



Does Financial Performance Drive Environmental Disclosure and Environmental Cost? Evidence from Indonesia

AFFILIATION:

^{1,2,3} Faculty of Economics and Business, Universitas Indonesia, Indonesia

***CORRESPONDENCE:**

rimakusumarini@gmail.com

THIS ARTICLE IS AVAILABLE IN:

<https://ojs.unud.ac.id/index.php/jiab>

DOI:

10.24843/JIAB.2021.v16.i02.p09

CITATION:

Rini, R. K. & Adhariani, D. (2021). Does Financial Performance Drive Environmental Disclosure and Environmental Cost? Evidence from Indonesia. *Jurnal Ilmiah Akuntansi dan Bisnis*, 16(2), 317-331.

ARTICLE HISTORY**Received:**

26 December 2020

Revised:

03 March 2021

Accepted:

28 April 2021

Rima Kusuma Rini^{1*}, Desi Adhariani²

Abstract

This study examines whether financial performance affects environmental disclosures and environmental costs. Samples from mining and energy companies that are listed on the Indonesia Stock Exchange from 2015 to 2019 were analyzed using the content analysis method and ordinary least square regression. This study finds that financial performance bears a positive relationship to environmental costs that indicates whether assets are efficiently used as a basis to engage in spending on environmental activities. There is a negative relationship between financial performance and environmental disclosure and a positive relationship between environmental cost and environmental disclosures. This study implies wider stakeholder understanding of how financial performance affects environmental cost and disclosure. The study implies a role of the cost element in the relationship between financial performance and environmental disclosure.

Keywords: financial performance, environmental performance, environmental disclosure, environmental cost

Introduction

Since the growing concern of sustainable development and environmental issues became global hot issues, the environmental performance brings discussions among corporations, organizations, and regulators. As many corporations compete in global economy and environmental sustainability practices, environmental performance has motivated companies especially in the heavy industry. According to [Bartels et al. \(2016\)](#) reporting instrument is dominated by heavy industry (mining, oil, and gas). Global Forest Watch (2020) in Environmental Performance Index (EPI) 2020 report stated that during 2016-2018 there are three highest level of annual tree cover loss ever recorded, with losses 29.7, 29.4, and 24.8 million hectares respectively. In Indonesia, there are 269 mining, energy, oil, gas, manufacturing, services, and agribusiness companies produced around 125,5 million tons of hazardous and toxic waste in 2015 ([Latupeirissa & Adhariani, 2020](#)).

It indicates that there is still a lack of environmental attention even though the issues have been stipulated in several regulations such as the Law No. 22 Year 2001 concerning oil and gas companies, and Law No. 4 Year 2009 concerning mining, mineral and coal. Those regulations stated that companies are mandated to engage in social and environmental responsibilities. Mining companies have significant contribution to the changing of social and environmental structure and are categorized in an environmentally sensitive industry, hence they tended to give more disclosure about environmental information compared to companies in the other industries (Trireksani & Djajadikerta, 2016). Besides, the origin characteristic of a company's industry has been identified as a factor that could potentially affected corporate social disclosure practices. Companies which has economic activities related to the environment such as extractive industries are more likely to expose information about their environmental impacts than are companies in other industries (Hackston & Milne, 1996).

Environmental responsibility has been mandated for companies that have business activities related natural resources as stated in the Law No. 40 Year 2007 Article 74 (1) about Limited Liability Company. The explanation about environmental responsibility is also stated on Article (2) that the environmental responsibility obligation is supposed to be allocated and measured as environmental cost of a company. Then Article 66 2 (c) also mandated companies to disclose information about environmental and social responsibility in the annual report. According to the regulations, the environmental cost allocation and information are important parts of environmental responsibility. As Lu & Taylor (2018) describe that environmental performance (EP), environmental disclosure (ED), and financial performance (FP) are three corporate constructs that have relationship and bring competitive strategy for company's success.

Previous study has been dominated by research on the impact of environmental performance and environmental disclosure on the financial performance. The social and environmental disclosure can reduce investors' information uncertainty since it reflects companies' responsiveness and management approach to dealing with dynamic, multidimensional environment and ability to meet the external pressure and to respond to the social needs (Hackston & Milne, 1996). Besides, the association between social and environmental disclosure and performance shows that social improvement made by companies are quickly capitalised by social disclosure in an attempt to create an impression. Those impression are sensitive to important non-market influences, hence it may be in the long-term interest of shareholders (Belkaoui & Karpik, 1989). For example, the environmental disclosure has positive impact on financial performance that indicates corporate reporting which communicate environmental issues may result in heightening financial performance (Al-Tuwajiri et al., 2004; Clarkson et al., 2011; Davis, Guenther et al., 2015). As for the relationship between environmental performance and environmental disclosure, a positive relationship is also documented by Al-Tuwajiri et al. (2004); Clarkson et al., (2011); Lu & Taylor (2018). Unfortunately, the previous study documented the mixed results on the association. For instance, the study of Lu & Taylor (2018) and McPeak, Devirian, & Seaman (2010) captured the negative relationship between environmental performance and financial performance. The negative relationship is also captured between environmental performance and environmental disclosure (Cho & Roberts, 2010; Patten, 2002). This inconsistency result between environmental disclosure (ED) and financial performance (FP), environmental

performance (EP) and ED, EP and FP create a research gap in terms of the possibility of another variable that may join the association (Ullmann (1985). As FP and EP reflects the disclosure on companies performance (Lu & Taylor, 2018), FP can affect the environmental disclosure and environmental performance. It indicates that companies with high financial performance are freely and flexible to report their responsibility activities (Heinze, 1976). Companies with high profit are able and potentially to allocate spending on many aspects, including environmental and social activities and they tend to disclose that information (Deswanto & Siregar, 2018). Since ED requires real costs, for instance costs to create and develop the systems, costs to measure, identify and report the information, hence the profit aspect is important to bear the costs (Qiu et al., 2016). Environmental cost is also related to companies' ability to integrate environmental effort into business strategy (Christmann, 2000). According to that argument, this research attempts to fill the gap by identifying the environmental cost (EC) rather than EP and the association between FP and ED. Hence, this study will observe how FP affect ED and EC in the context of mining firms listed on the Indonesia Stock Exchange (IDX) for 3 years (2017-2019).

Profitability is one of the factors that lead management to organize and freely to report the CSR to stakeholder. It is an indication that companies are able to arrange and allocate their spending to some aspects such as environmental and social activities are supported by high profit (Heinze, 1976). When companies are frequently involved in environmental and social activities, they have more information to be exposed (Clarkson et al., 2008). Hence, the high profitability is followed by more social disclosure (Bowman & Haire, 1976). According to legitimacy theory, companies with better financial performance will subject to more political and public safety pressure that led them to public attention, hence disclosing more information will be needed to confirm their legality (Wilmshurst & Frost, 2000). Confirming this idea, Murphy (2002) documented that financial performance reflected by return on equity (ROE) and return in asset (ROA) have been shown to improve environmental performance. Similar to Qiu et al. (2016) who found that lagged financial performance and environmental responsibility disclosure has positive relationship. It suggested that companies which have some track record of being profitable possess some resources and willingness to commit on environmental and social aspect. Other studies by Gray et al. (1995) found the association between lagged financial performance and CSR disclosure. On the other hand, some studies documented the opposite results that there is no positive relationship between financial performance and environmental disclosure Deswanto & Siregar (2018); (Hackston & Milne, 1996; Patten, 1991). Even though the results are mixed, this study assume that lagged profitability is one of the significant characteristics of company that drives the information of social and environmental to be disclosed during the year. Hence, according to these arguments, the hypothesis is:

H₁: Financial performance has positive relationship with environmental disclosure

Environmental disclosure requires real costs, for instance costs to create and develop the systems, costs to measure, identify and report the information, hence profitability aspect important to bear the costs (Qiu et al., 2016). The magnitude of environmental cost is such that companies supposed to integrate the environmental efforts into business strategy (Christmann, 2000), thus environmental and social activities entail significant real cost as they involve putting in systems for measuring,

identifying, and reporting the information (Brammer & Pavelin, 2006). Related to environmental aspects, the measurement amount such as waste or greenhouse emissions are likely to increase significantly the companies' expenditure (Deswanto & Siregar, 2018). As (Ullmann, 1985) stated, financial performance enables companies to undertake costly program related to the social demands. It emphasizes that highly profitable companies are seemingly more credible to the public and are quick to resolve social and environmental issues (Cormier & Magnan, 1999, 2003). According to resource-based view (RBV) theory, profitable companies can spend that significant real cost (Blacconiere & Patten, 1994) and pursue environmental strategies by superior management capabilities. In some condition, the inferior management are more likely to have low compliance and incur environment cost reactively (Clarkson et al., 2011). It is also supported by voluntary disclosure theory (VDT) that companies who disclose objective information about environmental and social practice, process, and performance can attract significant attention in terms of contractual and reputational proprietary (Blacconiere & Patten, 1994). Thus, financial performance can act as a resource to allocate environmental cost activities. According to that argument, the hypothesis is:

H₂: Financial performance has positive relationship with environmental cost

Companies that have great environmental performance are motivated to provide information in the form of disclosure for investors and stakeholders compared to companies with poor environmental performance (Clarkson et al., 2008). It indicates that the company has sacrificed assets and allocated environmental costs will be disclosed in a cost reporting model (Clarkson et al., 2008). Due to environmental cost reporting model provides transparency, especially regarding the environmental impacts and the company's business operations (Raiborn et al., 2011), companies that have good news originating from the transparency will tend to increase environmental disclosure in sustainability report or annual report (Gladia & Rahardja, 2013; Iatridis, 2013). Companies with adequate environmental disclosure can provide the information resulted from active environmental performance actions. Thus, the company legitimizes these actions as ethical actions which is in line with environmental values. Deegan & Rankin (1999) has documented that account users in Australia legitimize the existence of environmental information, but in practice this information has not been reflected in the company's environmental disclosure due to less informative form of the information presented. These results are also consistent with Owen (1994) in the UK. It indicates that companies carried out environmental performance in practice, nevertheless the reporting is not necessarily informative. On the other hand, some studies show that environmental disclosure is positively related to environmental performance because companies that have high profitability and high capital expenditures are reflected in the company's environmental performance (Iatridis, 2013). In addition, this positive relationship also reflects the existence of a company image that is proactive to the environment (Al-Tuwaijri et al., 2004). Good quality of environmental disclosure reflects environmentally friendly policies that direct positive perceptions from investors. Thus, this study expects that there is a positive relationship between environmental cost and environmental disclosure. According to the theory of legitimacy, companies will disclose their environmental information as a measure of legitimacy to show that company's

profitability is allocated to fund the environmental cost. According to that argument the hypothesis is:

H₃: Environmental cost has positive relationship with environmental disclosure

Research Method

Sample of this study consists of mining companies listed in Indonesia Stock Exchange covering the years 2015-2019 (five years) with total 48 companies. 1 company is excluded from the sample since it was listed in 2019, 3 companies does not have available reports on 2015-2019, and 2 companies on 2015 does not have available report. Further, based on the availability of the reports, this study is left with a final sample consisting of 42 companies for 2015, 44 companies on 2016-2019. In total, these make up 218 firm-year observation with unbalance panel data.

The independent variable of the study is mining companies' financial performance. The dependent variables are environmental disclosure and environmental cost. In this study, the financial performance is measured by using ROA (Return on Asset). Consistent with Jan et al. (2019) financial performance used in this study is in accordance with the management perspective reflected by the return on assets (ROA). The ROA is the contemporaneous ratio of the year, as Lu and [Abeysekera \(2014\)](#) find that profitability is one of the characteristics of companies that lead them to disclose social and environmental responsibility initiatives significantly during the year.

The environmental disclosure is total score computed from an index that using the content analysis method to measure total environmental disclosure in corporate annual and sustainability reports. The index is based on the Global Reporting Initiative sustainability reporting guidelines to assess the extent of discretionary environmental disclosure. According to Clarkson et al. (2008), environmental disclosure consists of hard disclosure and soft disclosure in GRI-based index consists of seven categories (A1-A7) that covered 95 weighted items. There are 79 weighted items relate to "hard" disclosure and 16 for "soft" disclosure items. A1-A4 to represent "hard" and A5-A7 "soft" environmental disclosure, respectively. Category of "hard" disclosure is designed to make it relatively difficult for companies who has poor environmental performance to mimic or imitate the environmental disclosures of good environmental performers. Category of "soft" disclosure is a kind of initiatives that can represent true commitment but they can also be imitated by companies with no real commitments to protecting the environment ([Clarkson et al., 2008](#)).

This study uses environmental cost based on reclamation cost as environmental obligation of mining companies that are regulated in the Government Regulation No. 78 Year 2010. The environmental activities are also regulated in the Law No. 40 Year 2007 about Limited Liability Company, Law No. 22 Year 2001 about oil and gas companies, and Law No. 4 Year 2009 about mining mineral and coal. Few studies identify the variable of environmental cost in the relationship between financial performance and environmental disclosure. Meanwhile, the cost is the element that company should spend to indicate good profitability ([Blacconiere & Patten, 1994](#)). Companies with better financial performance, including environmental and social performance, should be more willing to incur these costs ([Cormier & Magnan, 2003](#)). According to GRI standards, environmental costs are also regulated especially in GRI G4-EN31 about total expenditure regarding the investment and environmental protection such as 1) cost of

waste disposal, emissions treatment, and remediation, 2) cost of environmental management and prevention.

Table 1. Summary of Variable Definitions, Measurement, and Sources

Category	Measure	Definition/Measurement	Source
Financial Performance	ROS	Return on Sales – the ratio of earnings before interest and taxes to net sales.	Thomson Reuters
	Tobin's Q	Ratio of market value of equity to total assets.	Thomson Reuters
Environmental Disclosure	Total disclosure scores	Total disclosure computed by adopting the content analysis to measure total environmental disclosure scores that consist of hard disclosure and soft disclosure in corporate annual and sustainability reports (Clarkson, 2008). Ration Total environmental score divided 95 (Maximum Scores).	Annual Report, Sustainability Report
Environmental Cost	Total environmental costs	Total environmental costs that consist of reclamation cost and environmental activities cost disclosed in corporate annual and sustainability reports.	Annual Report, Sustainability Report
Firm Size	Size	Natural logarithm of net sales	Thomson Reuters
Leverage	Lev	Total debt divided by total assets.	Thomson Reuters
Growth	ROA	Return on Assets – the ratio of earnings before interest and taxes to total assets.	Thomson Reuters
	MKTBK	Ratio Market value of equity to book value of equity.	Thomson Reuters
BVPS		Book Value per Share.	Thomson Reuters
Profit Margin	MARGIN	Ratio net income to net sales.	Thomson Reuters
Capital Intensity	CAPINT	Ratio net property, plant, and equipment to total asset.	Thomson Reuters

Source: Processed Data, 2020

Since 2017, there were revisions of disclosure from G4 to GRI standards. According to mapping from GRI G4-EN31 to GRI standards, the environmental expenditure provisions are 1) GRI 103 – management approach. Reporting on resources as specified in Disclosure 103-2-c-v, companies should describe the resources allocated to management topics, such as finance, people, or technology, as well as the reasons for the allocation. This description can include expenses to prevent, reduce, and reverse impacts. The expenses can include on equipment, maintenance, operating materials and services, training and education, external certification for management systems, research and development, or the installation of new technology. 2) GRI 305 – emissions, disclose expenses for reducing emissions (such as expenses on filters and materials) as well as for the purchase and use of emission certificates. 3) GRI 306 – effluents and waste, reporting the management approach for wastewater (effluent) and waste; the reporting organization can also disclose its expenditure for waste treatment and disposal and also cleaning up costs, including repair costs for spills as specified in disclosure 306-3. 4) GRI 307 – environmental compliance, reporting its management approach to environmental compliance, the reporting organization can also disclose its expenses for environmental liability insurance.

Hence, this study addresses and identifies environmental cost from total reclamation post-mining activities as regulated in the Government Regulation No. 78 Year 2010; cost from environmental activities as regulated in the Law No. 40 Year 2007 about Limited Liability Company, Law No. 22 Year 2001 about oil and gas companies, Law No. 4 Year 2009, and provision of GRI standards.

Control variables in this study are firm size, leverage, growth, book value per share, margin, and capital intensity. Firm size reflect that the larger companies tend to give more information to demonstrate that their activities are legitimate and consistent with the value of good corporate citizenship (Brammer & Pavelin, 2006). Larger companies tend to get significant public attention and subject to regulatory pressures from the external parties (Roberts, 1992). Consequently, this study uses company size to control this factor and measure it with the natural logarithm of total net sales.

Leverage is another control variable that affect the level of disclosures. Low financial leverage companies have more resources to disclose environmental responsibility information (Chih, Chih, & Chen, 2010) and tend to disclose more information to keep and ensure that market participants can assess their financial risks properly (Cormier & Magnan, 2003). Hence, this study speculates that there is a relationship between financial leverage with environmental disclosure and environmental cost. Companies' leverage is measured by the ratio of total debt to total assets.

Growth is ratio of market value of equity to book value of equity (Al-Tuwaijri et al., 2004; Gaver & Gaver, 1993; Smith Jr & Watts, 1992). Growth reflected to control companies' growth (Lanis & Richardson, 2013). Growth companies might have greater asymmetry information between investors and management that lead to agency costs. Consequently, the growth companies are expected to give more information about CSR (Lanis & Richardson, 2013), for example environmental activities and include cost of environmental activities rather than non-growth companies.

Book value per share (BVPS) is ratio of total book value divided by the number of outstanding shares. It reflected the value of company since it show the return of

shareholder (Deswanto & Siregar, 2018; Qiu et al., 2016). The greater BVPS would lead company to disclose more information related to environmental activities.

Margin is ratio of net income to net sales. According to Al-Tuwaijri et al. (2004), this ratio captures both profitability and the existence of competitive market. Companies with great margin relatively disclose more information and enable to fund the environmental activities.

Capital intensity is ratio of net property, plant, and equipment divided by total assets. We include Capital intensity as control variable as previous studies (Aerts & Cormier, 2009; Clarkson et al., 2008; Lanis & Richardson, 2013) found that physical plant and equipment make companies more visible to the public and to community widely. Thus, capital intensive of companies will disclose more information related to environmental activities.

The specific models used in this study comprises of three equations. Equation (1) specifically tests H1, equation (2) tests for H2, and equation (3) tests for H3. Since this study consists of 3 hypotheses that addresses direct relationship, following three equations below are represented for each relationship.

$$\text{Total Environmental Disclosure}_{it} = \beta_0 + \beta_1 \text{ Financial Performance} + \beta_2 \text{ Size} + \beta_3 \text{ Lev} + \beta_4 \text{ Growth} + \beta_3 \text{ BVPS} + \varepsilon_{it} \dots\dots\dots (1)$$

$$\text{Total Environmental Cost} = \beta_0 + \beta_1 \text{ Financial Performance} + \beta_2 \text{ Size} + \beta_3 \text{ Lev} + \beta_4 \text{ Growth} + \beta_3 \text{ Margin} + \varepsilon_{it} \dots\dots\dots (2)$$

$$\text{Total Environmental Disclosure}_{it} = \beta_0 + \beta_1 \text{ Total Environmental Cost} + \beta_2 \text{ Size} + \beta_3 \text{ Lev} + \beta_4 \text{ Growth} + \beta_3 \text{ Capint} + \varepsilon_{it} \dots\dots\dots (3)$$

This study employs the ordinary least squares (OLS) to estimate the result after perform Chow Test, Lagrange Multiplier (LM) Test, and Hausman Test. The result suggested that H1 and H3 use common effect model and H2 use fixed effect.

Result and Discussion

The descriptive statistics show that ROA as proxy of financial performance shows an average of 0,069. The average ratio accession of total scores of environmental disclosures is 0,361 that reflected average mining companies reach below at least 50% index scoring. The total environmental cost has the average amount of 800 Million Rupiah that reflected cost to perform environmental performance at mining companies

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	218	0.069	0.121	-0.319	0.604
Totaled	218	0.361	0.231	0.189	0.958
Totaledec (in Thousand)	218	0.008	0.004	37.000	40,838,063
Size	218	12.143	0.997	9.529	13.716
Lev	218	0.277	0.220	0.001	1.447
Growth	218	3.850	15.322	-7.010	203.736
BVPS	218	1,372.500	3,838.700	-1,763.100	26.760
Margin	218	-2,438.500	18.525	-2,374.700	19.902
Capint	218	0.422	0.211	0.001	0.942

Source: Data processed, 2021

in Indonesia.

The descriptive statistics also show that the average size of mining company in Indonesia 12,143 that reflected ratio of net sales to total assets. Then, leverage ratio with average value 0,277 indicate that mining companies in Indonesia have debt ratio under 1. The average ratio of BVPS, margin, and capital intensity show 1.372, -2.438,5, and 0,422 respectively. Unfortunately, the margin ratio showed negative value that indicates most of mining companies in Indonesia are low performance on sales. An overview of descriptive statistic of all variables are presented in Table 2.

According to correlation matrix that presented in Table 3., there is no correlation above 0,8. It indicates that there is no multicollinearity problem on this data distributions. The test of correlations show that ROA has significant relationship to total environmental disclosure. ROA also has significant correlation to Total environmental cost. On the contrary, total environmental cost has not significant relationship to total environmental disclosure.

This correlation showed that companies have a track record of being profitable especially from activity that utilize assets enable the companies to have resources to commit and allocate funds in environmental activities subsequently disclose more information.

Table 4. reports the result of H₁, H₂, and H₃ testing. There is a negative relationship between ROA and total environmental disclosure with negative coefficient - 0,00041 indicates that H₁ is not accepted. This result is consistent with Deswanto & Siregar (2018) and Hackston and Milne (1996). ROA as profitability indicator has no positive relationship to environmental disclosure indicate that a high profit is not an incentive for companies to intensify their environmental disclosure. This result emphasizes that profitability from utilization of asset is not allocated and enable companies to disclose more information related to environmental.

According to the result of H₂ testing, there is a positive significant relationship between ROA and environmental cost with coefficient 0,001. This indicates that the environmental cost (being a form of public good) should strategically come from the effective use of asset to generate net income. In other words, companies put profit resulted from asset efficiency into consideration to allocate the cost of environmental activities. This result manifested that H₂ is accepted.

The result of H₃ testing indicates that there is positive relationship between

Table 3. Pair-wise Correlation Matrix

Variable	Totaled	Totalec	ROA	Size	Lev	Growth	BVPS	Margin	Capint
Totaled	1.000								
Totalec	0.133	1.000							
ROA	0.012	0.057	1.000						
Size	0.128	0.084	0.266	1.000					
Lev	-0.073	-0.009	-0.111	0.000	1.000				
Growth	-0.038	-0.012	0.020	-0.046	0.028	1.000			
BVPS	0.026	-0.012	0.066	0.116	-0.042	-0.029	1.000		
Margin	0.048	0.011	0.058	0.114	-0.032	0.015	0.022	1.000	
Capint	0.050	0.051	0.040	0.020	0.124	0.112	-0.092	0.020	1.000

1-tailed result

Source: Data processed, 2021

Table 4. Relationship of Financial Performance, Environmental Disclosure, and Environmental Cost

Variables	Environmental Disclosure			Environmental Cost		
	Coef,	t	P> t	Coef,	t	P> t
ROA	-0.411	-2.710	0.003	12,000,000.000	3.700	-0.000
Size	0.090	4.750	0.000	-547,075.500	-1.040	0.150
Lev	-0.205	-2.920	0.002	1,019,617.000	0.550	0.292
Growth	-0.001	-0.390	0.348	-6,482.500	-0.440	0.330
BVPS	-3.55e-06	-0.860	0.194			
Margin				413.059	0.030	0.487
Environmental Cost	1.11e-08	3.300	0.000			
Size	0.048	3.230	0.000			
Lev	-0.177	-2.590	0.005			
Growth	-0.001	-1.100	0.137			
Capint	-239.672	-1.310	0.096			

1-tailed result

Source: Processed data, 2021

environmental cost to environmental disclosure with coefficient 0,001. It manifested that H3 is accepted. this result consistent with (Clarkson et al., 2008; Gladia & Rahardja, 2013). Companies with great environmental performance tends to provide more information in the form of disclosure rather than companies with poor environmental performance. Great environmental performance required real cost as they involve putting in systems for measuring, identifying, and reporting the information. Thus, companies tend to inform the cost of environmental activities into environmental disclosure.

For control variables, firm size is found have positive relationship to environmental disclosure. This is consistent with Brammer and Pavelin (2006), Hackston and Milne (1996), Lu & Abeysekera (2014), and Deswanto & Siregar (2018). Larger companies have wider stakeholders thus they are under the scrutiny to disclose the environmental information to all stakeholders. Otherwise, size do not have positive relationship to environmental cost. This result might indicate that larger companies prefer to focus to environmental information rather than cost of the environmental activities.

The leverage ratio shows a negative relationship to environmental disclosure but positive relationship to environmental cost. This finding indicates that higher leverage will limit the flexibility of funding in the companies to spend on environmental activities; hence, subsequently reduce the information on the disclosure. This is consistent with Brammer and Pavelin (2006) and Deswanto and Siregar (2018). In the other hand, high leverage companies enable to increasing cost of environmental activities that might increasing the liabilities this could lead the opportunities related to taxation activities.

Growth ratio show negative relationship to both environmental disclosure and environmental cost. This result indicates that the growth mining companies do not give more information about CSR. It might emphasize that growth companies do not have greater information asymmetry between management and investors that resulted agency costs, hence growth companies have no positive relationship to both environmental disclosure and environmental cost.

Table 5. Relationship of Financial Performance, Environmental Disclosure and Environmental Cost

Variables	Environmental Disclosure			Environmental Cost		
	Coef,	t	P> t	Coef,	t	P> t
Tobin's Q	-0.326	-2.360	0.009	10,500,000.000	3.400	-0.000
Size	0.077	4.510	0.000	593,519.300	1.150	0.125
Lev	-0.177	-2.590	0.005	-1,046,315.000	-0.580	0.281
Growth	-0.000	-0.450	0.327	-4,908.144	-0.330	0.370
BVPS	-2,890,000.000	-0.700	0.242			
Margin				-6,820,000,000.000	-1.070	0.143

1-tailed result

Source: Processed Data, 2021

Book value per share on [Table 4](#). reflected return of shareholders. It shows negative relationship to environmental disclosure. It also indicates that BVPS would not lead company to disclose more information related to both environmental disclosure and environmental cost. It might be shareholders prefer get information from annual report and sustainability report are supposed to provide a rational vision about a company's future rather than disclosure and expenditures that being used for decision making ([Shehata, 2014](#)).

Margin is ratio that captures both profitability and the existence of competitive market. According to the result on [Table 4](#)., margin has positive but not significant to environmental cost. Companies with great margin might relatively disclose more information and enable to fund the environmental activities.

The last, capital intensity has negative relationship to environmental disclosure on [Table 4](#). Capital intensity is not in line with the expectation that means physical plant and equipment do not make companies more visible to the public and community. Thus, capital intensive of companies has negative relationship to environmental information activities.

To check robustness of the results, another measurement of financial performance is used. Since the ROA was used as a proxy of financial performance on main test, the robustness test use Tobin's Q instead. This measurement related to market perspective that reflected by market value of equity to total assets. The Q value according to Tobin (1978) if $Q > 1$ implies that the company's assets are overvalued, if $Q < 1$ implies that company's assets undervalue. While Q ratio equals to 1 implies that company's assets are fairly rated and that the company is at the equilibrium stage. According to Jan et al. (2019), different financial performance measurement is needed to draw the relationship with environmental sustainability. The different measurement of financial performance can draw various perspective, for instance the management perspective and market perspective, hence this study examines the relationship by using different proxy of financial performance. The result of the robustness test is consistent with the main test. The profitability in terms of Tobin's Q has negative relationship to environmental disclosure, but positive relationship to environmental cost.

Conclusion

This study is aimed at investigating whether financial performance has a positive relationship with environmental disclosure and environmental cost. Since previous study rarely investigate the role of environmental cost, this study proposed the novelty of environmental cost, hence we examine the relationship environmental cost to environmental disclosure as well. The result shows that there is no positive relationship financial performance to environmental disclosure. It indicates that the company does not put the profitability factor to increase the information of environmental activities. On the other hand, there is positive relationship of financial performance to environmental cost. This result confirms that companies utilized the asset efficiently to fund environmental activities expenditure. Then, the result also show that environmental cost has positive relationship to environmental disclosure and confirm legitimacy theory. Companies will disclose their environmental information as a measure of legitimacy to show that company's profitability is allocated to fund the environmental cost.

According to robustness test result, profitability from management and market indicator has consistent result. The difference result in two different dependent variables might indicate that mining companies would prefer to allocate profit to environmental cost than environmental disclosure. Since environmental cost in this study is related to expense that companies could utilized as deductible expense, it might lead to taxation strategy. Compare to environmental disclosure, the utilization of profit to funding environmental activities more impactful on the current year. The provision related environmental disclosure would give impact for long-term strategy. This result remains another discussion for future research. Additionally, This result confirms the RBV theory, stating that companies use the profitability as the resource of funding the environmental cost (Blacconiere & Patten, 1994).

The findings have several implications. Theoretically, this study contributes to further expand the study of impact of industry characteristics on environmental disclosure. In terms of the environmental cost, since previous study only focus on the environmental performance, this study attempts to identify another factor related to environmental activities. It was found that environmental cost is impacted by financial performance from both ROA and Tobin's Q indicating that the source of the expenditure related to environmental activities is from the asset efficiency or asset base and market performance to utilize the environmental activities. Practically, for regulator or government, this study provides additional information on the environmental disclosure and environmental cost in Indonesia. The low disclosure score indicates that there is a need to improve the disclosures of companies in the mining industry. Mining companies are in the environmental sensitive industry; they are supposed to provide sufficient information regarding environmental activities. Unfortunately, there are still lacking information provided in annual report and sustainability report.

There are several limitations of this study. First, there is a lack of data availability especially sustainability report to extracted environmental disclosure. Thus, the index scoring below 50%. It might be Indonesia is still voluntary to publish sustainability report. This is become an issue since Indonesia has many heavy industry companies' characteristics that affected environmental significantly. Future study might investigate comparative study between voluntary country.

Second, this study only focuses on the environmental sensitive industry, thus future study could explore another environmental sensitive industrial sector such as manufacturing and pharmacy sector by consider the legitimacy risk since each sector has different main topic of environmental purposes. For example, mining companies focus on recovery land and environmental post mining, manufacturing company focus on carbon and greenhouse gas emission, and pharmacy focus on waste management. Third, regarding the environmental cost, future study could consider the component of environmental costs by diversifying the environmental activities such as waste management and energy efficiency.

References

- Aerts, W., & Cormier, D. (2009). Media legitimacy and corporate environmental communication. *Accounting, organizations and society*, 34(1), 1-27.
- Al-Tuwaijri, S. A., Christensen, T. E., & Hughes li, K. (2004). The relations among environmental disclosure, environmental performance, and economic performance: a simultaneous equations approach. *Accounting, organizations and society*, 29(5-6), 447-471.
- Bartels, W., Fogelberg, T., Hoballah, A., & van der Lugt, C. T. (2016). Carrots and sticks: Global trends in sustainability reporting regulation and policy. *GRI: Amsterdam, The Netherlands*.
- Belkaoui, A., & Karpik, P. G. (1989). Determinants of the corporate decision to disclose social information. *Accounting, auditing & accountability journal*, 2(1), 0-0.
- Blacconiere, W. G., & Patten, D. M. (1994). Environmental disclosures, regulatory costs, and changes in firm value. *Journal of Accounting and Economics*, 18(3), 357-377.
- Bowman, E. H., & Haire, M. (1976). Social impact disclosure and corporate annual reports. *Accounting, organizations and society*, 1(1), 11-21.
- Brammer, S., & Pavelin, S. (2006). Voluntary environmental disclosures by large UK companies. *Journal of Business Finance & Accounting*, 33(7-8), 1168-1188.
- Chih, H.-L., Chih, H.-H., & Chen, T.-Y. (2010). On the determinants of corporate social responsibility: International evidence on the financial industry. *Journal of Business Ethics*, 93(1), 115-135.
- Cho, C. H., & Roberts, R. W. (2010). Environmental reporting on the internet by America's Toxic 100: Legitimacy and self-presentation. *International Journal of Accounting Information Systems*, 11(1), 1-16.
- Christmann, P. (2000). Effects of "best practices" of environmental management on cost advantage: The role of complementary assets. *Academy of management Journal*, 43(4), 663-680.
- Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, organizations and society*, 33(4-5), 303-327.
- Clarkson, P. M., Overell, M. B., & Chapple, L. (2011). Environmental reporting and its relation to corporate environmental performance. *Abacus*, 47(1), 27-60.
- Cormier, D., & Magnan, M. (1999). Corporate environmental disclosure strategies: determinants, costs and benefits. *Journal of Accounting, Auditing & Finance*, 14(4), 429-451.

- Cormier, D., & Magnan, M. (2003). Environmental reporting management: a continental European perspective. *Journal of Accounting and Public Policy*, 22(1), 43-62.
- Davis, A. K., Guenther, D. A., Krull, L. K., & Williams, B. M. (2015). Do socially responsible firms pay more taxes? *The accounting review*, 91(1), 47-68.
- Deegan, C., & Rankin, M. (1999). Do Australian companies report environmental news objectively? *Accounting, auditing & accountability journal*.
- Deswanto, R. B., & Siregar, S.V. (2018), "The associations between environmental disclosures with financial performance, environmental performance, and firm value", *Social Responsibility Journal*, 14(1), 180-193.
- Gaver, J. J., & Gaver, K. M. (1993). Additional evidence on the association between the investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of Accounting and economics*, 16(1-3), 125-160.
- Gladia, P., & Rahardja, S. (2013). *Pengaruh Environmental Performance Terhadap Environmental Disclosure Dan Hard Environmental Disclosure Perusahaan (Studi Empiris Pada Perusahaan Non-Keuangan Yang Terdaftar Di Bursa Efek Indonesia)*. Fakultas Ekonomika dan Bisnis.
- Gray, R., Kouhy, R., & Lavers, S. (1995). Corporate social and environmental reporting. *Accounting, auditing & accountability journal*, 8(2), 47-77.
- Hackston, D., & Milne, M. J. (1996). Some determinants of social and environmental disclosures in New Zealand companies. *Accounting, auditing & accountability journal*, 9(1), 77-108.
- Heinze, D. C. (1976). Financial correlates of a social involvement measure. *Akron Business and Economic Review*, 7(1), 48-51.
- Iatridis, G. E. (2013). Environmental disclosure quality: Evidence on environmental performance, corporate governance and value relevance. *Emerging Markets Review*, 14(March 2013), 55-75.
- Jan, A., Marimuthu, M., bin Mohd, M. P., & Isa, M. (2019). The nexus of sustainability practices and financial performance: From the perspective of Islamic banking. *Journal of cleaner production*, 228(10 August 2019), 703-717.
- Lanis, R., & Richardson, G. (2013). Corporate social responsibility and tax aggressiveness: a test of legitimacy theory. *Accounting, Auditing & Accountability Journal*, 26(1), 75-100.
- Latupeirissa, G., & Adhariani, D. (2020). External and internal economic impacts of eco-innovation and the role of political connections: A sustainability narrative from an emerging market. *Journal of cleaner production*, 258(10 June 2020), 120579.
- Lu, L. W., & Taylor, M. E. (2018). A study of the relationships among environmental performance, environmental disclosure, and financial performance. *Asian Review of Accounting*, 26(1), 107-130.
- McPeak, C., Devirian, J., & Seaman, S. (2010). Do environmentally friendly companies outperform the market? *Journal of Global Business Issues*, 4(1), 61.
- Murphy, C. J. (2002). The profitable correlation between environmental and financial performance: a review of the research. *Light Green Advisors*.
- Owen, D. L. (1994). *The need for environmental accounting standards*.
- Patten, D. M. (1991). Exposure, legitimacy, and social disclosure. *Journal of Accounting and Public Policy*, 10(4), 297-308.

- Patten, D. M. (2002). The relation between environmental performance and environmental disclosure: a research note. *Accounting, organizations and society*, 27(8), 763-773.
- Qiu, Y., Shaukat, A., & Tharyan, R. (2016). Environmental and social disclosures: Link with corporate financial performance. *The British Accounting Review*, 48(1), 102-116.
- Raiborn, C. A., Butler, J. B., & Massoud, M. F. (2011). Environmental reporting: toward enhanced information quality. *Business Horizons*, 54(5), 425-433.
- Roberts, R. W. (1992). Determinants of corporate social responsibility disclosure: An application of stakeholder theory. *Accounting, organizations and society*, 17(6), 595-612.
- Shehata, N. F. (2014). Theories and determinants of voluntary disclosure. *Accounting and Finance Research (AFR)*, 3(1).
- Smith Jr, C. W., & Watts, R. L. (1992). The investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of financial Economics*, 32(3), 263-292.
- Trireksani, T., & Djajadikerta, H. G. (2016). Corporate Governance and Environmental Disclosure in the Indonesian Mining Industry. *Australasian Accounting, Business and Finance Journal*, 10(1), 18.
- Ullmann, A. A. (1985). Data in search of a theory: A critical examination of the relationships among social performance, social disclosure, and economic performance of US firms. *Academy of management review*, 10(3), 540-557.
- Wilmshurst, T. D., & Frost, G. R. (2000). Corporate environmental reporting. *Accounting, auditing & accountability journal*, 13(1), 10-26.