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## Article

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# Oil Price and Corporate Social Responsibility Disclosure (CSRD): Evidence from Indonesian Energy Companies

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## ABSTRACT

This study aims to examine the effect of world oil prices and other fundamental factors, which consist of the exchange rate, inflation, return on assets (ROA), debt to equity ratio (DER), and current ratio (CR) to the disclosure of corporate social responsibility (CSRD). The research sample is seven mining sector companies listed on the Indonesia Stock Exchange during 2017-2022. The estimation method and data analysis used a panel data regression model. The study's empirical findings show that world oil prices, exchange rates, inflation, and ROA positively affect CSRD, while DER and CR have the opposite effect. Macroeconomic variables, including world oil prices, exchange rates, and inflation, significantly encourage mining sector companies to disclose CSR more broadly. The increasing liquidity causes limited CSRD and leverages financial performance, while the profitability of the impact is different.

**Keywords:** Corporate Social Responsibility Disclosure, Oil Price, Mining Companies, Indonesia

**JEL Classifications:** M14, E31, G32, F31

## 1. INTRODUCTION

The Corporate Social Responsibility (CSR) program is essential for companies in the energy sector because the product's impact can be bad for the environment and the community. Therefore, energy companies are asked to carry out various sustainable CSR activities that cover multiple dimensions, including environmental performance, social impact, human and labor rights, and sustainable development (Choumert-Nkolo, 2018). CSR programs are also crucial for companies because they can increase a positive image, brand awareness, and environmental sustainability. Mobus (2012) said that the CSR focus of energy companies encourages companies to carry out self-promotion rather than self-reflection. The problem, if a company carries out CSR activities regularly, is the emergence of fixed costs that must be allocated. The budgeted costs for CSR activities are determined by the prices of products produced by companies in the energy sector, one of which is the oil price. Another problem arises that crude oil prices are often uncertain, which negatively impacts corporate social

responsibility involvement (Phan et al., 2021). Because CSR is considered a unique long-term investment involving a certain degree of irreversibility, companies can temporarily postpone CSR investments with increased oil prices.

Several recent studies have examined the impact of world oil prices on CSR activities (Chen et al., 2023; Hasan et al., 2020; Hassen and Hamdi, 2022). Chen et al. (2023) prove that rising oil prices affect CSR performance in the energy sector. Hassen and Hamdi (2022) found that oil demand shocks positively impact CSR behavior, while oil supply shocks negatively impact CSR activities. Hassen and Hamdi (2022) show that oil price uncertainty negatively affects CSR. Besides world oil prices, CSR is also influenced by other macroeconomic variables, namely inflation and exchange rates. Inflation can affect a company's relationships with customers, employees, and other stakeholders, giving rise to a crisis of trust. This is especially true when many people accuse companies of raising prices excessively to maximize profits. De Ferro and Ramelli (2023) find that in the months following higher

inflation levels, equity investors reward companies with social capital, as proxied by their level of CSR. Overall, these findings highlight inflation as a crisis of stakeholder confidence and provide new insights into the importance of social capital for firm value. Foreign exchange rates also determine whether companies conduct CSR disclosure (CSRD) practices. The currencies of countries with high CSRD ratings should be more stable and provide protection against bad countries when other riskier currencies depreciate (Filippou and Taylor, 2021).

Besides macroeconomic variables, financial characteristics, including liquidity, profitability, and leverage, also play a role in determining a company's CSR activities. Apart from varying the use of factors in research, empirical findings also provide mixed results. Činčalová and Hedija (2020) revealed a negative and moderate relationship between corporate financial performance and CSR. Companies that report higher financial performance have lower levels of CSR and vice versa. Salehi et al. (2019) revealed a significant negative relationship between financial leverage and profitability and the level of CSRD. Ahmed et al. (2022) prove that the company's profitability and financial leverage significantly influence the level of CSRD. Andrikopoulos et al. (2014) found that highly leveraged financial firms disclose more CSR practices. Le et al. (2023) prove that profitability and leverage do not affect CSRD. Asmeri et al. (2017) also prove that profitability does not affect CSRD. Ariyani and Hartomo (2018) found that liquidity and profitability did not impact CSRD.

## 2. LITERATURE REVIEW AND HYPOTHESES

The CSR concept focuses on the triple bottom line: Economic prosperity, environmental quality, and social justice. The company can continue its business activities by implementing the triple bottom line concept into three aspects, namely profit, involvement in fulfilling community welfare (people), and preserving the environment (planet). The company discloses the social responsibility actions that it has taken to stakeholders in the sustainability report. The company's sustainability report provides a balanced and fair description of the sustainability performance of the reporting organization or company, including the positive and negative contributions they have made in a certain period. Guidelines or standards that companies often use in reporting on their company's sustainability are the Global Reporting Initiatives (GRI). Idowu (2016) state that the concept of CSR reporting initiated by GRI is the concept of sustainability reporting. The triple bottom line method is used in the sustainability report, where CSRD is not only reported from an economic perspective but must also be reported from an environmental and social perspective.

### 2.1. CSR Practices in the Energy Sector

The energy sector, including Indonesia, drives economic activity worldwide (Jiuhardi and Michael, 2022). Another problem arises because the energy sector is one of the world's largest emitters of Greenhouse Gas (GHG), which hurts the environment. This condition has become a concern for various stakeholders, including environmentalists, shareholders, investors, and regulators (Florini

and Saleem, 2011; Abdelnur, 2021; Suharti et al., 2023; Alawi, 2024). Therefore, to gain social support from stakeholders, energy companies must commit to CSR practices by considering environmental sustainability requirements (Lu et al., 2019). Commitment to CSR practices has pressured energy companies to respond adequately to societal needs and expectations (Rheynaldi et al., 2023).

CSR has developed into a standardized management concept in which companies assume ethical, social, and environmental responsibilities toward society (Fatmawatie and Endri, 2022). The concept developed based on values aligns strategic CSR with environmental management and stakeholder approaches to achieve sustainable corporate performance in the long term. Agudelo et al. (2020) revealed three determining factors for using the CSR concept in energy sector companies, namely: internal (business strategy, corporate culture, efficiency and profitability, environmental commitment, and climate change mitigation); external (competitiveness, legislative and regulatory framework, social commitment, and stakeholder engagement); and linking drivers (branding and reputation, reporting and disclosure, and social license to operate).

Based on the Global Reporting Initiatives (GRI) framework guidelines version 4 or G4, which has three economic, environmental, and social categories, consisting of 91 indicator items of energy sector responsibility (Orazalin and Mahmood, 2018).

1. The economy comprises economic performance, market existence, indirect economic damage, and procurement practice.
2. Environment, made up of material, energy, water, biodiversity, emission, effluent and waste, product and service, obedience, transportation, supplier assessment on the environment, mechanical assessment complaint regarding environmental problems
3. Social, made up of:
  - a. Sub-category: Employment practice and comfort during work, made up of employment, industrial relationship, work health and safety, training and education, diversity and equality of opportunity, equality of women and men remuneration, supplier assessment regarding employment practices, mechanism of employment conflicts complaint
  - b. Sub-category: Human rights, made up of investment, non-discrimination, freedom of association and collective labor agreement, child worker, forced labor or taxpayer, security practices, customary rights, supplier assessment regarding human rights, mechanism of human right conflicts complaint
  - c. Sub-category: General public, made up of local public, anti-corruption, public Policy, aspects of monopoly practice and its result, obedience, supplier assessment towards social impact, mechanism of social impact conflicts complaint
  - d. Sub-category: Product responsibility, made up of employee safety and health, product and service label aspect, marketing communication spect, customer privacy, obedience.

## 2.2. Profitability and CSR

Legitimacy theory explains that a company will get a good response from consumers and directly impact their purchasing decisions if it has high profitability because it is considered capable of financing CSR activities. With high profitability, corporations must strive to act in ways that positively impact society and reduce negative environmental impacts. In contrast, companies with low profits reveal more information that their business activities contribute to social value and benefit society (Dyduch and Krasodomska, 2017). Research examining the impact of profitability on and levels of CSR provides mixed empirical evidence. Roberts (1992) found a positive influence of profitability on CSR. Jennifer Ho and Taylor (2007) revealed that companies with smaller profits tend to provide more CSR information. McWilliams and Siegel (2000) and Nelling and Webb (2009) also prove that profitability affects CSR. Reverte (2009) and Siregar and Bachtar (2010) found that profitability does not determine a company's CSR practices. Based on empirical evidence, the research hypothesis is:

H1: Profitability has an impact on CSR

## 2.3. Liquidity and CSR

Liquidity is one of the financial performances that investors use as a benchmark in assessing a company. If the liquidity generated by a company is low, the company will likely make higher CSR disclosures. Abd-Elsalam and Weetman (2003) revealed that higher liquidity increases the company's willingness to carry out CSR. Ezat and Em-Masry (2008) found a positive influence of financial liquidity on CSR. Samaha and Dahawa (11) also prove the positive influence of liquidity on voluntary CSR. More CSR information is released if the company can achieve excellent financial performance through increased liquidity ratios. A higher liquidity ratio can increase access to new business opportunities, so companies should disclose more social information voluntarily (Waddock and Graves, 1997; Riyani et al., 2023). Therefore, the research hypothesis is formulated as follows:

H2: Liquidity has an impact on CSR

## 2.4. Leverage and CSR

Large leverage loads open up the possibility of companies violating credit agreements, where companies will try to report higher profits by reducing costs, including the costs of social responsibility disclosure. Conversely, a low level of leverage causes debt holders to exert slight pressure to limit CSR activities (Brammer and Pavelin, 2008). Purushothaman et al. (2000). Reveals the negative impact of leverage on CSR because companies with high leverage have closer relationships with their creditors and use other means to disclose CSR information. Abd Rahman et al. (2011) and Ariyani and Hartono (2018) prove that the opposite positively impacts CSR. Reverte (2009) found that leverage did

not affect CSR. Empirical findings are different from each other, so the research hypothesis is:

H3: Leverage has an impact on CSR

## 2.5. Exchange Rate and CSR

The exchange rate has quite a significant influence on the company's current balance or other macroeconomic variables. The exchange rate is the relative price of a currency towards another currency (Moosa, 2005). In a company that does import and export transactions, the exchange rate depreciation may influence the company. This will cause the company's financial risk to increase so that the disclosure of the company's CSR will decrease. The influence of the exchange rate on corporate social responsibility is in line with the research done by Macerinskiene and Balciunas (2015), which states that the exchange rate in a country significantly affects its social responsibility. Filippou and Taylor (2021) reveal the negative influence of foreign exchange on CSR, indicating the "safe-haven" nature of currencies with high ESG. Based on the description above, the following hypothesis is suggested:

H4: Exchange rate has an impact on CSR

## 2.6. Oil Price and CSR

Fluctuations in crude oil prices can affect CSR investments, especially in energy companies. High oil price volatility can increase marginal production costs because oil is an essential input cost in the entire production chain, and this naturally leads to a reduction in CSR investments. Apart from that, increasing oil price uncertainty impacts reducing consumer spending and causing product demand for various company categories to decrease. As a result, as a corporate reaction, investments in the environmental, social, and governance fields and subsidies allocated to NGOs working in the CSR sector will be reduced or stopped. Hassen and Hamdi (2022) reveal that oil price uncertainty has a negative effect on CSR. Lee et al. (2013) state that the change in oil price significantly influences a company's social responsibility. Based on the description above, the following hypothesis is suggested:

H5: Oil price has an impact on CSR

## 2.7. Inflation and CSR

Inflation is a sustainable increase in the overall price level of goods and services because price increases are not just temporary fluctuations (Girdzijauskas et al., 2022). Inflation is also broad-based in that price increases are related to the general cost of living and are not limited to just one or two goods or services. The increase in the cost of living impacts decreasing sales and company income, which also has implications for reducing the ability to carry out CSR activities. Krambia-Kapardis et al. (2023) revealed that inflation negatively influences CSR. This is because

**Table 1 : Description of research statistic variable data**

	CSR	ROA	DER	CR	FOREX	WTI	IR
Mean	0.273786	0.029997	0.701640	2.412071	0.033423	-0.087360	4.294000
Median	0.197800	0.027500	0.628700	1.720000	0.015381	-0.248400	3.350000
Maximum	0.956000	0.207200	6.771400	9.463400	0.103369	0.450300	8.360000
Minimum	0.033000	-0.643900	-7.174000	0.099000	-0.026344	-0.458700	3.020000
SD	0.214371	0.139383	1.989091	2.441489	0.046524	0.335006	2.072830

Source: Processed data (2023)



reporting entities are expected to face financial difficulties as prices increase and will only undertake expensive practices if they are forced to do so. Nwobu and Ngwakwe (2020) revealed that inflation does not affect CSR reporting. Based on the description above, the following hypothesis is suggested:

H6: Inflation has an impact on CSRD

### 3. METHODOLOGY

This research is quantitative, with a quantitative approach in numbers to answer the research problem. Based on the level of explanation, this research is associative research to find a relationship between two or more variables. The research aims to analyze the influence of ROA, DER, CR, exchange rate, oil price, and inflation on the CSRD of companies in the energy sector. The research hypothesis is formed based on supporting theories and is proven through statistical evaluations. The conclusion of the result is taken based on the result of the statistical evaluation. The processing of secondary data compiled from various sources is done using software, including Microsoft Excel 2013 and EViews 12.0. Microsoft Excel 2013 is used to create tables and analyze the data. Meanwhile, the author used the EViews 12.0 software to process the data panel regression.

The research model used is as follows:

$$CSRD_{it} = \alpha + \beta_1 ROA_{it} + \beta_2 CR_{it} + \beta_3 DER_{it} + \beta_4 FOREX_{it} + \beta_5 WTI_{it} + \beta_6 IR_{it} + \epsilon_{it}$$

$$i=1,2,\dots,N; t=1,2,\dots,T$$

Where:

CSRD = Corporate Social Responsibility Disclosure, ROA = Return on Asset, CR = Current Ratio, DER = Debt to Equity Ratio, FOREX = Rupiah Exchange Rate of Rupiah against US Dollars, WTI = World Texas Index, IR = Inflation, Component Error, Slope, Intercept, i = Company, t = Year, N = amount of observation, T = time, N × T = amount of data panel.

This research aims to test the influence of an independent variable, which is the return on asset, current ratio, debt to equity ratio, exchange rate, and world crude oil price, against the dependent variable of corporate social responsibility disclosure. The population of this research is represented by energy companies registered on Indonesia's Stock Exchange from 2017 until 2022. The data obtained from the research is then analyzed with the data panel regression model, which aims to determine the magnitude of the influence of Return on Assets, Current Ratio, Debt to Equity Ratio, Exchange rate, Oil Price, and Inflation towards Corporate Social Responsibility. Before the data, panel regression analysis is first analyzed using statistical description, data panel evaluation method, and hypothesis testing.

The following is the measurement of the variable used in this research: CSR is proxied using a disclosure ratio divided by 91 indicators based on GRI-G4. Profitability is proxied using the ROA in this research, which is measured by dividing net profit by total assets. Liquidity is proxied using the current ratio, which, in this

research, would be dividing current assets by current liabilities. Leverage is proxied using the debt-to-equity ratio, which would divide current liabilities by capital in this research. Meanwhile, for the exchange rate variable, oil price and inflation will be measured with the exchange rate, oil price, and inflation.

Table 1 presents a description of research statistical data consisting of Mean, Median, Maximum, Minimum and Standard Deviation. The standard deviation value is experienced by the CR variable, which is 2.441489, meaning that the CR variable has a higher risk level than the other variables. In the meantime, the exchange rate variable (FOREX) has the lowest level of risk, which is at 0.046524. The dependent variable, CSR, showed an average of mining companies amounting to 0.273786 with a standard deviation of 0.214371. The average value of the CR variable is 27%. This is because the GRI 4 is used. It has 91 indicators, which is more than compared to the previous revision, resulting in the disclosure percentage being lower than GRI 3, which only has 78 indicators. The low average of the CSRD in this research is obtained only from the sustainability report.

### 4. RESULTS

The data panel regression model to estimate the determinant CSR of the energy companies is based on three models: common effect, fixed effect, and random effect. The model applied in this research will be analyzed further using pair tests for each model. The result of the pair tests using the Chow test, LM Breusch-Pagan (BP) test, and Hausman test on the 3 data panel regression model above is summarized in Table 2. From the result, it can be concluded that a random model is used to estimate and analyze the determinant of CSR of energy companies registered in the Indonesia Stock Exchange in 2017-2022.

The result of estimating the determinant of CSR of energy companies which are registered in the Indonesia Stock Exchange in 2017-2022, consisting of Return on Assets (ROA), Debt to Equity Ratio (DER), Current Ratio (CR), world crude oil price (WTI), rupiah exchange rate (FOREX), and inflation (IR) using the random model method shown in Table 3 can be written in the following equation:

$$CSR = -0.879859401557 + 0.380369629291 * ROA - 0.0170682740595 * DER - 0.0258065395871 * CR + 12.3365906038 * FOREX + 1.9287823179 * WTI + 0.226509605615 * IR$$

The t-test result showed that the ROA variable influenced the CSR of energy companies positively and significantly with a confidence level of 95%, where the t-statistic probability value (0.0118) is smaller than  $\alpha = 0.05$ , meaning that  $H_0$  is rejected. This research's empirical finding aligns with the research hypothesis, which states that the ROA variable influences the disclosure of the CSR of energy companies registered in the Indonesia Stock Exchange in 2017-2022.

The t-test result showed that the CR variable has a negative and significant impact on the disclosure of the CSR of energy companies, where the t-statistic probability value (0.0224) is

**Table 2: Conclusion of data panel regression evaluation**

No	Method	Testing	Result
1	Chow-test	Common effect versus fixed effect	Fixed effect
2	Lagrange multiplier-BP	Common effect versus random effect	Random effect
3	Hausman test	Fixed effect versus random effect	Random effect

**Table 3: Determinant of CSR: Estimation random effect model**

Variable	Coefficient	T-statistic	Prob	Conclusion
ROA	0.380370	2.693518	0.0118	Significant
DER	-0.017068	-2.518998	0.0178	Significant
CR	-0.025807	-2.417811	0.0224	Significant
FOREX	12.33659	14.65479	0.0000	Significant
WTI	1.928782	11.72229	0.0000	Significant
IR	0.226510	13.02079	0.0000	Significant
Constanta=-0.879859				
F. Signifikan=0.006000				
R-squared=0.454518				
Adjusted Rsquared=0.337628				

Sources: Data processed (2023)

smaller than  $\alpha = 0.05$ , meaning that  $H_0$  is rejected. This research's empirical finding aligns with the research hypothesis, which states that the CR variable affects the disclosure of the CSR of energy companies registered in the Indonesia Stock Exchange in 2017-2022.

The t-test result showed that the DER variable has a negative and significant influence on the disclosure of the CSR of energy companies, where the t-statistic probability value (0.0178) is smaller than  $\alpha = 0.05$ , meaning that  $H_0$  is rejected. This research's empirical findings align with the hypothesis that states that the DER variable affects the disclosure of the CSR of energy companies registered in the Indonesia Stock Exchange in 2017-2022.

The t-test result showed that the FOREX variable has a positive and significant influence on the disclosure of CSR of energy companies, with the confidence level at 95% and the t-statistic probability value (0.0000) smaller than  $\alpha = 0.05$ , meaning that  $H_0$  is rejected. The empirical findings of this research align with the research hypothesis, which states that the FOREX variable affects the disclosure of the CSR of energy companies registered in the Indonesia Stock Exchange in 2017-2022.

The t-test result showed that the WTI variable has a positive and significant influence on the disclosure of CSR of energy companies, where the t-statistic probability value (0.0000) is smaller than  $\alpha = 0.05$ , meaning that  $H_0$  is rejected. This research's empirical findings align with the research hypothesis, which states that the WTI variable affects the disclosure of the CSR of energy companies registered in the Indonesia Stock Exchange in 2017-2022.

The t-test result showed that the IR variable has a positive influence and significant influence on the disclosure of CSR of energy companies, with the confidence level at 95% and the t-statistic

probability value (0.0000) smaller than  $\alpha = 0.05$ , meaning that  $H_0$  is rejected. The empirical findings of this research align with the research hypothesis, which states that the IR variable affects the disclosure of the CSR of energy companies registered on the Indonesia Stock Exchange in 2017-2022.

## 5. DISCUSSION

The ROA variable positively and significantly affects energy companies' CSRD. From this result, companies with a high level of profitability do not necessarily engage in more social activities, as they are more focused on profit. This happens during the research process; when a company experiences a decrease in profit, it will disclose more of its social responsibility to maintain its reputation in society. This phenomenon aligns with the agency theory, where companies with low net profit will spend money on management interests, one of which is to increase their reputation in society by disclosing their social responsibility more broadly. Another argument is made by Fathonya et al. (2020). The result of this research supports the previous research done by Jaffar et al. (2007), Naser et al. (2002), Cheung et al. (2010), Nelling and Webb (2009), Reverte (2009), Babalola (2012), Bolanle et al. (2019), Endri et al. (2020), and Ricardianto et al. (2023). However, these have no support for the previous research done by Dyduch and Krasodomska (2017), which states that profitability has yet to do so with the disclosure of CSR in Poland.

The debt-to-equity ratio (DER) significantly and negatively influences energy companies' disclosure of CSR in Indonesia. This result shows that companies with high levels of DER are very dependent on external loans to fund their assets, so the company will report a higher profit and reduce the costs, including the costs of CSRD. This means that the higher the level of leverage, the smaller the chance the company will disclose its social responsibility activities, as the company prioritizes fulfilling its creditors in the form of yearly company reports giving the information needed to ensure that the creditor will get their money back. This result is relevant with research done by Khemir and Baccousche (2015), Gallego-Álvarez and Quina-Custodio (2016), Esa and Anum Mohd Ghazali (2012), Wahyuningsih and Mahdar (2018), Reverte (2009), Belkaoui and Karpik (1989), Endri (2019), Alfiah (2019), Verwijmeren and Derwall (2010), Sheikh (2019), and Cormier and Magnan (1999). This result, however, does not support the research of Irham et al. (2018), which states that leverage does not influence the disclosure of CSR.

The current ratio (CR) variable significantly and negatively influences the disclosure of CSR of energy companies in Indonesia. This result shows that companies will look at their level of liquidity when making a CSR disclosure. The government controls the regulation, which requires companies to do their responsibility as part of society, so they will still disclose CSR items while looking at high or low liquidity levels. This result is in line with the research done by Shehata et al. (2014), Ezat and Masry (2008), Samaha and Dahawy (2011), Camfferman and Cooke (2002), and Cooke (1989).

The rupiah exchange rate (FOREX) variable significantly and

positively influences the disclosure of energy companies' CSR. This is caused by the weakening of the rupiah exchange rate, which positively influences the disclosure of a company's CSR. Furthermore, if the rupiah exchange rate weakens, it will cost the company operational costs. Therefore, it will affect the broadness of the company's CSR disclosure. This is in line with the legitimacy theory, which states that the company has a contract with society to do its activities based on values of justice. This result is in line with the research done by Macerinskiene and Balciunas (2015). The crude oil price (WTI) variable significantly and positively influences the disclosure of energy companies' CSR. This result shows an increase in the consumption of natural oil and gas in energy companies, which causes fluctuation in the company's operational costs. Therefore, it will cause the company's disclosure of CSR to be broader. This result is supported by the research done by Fitriaty et al. (2018) and Lee et al. (2013). The inflation variable (IR) influences energy companies' CSR disclosure significantly and positively. This result shows that the level of inflation in Indonesia during the research period caused CSRD, especially in the economic indicator. During the research period, the level of inflation experienced decreases every year. This causes the disclosure of CSR in the economic category to decrease and switch to another category, such as the environmental category. This result is in line with the research done by Belasri et al. (2020), Berthe and Eliie (2015), and Cho et al. (2019).

## 6. CONCLUSION

The result of this research shows that the return on asset (ROA), currency exchange rate (FOREX), oil price (WTI), and inflation (IR) have a positive and significant effect on the disclosure of corporate social responsibility (CSR) of energy companies registered in the Indonesia Stock Exchange during 2014-2018 period, while the current ratio (CR) variable and debt to equity ratio (DER) has a negative and significant effect towards the disclosure of CSR of energy companies registered in the Indonesia Stock Exchange during 2017-2022 period. This finding implies that when a company does its social responsibilities, it looks at the internal and external factors. This finding has a managerial implication, which shows that the financial performance, ROA, CR, and DER have a small correlation towards the disclosure of CSR, showing that the motivation to disclose CSR is solely to maintain the excellent reputation of the company to the stakeholders, even though there is an increase in profitability in the company. Other than that, the disclosure report of CRS is merely a responsibility the company has to do to obey the government regulations. The company is fulfilling its social responsibility and disclosing CSR to maintain its image and reputation. The motivation to disclose a complete and open report is essential to maintain relationships with shareholders or investors, stakeholders, and the environment. The recommendation for further research would be to develop it by changing the sector of the companies in question, increasing the number of research samples, and extending the research period.

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