and next year's earnings, which shows stock price informativeness [20]. The future earnings response coefficient (FERC) is often used as a measure to predict future earnings. The [20] model is an approach developed by [20] to examine the amount of information on future earnings that is reflected in changes in current earnings. This approach is used to estimate the direct relationship between future earnings and current earnings and past earnings. To see the ability of the stock market to predict future earnings, the proxy used is the future earnings response coefficient (FERC). This coefficient is obtained by regressing this year's stock return with the annual earnings from the company, plus the control variable. According to [20], investors would have better ability to predict earnings, which would then be reflected in stock prices, which can lead to anticipation of better future profits (and, as a result, produce higher FERC). The approach by [20], hereinafter CKSS, provided evidence that income smoothing increases past and present earnings informativeness, concerning future earnings and cash flow. We do this by investigating the relationship between this year's stock returns and future earnings for firms with different leveling rates. We call this association the future earnings response coefficient (FERC).

Ref [28] support a positive relationship between firm size and ERC. The positive relationship between firm size and earnings response coefficient is good (regarding economic profit). In addition, the more information available about a company's activities, the easier it is for the market to interpret the information in financial statements. Companies that have large total assets indicate that the company has reached the maturity stage, where, at this stage the company has good prospects for a relatively long period of time, is predicted to be relatively stable, and more able to generate profits than small companies. Meanwhile, research [29] states that income has a significant positive effect on ERC, but a significant negative effect on FERC. Meanwhile, leverage has no significant effect on ERC, but has a significant negative effect on FERC. In addition, dividends and firm size have no effect on ERC and FERC.

According to [30,31], theoretically, large companies will not only bound to pressure, but also have more operating activities, and have a greater influence on society, and may have more shareholders, who will always pay attention to social programs made by the company, so that the disclosure of corporate social information will be even wider. This resulted in larger companies being required to disclose their social responsibilities. Ref [32] state that there is a relationship between company size and CSR, where, the bigger the company, the greater the demands to implement CSR, so it can be said that there is a positive correlation between size and social performance.

Anticipating future access to capital markets, firms with higher growth prospects might disclose forward-looking information to reduce information asymmetry [33]. If a company's future earnings are unstable, then they are more difficult to predict and, thus, the amount of future earnings information confiscated in the current share price is low. In addition, firm stock prices may provide more information

on future earnings when there is more personal information-seeking activity by institutional analysts and investors [21]. According to [34], the dividend payout ratio and growth in assets have no significant effect on stock price volatility, while earnings volatility has a significant negative effect on stock price volatility. Ref [35] regarding the factors that affect the volatility of share prices in non-financial public companies, stated that the dividend payout ratio and growth asset variables significantly affect stock price volatility. It may be argued that the use of single-segment firms as controls for macroeconomic changes during our sample period, is inadequate, since firms that expand the number of segments will, most likely, use growth options, market valuation of growth, and future options. Ref. [24], also looked at the impact of SFAS No. 131 Business Segment Data on the Market's Ability to Anticipate Future Earning. Their study was conducted in reference to the stock market boom of the late 1990s which resulted in increased income of the companies sample study. They concluded that the Market's Ability to Anticipate Future Income is not due to changes in standards but in response to broad economic events.

Ref [36] concluded that companies experiencing a growth phase have a cash flow relevance value that is higher than the net income relevance value. Ref [37], found that the ability of financial information, such as income and cash flow, to predict the benefits of investment is useful for predicting changes in earnings and cash. The ratio of profit and gross profit to sales is quite significant in predicting changes in profit in the following year. However, it is not significant in predicting cash flow. The variables that are significant in predicting changes of income and cash flow include sales and administration costs and gross profit.

Ref [38] use the earnings return correlation as a proxy for information asymmetry in the context of an adverse selection model. A low earnings return correlation indicates that earnings information provides little information about a firm's value, so that information asymmetry remains high. Therefore, with the aim of reducing information asymmetry, the expression will be more in companies that have a lower earnings return correlation, or, in other words, the earnings return correlation is negatively related to the extent of the expression. Ref [22] tested the relationship between the extent of voluntary expression and informativeness of stock prices. This study found that the ERC future for high disclosers was significantly greater than the ERC future for low disclosers. They did not specifically test for the broad association of voluntary expression with current ERCs, or if the effect of informativeness on current ERCs may be positive or negative. Ref [22,39] tested the relationship between the extent of voluntary expression and informativeness of stock prices. This study found that the ERC future for high disclosers was significantly greater than the ERC future for low disclosers. They did not specifically test for the broad association of voluntary expression with current ERCs, or if the effect of informativeness on current ERCs may be positive or negative. According to the authors, the broad influence of expressions on current ERC may be positive, because, usually, companies that disclose a lot of information are companies that have good news. Research conducted by [26] states that the voluntary level of corporate disclosure published in annual reports has a negative effect on FERC, while the results of the significance test for model 2 (not presented) indicates that, of the five ERC determinants tested, namely earnings persistence, systematic risk, leverage, growth, and company size, only earnings persistence variables were found to have a positive effect on ERC.

Concerning environmental protection and management [40–42] reveals that CSR disclosure in annual reports is one way for companies to build, maintain, and legitimize corporate contributions from an economic and political perspective. CSR is a mechanism for an organization to voluntarily integrate environmental and social concerns into its operations and interactions with stakeholders, which goes beyond the organization's responsibility in the legal field [43,44]. CSR can be interpreted as an industrial commitment to be responsible for the impact of operations in the social, economic, and environmental dimensions, and to maintain that these impacts contribute to the benefits of society and the environment [45]. Companies are increasingly aware that a company's survival also depends on the company's relationship with the community and its environment. Corporate social responsibility occurs between a company and all stakeholders, including customers, employees, communities, owners

or investors, government, suppliers, and even competitors [46]. The banking industry also mentions the social responsibility aspect in its annual reports, although, in a relatively simple form, it should be based on economic, environmental, labor, human rights, community/social, and product performance indicators. The reason banking companies in Indonesia conduct social reporting is because of a change in the paradigm of accountability, from management to share owners and stakeholders.

Investor considerations will affect the market response to company profits (FERC) because investors not only use earnings information in making investment decisions, but the information contained in the CSR report [41]. This means that the information contained in CSR will reduce, or negatively affect, the level of use of earnings information by investors [42]. According to [39], research on voluntary disclosure shows that a higher level of disclosure is associated with better market performance (as measured by stock returns) and the correlation of earnings and company stock returns are used as a proxy for information asymmetry. The low correlation of earnings and stock returns indicate that earnings information provides little information about a firm's value, indicating that there is still high information asymmetry. This disclosure aims to reduce information asymmetry, especially for companies that have a low correlation of earnings/returns, so that there is a negative relationship between the correlation of earnings/returns (FERC) and the level of disclosure.

**Hypothesis 1.** *Corporate social responsibility disclosure has a positive effect on the company's future earnings prediction level as measured by FERC.*

### 3. Research Methods

#### 3.1. Population and Sample

The populations in this study are banking companies in five ASEAN countries (Indonesia, Singapore, Malaysia, Thailand, and Philippines). Purposive sampling was conducted for unqualified population members, not selected as the study sample.

Sampling was based on the following criteria:

- (1) Banking and financial companies listed in the Stock Exchange in the five ASEAN countries: Indonesia, Malaysia, Philippines, Singapore, and Thailand.
- (2) Companies using the Global Reporting Initiative (GRI) version 4 (G4) standard in disclosure of corporate social responsibility.
- (3) The companies had complete data in accordance with the needs of the study sample.

#### 3.2. Definition and Operation of Variables

##### 3.2.1. Future Earnings Response Coefficient (FERC)

This study follows the model used by Ettredge et al. (2005) and Istianingsih (2011). The model that estimates FERC in this research is as follows:

$$R_t = a_0 + b_0E_{t-1} + b_1E_t + b_2E_{t+1} + b_3R_{t+1}$$

where  $E_{t-1}$  and  $E_t$  respectively represent earnings for year  $t - 1$  and  $t$ , and  $E_{t+1}$  represents profit  $t$  year +1.  $R_{t+1}$  is the annual stock return in year  $t + 1$ . The coefficient ( $b_0$ ) is predicted to be negative, the coefficient of ERC ( $b_1$ ) is predicted to be positive, the coefficient of future returns ( $b_3$ ) is predicted to be negative because it associates to the unexpected component of  $E_{t+1}$ .

The FERC is measured following the measurements used by Ettredge et al. (2005) and Istianingsih (2011). The basic FERC model used in this study is as follows:

$$R_t = a_0 + b_0E_{t-1} + b_1E_t + b_2E_{t+1} + b_3R_{t+1}$$

where:

$R_t$ : daily stock return year  $t$ , calculated 12 months that ends on March 31.

$E_t$ : retained earnings year  $t$ , divided by equity at the end of March.

$E_{t-1}$ : retained earnings year  $t - 1$ , divided by equity at the end of March.

$E_{t+1}$ : retained earnings year  $t + 1$ , divided by equity at the end of March.

$R_{t+1}$ : daily stock return year  $t + 1$ , calculated 12 months that ends on March 31.

The value of FERC is coefficient  $b_2$ .

### 3.2.2. CSR Disclosure Index (CSRI)

In this study, an independent variable is the disclosure of corporate social responsibility (CSR). CSR disclosure is measured by using CSR index. Disclosures are measured using the GRI Standard, covering economic, environmental, and social indicators. CSRI is calculated by using dichotomy on each research instrument for each item of CSR where disclosure is given as a value of 1, and if it is not disclosed, it is given a value of 0. Next, the score of each item are totaled to get an overall score for each company. For the calculation formula of CSRI, it is as follows:

$$CSRI_j = \frac{\sum X_{ij}}{n_j}$$

The approach to calculate CSRI uses a content analysis approach, where each CSR item in a research instrument is assigned a value of 1 if it is disclosed, and a value of 0 if it is not disclosed. Next, the value of each item is totaled to earn the overall value for each company.

$CSRI_j$ : corporate social responsibility disclosure index.

$n_j$ : Total item in GRI 4.0 (161 item).

$X_{ij}$ : content analysis: 1 = if item  $i$  disclosed; 0 = if item  $i$  not disclosed.

Therefore,  $0 \leq CSRI_j \leq 1$ .

### 3.2.3. Company Size (SIZE)

The variable size is calculated by using the logarithmic proxy of the market capitalization of the company. Company size is used to control the possibility of influence of the company size and information environment on FERC, as used in [21,23,24].

### 3.2.4. Company Growth (SG)

The growth variable in this study is used to see the effect on the relationship between the current return to the future earnings of the company, as used in [14,21,24,47]. The growth variable is measured from the sales growth rate, which is the growth rate of net sales.

$$SG_t = \frac{SALES_t - SALES_{t-1}}{SALES_{t-1}}$$

### 3.2.5. Earning Persistence (PERSIS)

Earnings persistence is used to control the effect of earnings persistence on FERC, as used in [14,21,24,47]. The earnings persistence is measured by a dummy variable with a value of 1 for a company that has a negative next year profit and 0 for the other. According to [14], if the company's earnings is to turn negative in the following year, then it will be more difficult to predict than companies that have positive future earnings that are more normal and persistence.

### 3.2.6. Earnings Volatility (VOLA)

The earnings volatility is used to control the effect of earnings volatility on FERC, as used in [14,21,24,47]. Companies with high earnings volatility will be more difficult to predict. This variable is measured by the standard deviation of earnings before interest and tax from year  $t - 1$  to year  $t + 1$ .

### 3.3. Research Design

The model used to test the factors affecting FERC in this study is a model that has been used in [14,24]. This study follows [14] in the use of realized earnings for year  $t + 1$  in lieu of expectation of year end income  $t$ . The realization of  $t - 1$  year earnings is used as the forecast of the previous year's earnings. To reduce errors due to the use of realized profits, this study uses the yield  $t + 1$  year stock, as conducted in [14,24].

The model used to test the factors affecting FERC in this study is as follows:

$$\begin{aligned}
 R_t = & a_0 + b_0E_{t-1} + b_1E_t + b_2E_{t+1} + b_3R_{t+1} + b_4CSDI + b_5SIZE + b_6GROW \\
 & + b_7PERSIS + b_8VOLA + b_9CSDI + b_9CSDI * E_{t-1} + b_{10}CSDI * E_t \\
 & + b_{11}CSDI * E_{t+1} + b_{12}CSDI * R_{t+1} + b_{13}SIZE * E_{t-1} \\
 & + b_{14}SIZE * E_t + b_{15}SIZE * E_{t+1} + b_{16}SIZE * R_{t+1} \\
 & + b_{17}GROW * R_{t-1} + b_{18}GROW * E_t + b_{19}GROW * E_{t+1} \\
 & + b_{20}GROW * R_{t+1} + b_{21}PERSIS * E_{t-1} + b_{22}PERSIS * E_t \\
 & + b_{23}PERSIS * E_{t+1} + b_{24}PERSIS * R_{t+1} + b_{25}VOLA * E_{t-1} \\
 & + b_{26}VOLA * E_t + b_{27}VOLA * E_{t+1} + b_{28}VOLA * R_{t+1} + \varepsilon
 \end{aligned}$$

where:

$R_t$ :	Daily stock return year $t$ , calculated using 12 months ended on March 31.
$E_t$ :	Retained earnings year $t$ , divided by market equity at the end of March.
$E_{t-1}$ :	Retained earnings year $t-1$ , divided by market equity at the end of March.
$E_{t+1}$ :	Retained earnings year $t + 1$ , divided by market equity at the end of March.
$R_{t+1}$ :	daily stock return year $t + 1$ , calculated using 12 months ended on March 31
$CSRI$ :	Corporate social responsibility disclosure index (measuring the type of CSR disclosed by the company in its annual report), is a content analysis with a value of 1 if the item is disclosed, and value 0 if the item is not disclosed.
$SIZE$ :	Size of company calculated by logarithm market capitalization.
$GROWTH$ :	Sales growth company $i$ in year $t$ , measured by sales growth rate which is the growth rate of net sales.
$PERSISTENT$ :	Earnings persistence is a dummy variable with value 1 for company that has negative annual profit, and 0 for the other.
$VOLATILITY$ :	Earnings volatility, measured by the standard deviation of earnings before interest and tax from year $t - 1$ to year $t + 1$ .

It is expected that the regression coefficient of interaction variables CSRI and E2010 will be greater than 0 to support the existing hypothesis. The effect of control variable on FERC can be seen from the regression coefficient of interaction variables SIZE, GROW, PERSIS, and VOLA with  $E_{t+1}$ .

## 4. Results and Discussion

### 4.1. Descriptive Statistic

Populations in this research are banks in five ASEAN countries (Indonesia, Malaysia, Philippines, Singapore, and Thailand). Sampling was done by the purposive sampling method. Unqualified population members were not selected as the sample. After the selection of data for each company selected to sample, there were 56 companies selected, with a final sample of 280 companies obtained from 2014 to 2018. This sample consists of 56 banks from five countries, namely Indonesia (as many as 37 banks), Malaysia (seven banks), Thailand (seven banks), Singapore (two banks), and the Philippines (three banks). Data from 37 banks were taken from annual reports and financial reports, as well as their share prices for 5 years, from 2014 to 2018. In particular, profit data were taken from 2013 to 2019 as this study required profit data for the past year and future profits (1 year ahead). For data used to calculate stock returns—data from 2014 to 2019 were used because return data are needed until the next year.



Refer to Table 1 the results show that the average CSRI is 0.15 (15%), with a maximum is 0.3956 (39%) and a minimum is 0.0110 (1%). It can be concluded that the average disclosure of banking companies in ASEAN that follow the ASEAN CG Scorecard assessment is still very low. This is possible because CSR is still a voluntary disclosure and has not been required by financial accounting standards. As a result, companies simply voluntarily disclose the social information. This voluntary disclosure is not required by the standards, but is recommended, and will add value to the companies. The number of companies that disclose social responsibility information in their annual reports is growing [7].

**Table 1.** Descriptive Statistics.

Variable	N	Minimum	Maximum	Mean	Std. Deviation
$R_t$	280	-0.5431	7.87	0.20	0.87
$R_{t+1}$	280	-0.8056	123.68	0.32	1.44
CSRI	280	0.0110	0.40	0.15	0.10
Persistence	280	0.0000	1.00	0.97	0.16
Growth	280	-0.1740	5.16	0.25	0.54
Size	280	46.819	8.94	6.83	1.05
Leverage	280	0.0324	8.86	1.40	0.93
Volatility	280	0.0024	0.93	0.18	0.18
$E_{t-1}$	280	-81,740	24,253,845	1,342,804	4,154,244
$E_t$	280	-54,550	25,410,788	1,327,796	4,419,705
$E_{t+1}$	280	-6,483,084	26,227,991	1,253,784	4,392,954
$CSRI \times E_{t-1}$	280	-18,863	7,263,220	326,843	1,172,528
$CSRI \times E_t$	280	-12,588	7,438,205	329,034	1,247,190
$CSRI \times E_{t+1}$	280	-1,211,125	6,973,318	310,019	1,186,516
$Persistence \times E_{t-1}$	280	-54,550	24,253,845	1,342,468	4,154,333
$Persistence \times E_t$	280	0	25,410,788	1,329,092	4,419,305
$Persistence \times E_{t+1}$	280	-6,483,084	26,227,991	1,258,156	4,391,431
$Growth \times E_{t-1}$	280	-66,604	7,026,602	291,192	1,031,955
$Growth \times E_t$	280	-61,303	6,388,087	285,186	1,037,430
$Growth \times E_{t+1}$	280	-436,420	7,403,463	296,998	1,128,610
$Size \times E_{t-1}$	280	-570,097	216,919,242	11,281,113	35,679,239
$Size \times E_t$	280	-380,460	227,266,600	11,189,949	38,091,541
$Size \times E_{t+1}$	280	-53,561,380	234,575,423	10,653,507	38,441,481
$Leverage \times E_{t-1}$	280	-96,578	30,757,781	1,559,749	4,893,271
$Leverage \times E_t$	280	-64,452	32,224,971	1,523,727	5,236,725
$Leverage \times E_{t+1}$	280	-7,742,784	33,261,316	1,508,695	5,499,659
$Volatility \times E_{t-1}$	280	-43,632	2,231,165	119,233	328,590
$Volatility \times E_t$	280	-29,118	1,888,115	92,770	253,115
$Volatility \times E_{t+1}$	280	-4,614,122	1,307,709	39,097	490,124
Valid N (list-wise)	280				

Based on the CSRI graph for the average score of CSRI as per country, it shows that the highest CSRI value is the Philippines and the lowest is Malaysia.

Table 2 summarizes the results of correlation testing between variables in the FERC model. This table is used to see the correlation between variables in the research model used to test the effect of corporate social responsibility disclosure on FERC. From Table 3, it can be seen that the correlation between CSRI and  $E_{t+1}$  is positive but not significant. This is not in accordance with the initial prediction that the higher the CSRI, the stronger the relationship between current return and future earnings or the higher the FERC.

Table 2. Correlation Test.

	$R_t$	$E_{t-1}$	$E_t$	$E_{t+1}$	$R_{t+1}$	CSRI	GROW	PERSIS	SIZE	VOLA
$R_t$	1									
$E_{t-1}$	-0.039	1								
$E_t$	-0.067 *	0.472 **	1							
$E_{t+1}$	-0.040	0.381 **	0.514 **	1						
$R_{t+1}$	-0.013	-0.077 **	0.003	0.006	1					
CSRI	-0.059 *	0.043	0.063 *	0.046	-0.034	1				
GROW	0.046	0.040	0.209 **	0.126 **	-0.053 *	0.044	1			
PERSIS	0.000	0.249 **	0.326 **	0.550 **	-0.023	0.129 **	0.141 **	1		
SIZE	-0.069 **	0.086 **	0.065 *	0.019	-0.180 **	0.257 **	0.123 **	0.205 **	1	
VOLA	0.006	-0.070 **	-0.098 **	0.029	0.051	-0.152 **	-0.056 *	-0.293 **	-0.283 **	1

\* = significant at 1%; \*\* = significant at 5%.  $R_t$ : Daily stock return year  $t$ , calculated using 12 months ended on March 31.  $E_t$ : Retained earnings year  $t$ , divided by market equity at the end of March.  $E_{t-1}$ : Retained earnings year  $t - 1$ , divided by market equity at the end of March.  $E_{t+1}$ : Retained earnings year  $t + 1$ , divided by market equity at the end of March.  $R_{t+1}$ : daily stock return year  $t + 1$ , calculated using 12 months ended on March 31. CSRI: Corporate social responsibility disclosure index (measuring the type of CSR disclosed by the company in its annual report), is a content analysis with a value of 1 if the item is disclosed, and value 0 if the item is not disclosed. SIZE: Size of company calculated by logarithm market capitalization. GROW: Sales growth company  $i$  in year  $t$ , measured by sales growth rate which is the growth rate of net sales. PERSIS: Earnings persistence is a dummy variable with value 1 for company that has negative annual profit, and 0 for the other. VOLA: Earnings volatility, measured by the standard deviation of earnings before interest and tax from year  $t - 1$  to year  $t + 1$ .

Table 3. Summary of Test Results.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	(0.524999)	0.155451	(3.377256)	0.0011
$R_{t+1}$	0.281152	0.056739	4.955225	0.0000
CSRI	(0.478390)	0.245706	(1.946999)	0.0549
GROW	(0.047333)	0.048188	(0.982243)	0.3288
SIZE	0.098013	0.028369	3.454979	0.0009
LEVERAGE	0.068324	0.019128	3.571938	0.0006
VOLATILITY	0.144405	0.109238	1.321929	0.1898
$E_{t-1}$	$(5.43 \times 10^{-6})$	$8.84 \times 10^6$	(0.614756)	0.5404
$E_t$	$1.31 \times 10^5$	$1.26 \times 10^{-5}$	1.038909	0.3018
$E_{t+1}$	$(2.76 \times 10^{-6})$	$3.58 \times 10^{-6}$	(0.772226)	0.4421
CSRI $\times E_t$	$(1.57 \times 10^{-6})$	$1.19 \times 10^{-6}$	-1.324824	0.1888
CSRI $\times E_{t-1}$	$1.94 \times 10^{-7}$	$1.14 \times 10^{-6}$	0.169433	0.8659
CSRI $\times E_{t+1}$	<b><math>1.60 \times 10^{-6}</math></b>	<b><math>6.14 \times 10^{-7}</math></b>	<b>2.612443</b>	<b>0.0106</b>
PERSISTENT $\times E_{t-1}$	$(1.17 \times 10^{-5})$	$8.71 \times 10^{-6}$	(1.342755)	0.1830
PERSISTENT $\times E_t$	$2.01 \times 10^{-6}$	$1.26 \times 10^{-5}$	0.159798	0.8734
PERSISTENT $\times E_{t+1}$	$2.66 \times 10^{-6}$	$3.09 \times 10^{-6}$	0.861875	0.3912
GROWTH $\times E_{t-1}$	$2.14 \times 10^{-6}$	$4.00 \times 10^7$	5.348892	0.0000
GROWTH $\times E_t$	$(1.99 \times 10^{-6})$	$3.08 \times 10^7$	(6.456691)	0.0000
GROWTH $\times E_{t+1}$	$(7.03 \times 10^{-7})$	$3.60 \times 10^7$	(1.950104)	0.0545
SIZE $\times E_{t-1}$	$2.05 \times 10^6$	$1.79 \times 10^7$	11.47542	0.0000
SIZE $\times E_t$	$(1.74 \times 10^{-6})$	$3.11 \times 10^7$	(5.594689)	0.0000
SIZE $\times E_{t+1}$	$8.20 \times 10^9$	$2.46 \times 10^7$	0.033306	0.9735
LEVERAGE $\times E_{t-1}$	$(2.31 \times 10^{-8})$	$2.20 \times 10^7$	(0.105032)	0.9166
LEVERAGE $\times E_t$	$1.80 \times 10^7$	$3.77 \times 10^7$	0.477367	0.6343
LEVERAGE $\times E_{t+1}$	$(5.39 \times 10^{-7})$	$4.61 \times 10^7$	(1.167694)	0.2462
VOLATILITY $\times E_{t-1}$	$(7.36 \times 10^{-7})$	$2.51 \times 10^7$	(2.937680)	0.0043
VOLATILITY $\times E_t$	$(7.96 \times 10^{-7})$	$4.64 \times 10^7$	(1.716082)	0.0898
VOLATILITY $\times E_{t+1}$	<b><math>4.92 \times 10^6</math></b>	<b><math>2.18 \times 10^7</math></b>	<b>2.261116</b>	<b>0.0263</b>
Weighted Statistics				
R-squared	0.982338	Mean dependent variable		0.571032
Adjusted R-squared	0.976661	S.D. dependent variable		2.630946
S.E. of regression	0.372378	Sum squared residual		11.64788
F-statistic	173.0398	Durbin–Watson stat		1.932477
Prob (F-statistic)	0.000000			

Table 3. Cont.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Unweighted Statistics				
R-squared	0.838360	Mean dependent variable		0.203361
Sum squared residual	13.64601	Durbin–Watson stat		1.600378

Numbers marked in bold are the main focus to prove the hypothesis.  $E_{t+1}$ : Retained earnings year  $t + 1$ , divided by market equity at the end of March.  $R_{t+1}$ : daily stock return year  $t + 1$ , calculated using 12 months ended on March 31. *CSRI*: Corporate social responsibility disclosure index (measuring the type of CSR disclosed by the company in its annual report), is a content analysis with a value of 1 if the item is disclosed, and value 0 if the item is not disclosed. *SIZE*: Size of company calculated by logarithm market capitalization. *GROW*: Sales growth company  $i$  in year  $t$ , measured by sales growth rate which is the growth rate of net sales. *PERSIS*: Earnings persistence is a dummy variable with value 1 for company that has negative annual profit, and 0 for the other. *VOLA*: Earnings volatility, measured by the standard deviation of earnings before interest and tax from year  $t - 1$  to year  $t + 1$ .

#### 4.2. Results

Table 3 shows the results of multiple linear regression analysis on the examined variables.

Table 3 shows that the value of Adjusted R-squared is 0.976661. It means that 97.66% of the variability of independent variable data are used in the study, while the remaining 2.44% is explained by other independent variables outside the model or residual.

Table 3 shows that corporate social responsibility disclosure positively affects the prediction level of future earnings of the company as measured with FERC ( $t = 2.612$ ;  $p = 0.0106$ ). It can be interpreted that the higher the value of CSR disclosure, the higher the prediction value of future earnings of the company as measured by FERC. The results of this research are in line with the results of [26,28,40].

Corporate social responsibility disclosure and earnings do not affect the stock returns. This is very interesting because when the CSR and earnings are viewed individually, they do not affect the stock return, but when the two variables interact, they have a significant effect ( $t = 2.612$ ;  $p = 0.0106$ ). Thus, the interaction between CSR and earnings is informative for future stock prices. In other words, investors cannot only see from one side, either from profit or CSR, but they must see from both sides in order to predict future earnings.

Corporate social responsibility to the public will provide additional information for investors to predict future earnings. This can reduce information asymmetry that occurs between the agent (as the manager of the company) and the principal (as the owner of the company). When information asymmetry is reduced, the investor, as the owner of the company, or the principal, will be more loyal, which is marked by the fluctuation of stock return. Ref [22] examined the relationship between the extent of voluntary disclosure and stock price informativeness. The results of the research show that future earnings response coefficient (FERC) for a high disclosure company is significantly larger than FERC in a low disclosure company.

Ref [8] show that one reason management performs social reporting is for strategic reasons. From an economic perspective, the company will disclose information if it will increase the value of the company. This indicates that companies implementing CSR expect positive response from market participants. This is also supported by [26], who stated that CSR reflects a company's efforts to improve the company's image (to be seen as a responsible company); thus, raising the notion that CSR disclosure has a positive effect on a firm's value.

This study also applies earnings persistence, growth, size, leverage, and earnings volatility as control variables, whether those variables can control the influence of corporate social responsibility disclosure affects the level of prediction of future earnings of the company, as measured by FERC. Table 2 shows that all control variables have no effect on FERC, except earnings volatility. Earnings volatility has value ( $t = 2.26116$ ;  $p = 0.0263$ ). This means that earnings volatility can control the effect of corporate social responsibility disclosure variable to FERC.

Testing of each research variable states that the corporate responsibility disclosure variable has a coefficient value of 2.612, meaning that there is a positive and significant relationship to the future earnings response coefficient (FERC). The results of the study agree with research conducted by [22],

namely, the relationship between the extent of voluntary disclosure and stock price informativeness. This study found that the ERC future for high disclosers was significantly greater than the ERC future for low disclosers. They did not specifically examine the relationship between broad voluntary expressions and current ERCs, or if the effect of informativeness on current ERCs may be positive or negative. According to [28], income smoothing firms with higher corporate social responsibility (CSR) experience a higher contemporaneous earnings–return relationship, greater Tobin’s Q, and stronger current return–future earnings relationships. The Q ratio, also known as Tobin’s Q, equals the market value of a company divided by its assets’ replacement cost. The results show that CSR is desirable as it adds a unique “quality dimension” to earnings attributes and is useful for firm valuation. The results of different research conducted by [26] show that the voluntary level of corporate disclosure published in annual reports has a negative effect on FERC, while the results of the significance test for model 2 (not presented) indicate that, of the five ERC determinants tested, namely earnings persistence, risk, systematic, leverage, growth, and firm size, only earnings persistence variables were found to have a positive effect on ERC.

As for the control variables in research related to corporate social responsibility, such as company size, growth, earnings persistence, and earnings volatility, it is intended to control the variable corporate social responsibility disclosure, but, as the results of the study agree, only the earnings volatility variable has an influence on the disclosure of corporate social responsibility and FERC. With research conducted, dividend policy has an influence on stock prices because the decision contains important information regarding the distribution of operating income and company performance. This information provides a reaction for each investor, thereby affecting the volatility of stock prices in the market. The fluctuation of profit can make it difficult for companies to get external funds, because the company is unstable. The higher the profit volatility level, the greater the capital gain that will be obtained by investors when the profit reaches its maximum level, so that investors tend to keep the shares they own (hold) for the future. Because not many sales that occurred, the level of stock price volatility tends to be low [34].

Likewise, the company size variable has no relationship to corporate responsibility disclosure, and the FERC research results are not in line with the research [29] which states that the income of a company has a significant positive effect on ERC, but has a significant negative effect on FERC. Meanwhile, leverage has no significant effect on ERC, but has a significant negative effect on FERC. In addition, dividends and firm size have no effect on ERC and FERC. The growth variable is stated to have no relationship with the disclosure of corporate responsibility and FERC, the results of this study do not agree with the research by [8], which concluded that companies experiencing a growth phase have a cash flow relevance value that is higher than the value of net income relevance. [16] found that the ability of financial information, such as income and cash flow, to predict the benefits of investment is useful for predicting changes in earnings and cash. The ratio of profit and gross profit to sales is quite significant in predicting changes in profit for the following year. However, it is not significant in predicting cash flow. Changes in income and cash flow are significantly affected by earnings persistence. However, earnings persistence has no impact on CSR disclosure and FERC. This is in line with [48] who define earnings persistence as a revision of expected future accounting earnings based on profit from current year earnings. The earnings component as a result of the application of the accrual accounting concept for impairment, write-off, or allowance for losses has limited relevance when applied to the evaluation of a firm [49].

## 5. Conclusions

Based on the results of the analysis and testing of data on the effect of corporate social responsibility disclosure, on the level of predictions of a company’s future earnings (as measured by FERC), the following conclusions are obtained:

Disclosure of corporate social responsibility has a positive effect on the level of predictions of future earnings of a company, as measured by FERC, while company size, growth, earnings persistence, and earnings volatility are control variables. The results of the study state that a significant level of

the future earnings response coefficient (FERC) is able to predict the disclosure of corporate social responsibility. Where it states that the higher the level of profit in banks, the banks will carry out corporate social responsibility activities. As for the control variables in research related to corporate social responsibility, such as company size, growth, earnings persistence, and earnings volatility, it is intended to control those related to the disclosure of corporate social responsibility, but only the earnings volatility variable has an influence on corporate social responsibility disclosure and FERC, while the size variable company, growth, and earnings persistence have no relationship with corporate responsibility disclosure and FERC. This states that the size of the company, both large and small, does not have an impact on the disclosure of corporate responsibility and FERC, for the growth variable, it only states that there is information related to future income, where the predictions of stock prices are uncertain, so that it will have an impact on the disclosure of corporate responsibility. Moreover, the variable earnings persistence can only predict and maintain future profits so that it will have an impact on the disclosure of corporate social responsibility.

### 5.1. Theoretical Contribution

The results of previous research that tested the relationship between the information contained in CSR disclosures and the acquisition of stock returns that reflect a company's future earnings are still very limited. This research is expected to be able to provide an overview of the relationship between the current return received by investors and a company's future earnings, as measured by FERC. The closer the relationship between the current return received by investors and the company's future earnings, after the existence of CSR disclosure information, shows that this information is useful for making investment decisions. In other words, CSR information can be used to predict a company's future earnings.

### 5.2. Practical Contribution

Management needs to pay attention to CSR disclosure to attract investors. With evidence that investors can use information on CSR disclosure as a material to assess a company's ability, company management needs to pay more attention to CSR disclosure as a signal of the company's future capabilities. Other than that, investors also need to consider the company's CSR. The better the company's CSR, the higher the chances of getting a return on investment in the future.

Limitations that we must address include the following:

- a. There is an imbalance in the number of research samples from each country. This occurs because the number of banks registered in the Securities Exchange of each country sampled was different.
- b. Literature on results of previous studies are still very rare.
- c. This study does not accommodate the time difference between samples taken from 2014 to 2018. This is done, considering the number of samples is very small, so we treat all samples in a cross-sectional (not time-series) manner. This research does not consider the possibility of influence from time-to-time, from year-to-year. The use of data for 5 years in this study was only carried out with the aim of increasing the number of observations, in order to be estimated by the weighted least square method, and not to see any difference in influence between times. Future studies need to consider the possibility of influence over time, from year-to-year. Testing needs to be done that can represent the influence of time differences that can provide richer analysis results.
- d. This study only tests the linear relationship between the variables used. There is the possibility of a non-linear relationship between the variables in this study. Future studies can test if there are non-linear relationships between variables in research on CSR Disclosure and FERC.

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**User Thermal Comfort in Historic Buildings: Evaluation of the Potential of Thermal Mass, Orientation, Evaporative Cooling and Ventilation**

by Mamdooh Alhetaishi, Ashraf Balabel, Ahmed Abdelhafiz, Usama Issa, Ibrahim Sharaky, Amal Shamseldin, Mohammed Al-Surf, Mosleh Al-Harhi and Mohamed Gadi  
Sustainability 2020, 12(22), 9672; <https://doi.org/10.3390/su12229672> - 19 Nov 2020  
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Abstract The study investigated the level of thermal comfort in historical buildings located at a relatively high altitude in the Arabian Desert of Saudi Arabia. The study focused on the impact of the use of thermal mass and orientation on the level of thermal [...] Read more.  
(This article belongs to the Special Issue New Evidences of Indoor Thermal Comfort in Residential and Tertiary Buildings: Design and Evaluation Methods)

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**The Impact of Corporate Social Responsibility Disclosure on the Future Earnings Response Coefficient (ASEAN Banking Analysis)**

by Istianingsih, Terri Trireksani and Daniel T. H. Manurung  
Sustainability 2020, 12(22), 9671; <https://doi.org/10.3390/su12229671> - 19 Nov 2020  
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Abstract Corporate social responsibility in the banking industry has an impact on the environment and society. Research was conducted on the impacts of environmental social responsibility disclosure on future income response coefficients of The Association of South East Asian Nations (ASEAN) Banking to determine [...] Read more.

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**Generating Marketing Outcomes through Internet of Things (IoT) Technologies**

by Beenish Tariq, Sadaf Taimoor, Hamad Najam, Rob Law, Waseem Hassan and Heesup Han  
Sustainability 2020, 12(22), 9670; <https://doi.org/10.3390/su12229670> - 19 Nov 2020  
Cited by 2 | Viewed by 1031

Abstract This paper highlights the effectiveness of data stored from the operational use of Internet of Things (IoT) technologies for generating marketing-related outcomes, such as business intelligence for product development, product support, and customer Back to Top

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**A Prototype Plant for Oilseed Extraction: Analysis of Mass and Energy Flows**

by Ramoon B. L. Temporim, Alessandro Petrozzi, Valentina Coccia, Franco Cotana and Gianluca Cavalaglio  
Sustainability 2020, 12(22), 9786; <https://doi.org/10.3390/su12229786> - 23 Nov 2020  
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Abstract The focus of this study is to analyze the energy flows related to cardoon oil processing based on the estimated electricity consumption. It was carried out in a prototype oilseed extraction plant located in Umbria Region, Italy. This installation consists of the following [...] Read more.  
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**MultiDefectNet: Multi-Class Defect Detection of Building Façade Based on Deep Convolutional Neural Network**

by Kisu Lee, Goopyo Hong, Lee Sael, Sanghyo Lee and Ha Young Kim  
Sustainability 2020, 12(22), 9785; <https://doi.org/10.3390/su12229785> - 23 Nov 2020  
Cited by 5 | Viewed by 1226

Abstract Defects in residential building façades affect the structural integrity of buildings and degrade external appearances. Defects in a building façade are typically managed using manpower during maintenance. This approach is time-consuming, yields subjective results, and can lead to accidents or casualties. To address [...] Read more.  
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