

Environmental Asset, Environmental Quality, and the Number of Exports

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— *Review of* —
**Integrative
Business &
Economics**
— *Research* —

ABSTRACT

This study aims to investigate the environmental assets owned by companies in Indonesia. It is necessary to be done considering Indonesia has not had accounting standards to recognize, measure, and report capital expenditure and revenue expenditure related to environmental responsibility or conservation done in the company. Sample used is as many as 309 years of food and beverage companies listed in IDX, period of 2001-2015. The result of correlational test shows that corporate export level is relevant with environmental quality certification. On the other side, this study finds difficulty in finding the existence of environment accounts in the corporate financial report, even though the corporate management has disclosed activities of environmental preservation done by the company. Most of the companies disclose financial amount that has been spent for activities of environmental quality improvement. Therefore, the important implication of this study is for policy makers. Regulators are expected to create policies related to environmental standards including names of environmental accounts that are applied for companies in Indonesia.

Keywords: Environmental Accounting, Environmental Quality, Number of Export, Regulation.

1. INTRODUCTION

Environmental problems recently become an important topic in discussion, both in local and international level. Paris Agreement held on 30 November – 13 December 2015 was the summit conference known as 21st Conference of Parties (COP – lastly was known as COP-21) that discussed the climate change. COP-21 has produced agreement of 195 countries that attended the conference, including Indonesia, to keep global warming below 2 degree celcius even 1.5 celcius. This agreement is very important because some previous COP results are considered did not run as expected, among others are COP3 held in Kyoto, Japan resulted The Kyoto Protocol; COP11 created Montreal Action Plan; and COP15 in Copenhagen, Denmark

<http://nationalgeographic.co.id/berita/2015/12/resmi-ketuk-palu-konferensi-perubahan-iklim-dunia-hasilkan-perjanjian-paris>).

This agreement will legally bond and determine evaluation in every five years for the plan of each country to overcome global warming. At least \$100 billion dollars each year, the cost will be spent from developed countries to fund efforts in overcoming the climate change in developing countries, including Indonesia. On 17 October 2016, 10 fractions of Indonesian Parliament (known as DPR) stated to agree for ratifying Draft Law (RUU) on Paris Agreement Ratification. By ratifying this Draft Law, it means that Indonesia is ready to ratify Paris Agreement, followed by the readiness to conduct obligation as the consequence of the ratification. Although on one side, the benefits of the ratification will be obtained in Indonesia, one of them is obtaining supports from developed countries in reducing carbon emissions.

This study is done as the response to environment and as the effort of Indonesia to ratify 2015 Paris Agreement. This study aims to show corporate responsibility toward environment that is viewed from how big of investment on environmental assets done by the company. Penelitian ini dilakukan sebagai respon dari isu lingkungan hidup dan upaya Indonesia meratifikasi Perjanjian Paris 2015. This study will investigate environmental activities done by the company, and the amount of fund allocated for the activities. Next, how corporate export performance on products they produce will be reviewed. This study predicts that company conducting export is company that has good environmental performance, since the issue of environmentally friendly products is more propagated by international consumers.

Environmental study in the area of accounting related to environmental assets has been awhile and much done especially in developed countries. In developing countries, particularly in Indonesia, this study is rarely found. Our search on 15 October 2016 on Google Scholar in keyword: "environmental assets" found 1.010.000 findings in 0.07 second and by using keyword "environmental assets accounting" found 316.000 findings in 0.06 second. From all searches, we did not find that the studies done for a case or by the author in Indonesia.

These evidences then become our motivation to conduct a study about environmental assets, especially because high environmental damage (one of them is caused by the weak corporate social responsibility). From the observation done for 15 years (period of 2001 – 2015), this study gives some important conclusions. First, many companies explaining that they conduct environmental conservation activities but it is not shown in the investment on environmental assets. It is because the absence of environmental account? It needs to be studied further. Second, companies conducting high export are generally done by the companies that have good environmental performance. In contrary, companies that do not have environmental certification generally are companies that do not conduct export or conduct small export number compared to companies that obtain environmental certification. This finding also shows that corporate export level is relevant with the environmental quality of related companies.

Policy contribution is a novelty offered by this study. Fisher (2012) state one case in his study that shows the combination of science and law has been effective in the crusade to aid and halt environmental damage. It is the time for Indonesian government to make joint policy in overcoming environmental impacts. Indonesian Accounting Standard Board has had to create and establish accounts relating to disclosure and report of corporate transactions in environmental conservation

activities. On the other side, related ministry determines and obligates the amount of investment and the report of environmental conservation activities done by companies. The low enforcement on policy violations that have been determined must be implemented immediately, along with implementing of monitoring and post-auditing. By determining the joint policy, it is expected that environmental quality in Indonesia will be improved.

2. REVIEW LITERATURE AND HYPOTHESIS DEVELOPMENT

In [Chen and Roberts \(2010\)](#), it is explained that legitimacy theory and stakeholder theory are considered as theories that affect the domain social and environmental accounting study. In the previous study, both theories had been used (see [Lindrianasari 2007](#), [Lindrianasari and Asmaranti 2014, 2016](#)). All studies above refer to the argumentation of [Gray et al. \(1995\)](#) explaining that legitimacy theory and stakeholder theory are two theories that explain each other (overlapping theories) that have difference in the level of perception and completion, and not conflicting theories. In other words, [Chen and Roberts \(2010\)](#) try to summarize that legitimacy theory and stakeholder theory can explain and predict the relation between organization and environmental social, but with different approach and decomposition. However, both have deep benefit in giving understanding of social and environmental accounting research.

Legitimacy theory (introduced by [Lindblom, 1994](#); and [Suchman, 1995](#)) focuses more on community value system. Therefore, legitimacy theory predicts if value system of an organization is congruent with value system in community surrounding, the organization then will survive. Therefore, organization must be able to fulfill expectation and then to get acceptance from community. Meanwhile, stakeholder theory (introduced by [Freeman 1984](#)) focuses on the relationship between organization and various stakeholders that form (affect) environment. Stakeholder theory explains that each group of stakeholders has different effect on environment. On the other side, each stakeholder has expectations that one to another is often contradicting ([Chen and Roberts, 2010](#)).

2.2. Previous Study and Hypothesis Development

2.2.1. Environmental Quality and Corporate Export Performance

In a study, it is concluded that environmental account can help evaluating sustainable economy in capital maintenance in definition widely. However, the measurement of sustainable development must involve alternative or additional physical indicators related to quantitative standards ([Bartelmus, 1999](#)). The main finding from the study done by [Bartelmus](#) that is done in the Philippines shows that environmental account has some distribution in corporate businesses, among others are (1) giving the evidence of the existence of sustainable economic performance for a country (at least) during reporting period (2) giving information that company has issued environmental internalization cost; (3) being able to be guidance in investment that production process done by company is the one that is environmentally friendly; (4) helping to determine and monitor policy on conservation, distribution, and management of natural resources and (5) covering the existence of data gap that has been only being prioritized on data about corporate profit. The finding of study by [Bartelmus \(1999\)](#) shows that environmental account reported in corporate accounting report plays important role for sustainable development of a company and country.

Accounting is an instrument that can give its support in investment decision especially in the market of developing countries (Burrill, Herzig and Tadeo, 2009). As the point number (3) that is explained in Bartelmus (1999), accounting can explain to investor that product produced is environmentally friendly product by supporting accounts that are related to environment on its financial report. Environment and economic growth are two things relating to each other. Thus, if a country wants its economic growth increased, then, environment in the country must be qualified. Therefore, it is necessary to have policy integrated paradigm and sustainable growth in one country. Moreover, the implementation of environmental management can increase corporate competitiveness in product market (Christmann, 2000).

The pilot project and through creating international forum to discuss the role of government in promoting Environmental Management Accounting (EMA) has been initiated by international agency, United Nation Division for Sustainable Development (UN DSD) (Jasch, 2003). EMA is considered representing a combination approach that can give data needed in financial accounting and government cost accounting formulations.

Study of Ederington and Minier (2003) found that when the level of environmental regulation is modeled as endogenous variable, the existence of effect that is significantly higher in trading flow compared to the one reported previously. They also offer an idea about the obligation of international trading agreement that its content is widened, including environmental policy negotiations. Recently, the thoughts of Ederington and Minier have been interesting topic in the area of international trading and environmental protection. When World Trade Organization (further is referred as WTO) is able to ensure that all members under WTO have conducted sustainable development and protection and environmental preservation, then probability of basic objective achievement from WTO becomes greater. WTO contributes in environmental protection and preservation through open trading, by setting regulation and law enforcement mechanisms, by work committee in WTO from different countries (https://www.wto.org/english/tratop_e/envir_e/envir_e.htm). Through these regulations, WTO is able to achieve its objective to create sustainable development and protection toward environment in entire countries of its members.

Company that conducts trading between countries is the country predicted will have better environmental management than the one that does not. It is because the wide community demanding the company to be legitimated as applied value system. Moreover, with the existence of WTO regulation on implementation of sustainable development and protection and environmental preservation, it requires products that will be traded openly fulfill WTO qualification. Based on the above explanation, hypothesis of this study is then formulated as the following:

Ha1. Environmental quality of company that conducts export is better than the one that does not.

2.2.2. Environmental Assets and Environmental Quality

Studi about environmental assets had been started in 1976. At that time, it had been discussed on how to include values of preventing action and environmental damage into environmental assets in national economic account system (Peskin, 1976). Double entry accounting system proposed is based on externalization theory and optimal management. Furthermore, Barbier and Markandya (1990) proposed simple environmental interaction model by considering environmental quality.

Simple model is developed to characterize condition needed in order to protect environmental preservation from economic system. The topic of this study is developing more in all disciplines [see [Repetto \(1992\)](#), [Solow \(1993\)](#), [Mathews \(1995\)](#), [Eade and Moran \(1996\)](#), [Medley \(1997\)](#), [Navrud and Pruckner \(1997\)](#), [Owen, Gray, Bebbington \(1997\)](#), [Weitzman \(1997\)](#), and [Lehman \(1999\)](#)].

[Repetto \(1992\)](#) has started to identify environmental assets accounting and [Medley \(1997\)](#) enriched it by adding contingent liabilities. [Medley \(1997\)](#) thought on how those accounts must be defined, what elements that can be included in those accounts. After identifying the accounts, the next is on how to evaluate those accounts. The examples above illustrate how difficult it is to be obtained. Identification or confession and measurement of environmental cost along with its benefit that will be obtained, will be understood better if company understands that the environmental issue will interact with the future of the company. At least, the environmental issue can give signals to the investors ([Cormier and Magnan, 1997](#)). Investors conduct evaluation and investigation on financial report from the side of corporate environmental performance, that is measured by pollution records (other environmental damages) relatively toward existing regulations.

Beside will give signals to capital market, environmental activities will give positive profitability growth. The focus of EMA is to count the amount of annual costs spent in order to control emissions, material garbage, and environmental arrangement and protection. By implementing EMA, company is able to increase material use efficiency, to reduce impact and risk of corporate activities on environment, and to reduce environmental conservation costs. The study done by [Jasch \(2003\)](#) shows how the world has tried to use an approach that can be used by government of a country to care on environmental arrangement, both in private and governmental sectors.

A study has produced an empirical study from its observation in 88 chemistry companies about “best practices” effect on environmental management. It argued that by implementing environmental management, it allows company simultaneously to protect environment and to reduce corporate costs that eventually will increase corporate performance. The focus in “Best practices” includes designing production process that reduces pollutions (dust and emission), replacing raw materials that are low pollutions, conducting recycled side products, and innovating processes that reduce pollutions. The practices such as those practices are meant to reduce production costs by increasing the efficiency of production process and by reducing raw material handling costs and waste disposals (see [Christmann, 2000](#))

Environmental accounting plays more important role in business competition for more companies since the separation of business between countries becomes thinner. Adoption of international report standards. The relation between environmental accounting and international accounting standard adoption proves more that the series of corporate strategies in achieving competitive advantage. Therefore, environmental accounting implementation has positive effect that is wide for an economy. However, the study of [Christmann \(2000\)](#) is not able to produce a significant finding between the relation of environmental management and profitability. This study found that the use of machine that can produce environmentally friendly products very supports cost implementation of environmental management. The result of this study indicates that if organization

wants to win the competition in product market, then, the right investment on the asset will give optimal outcome.

Since the previous study done in 1990s, the study of environmental assets has been developing more. In 2000s, the study of environmental assets has been done [Larrinaga, Carrasco and Correa (2002); Dasgupta, Laplante, and Wang (2002); Smith (2007); Dietz and Neumayer (2007); Pennell, Roberts, Park, Alexander, Curatolod, and Marsha (2012); Morelli (2013); even until the focus on environmental asset accounting [see Herbohn (2005); Burritt (2005); Campbell, Williams and Meisch (2005); Jialin and Changrui (2006); Azqueta and Sotelsek (2007); Bartelmus (2009); Obst and Vardon (2014)].

Ha2: Environmental assets positively relate to environmental quality

3. STUDY METHODOLOGY

3.1. Sample of Study

Sample of this study is sample of study that has been used in the previous study (see Lindrianasari, 2016) which is all food and beverage companies listed in Indonesia Stock Exchange with the observation period that will be done in this study is the years of 2001-2013 (13 years), for comparator country is a country that is still in the process of searching.

3.2. Data of Study

This study will use secondary data that can be in the form of archive (corporate annual report and government policy) related to social and environmental responsibility. The study will conduct investigation on the company in the years around when the policy is applied in other countries that are presently still in the level of exploration. The observation will be focused on corporate response on policy issued by government that relates to social and environmental responsibility.

3.3. Statistic Testing Instrument

The second hypothesis testing of this study will use correlational testing, where its statistic model is formulated separately. The first hypothesis stating that environmental quality of companies conducting export is better than the ones that do not, indicates that companies conducting their product export are companies that have better environmental performance. Meanwhile, the second hypothesis states that environmental quality positively relates to environmental assets. Therefore, statistic model to test the second hypothesis is as the following:

$$Y = a + b1X1 + b2X2 + e \dots\dots\dots (1)$$

Where:

Y is environmental quality (measured by using ISO 14000, ISO 26000 or proper Green and Gold); X1 is export value; X2 is environmental asset value, e is error term; a is constant; b is regression coefficient.

4. HYPOTHESIS TESTING AND DISCUSSION

4.1. Population, Sample, and Data of Study

The final sample is used in this study is divided into two: (1) to test H1 and H2, the sample used is the sample of study used in the previous study (see Lindrianasari and Asmaranti, 2016) which is all food and beverage companies listed in Indonesian Stock Exchange with the observation period that will be done in this study is the years

of 2001 – 2015 (15 years). Data used as many as 309 company years: (2) to test H3, the comparator countries used are Malaysia and Thailand, which are countries that relatively have similar economy to Indonesia. Data used entirely are more than 20.000 company years. Data used in this study use secondary data that can be in the form of archive (corporate annual report and government policy) related to social and environmental responsibility. We see the existence of similar observation point from three countries, which is 2007. In that time, each country issues fundamental policy related to environment. This study will conduct investigation on companies in the years around where policy is applied in the country. The investigation is focused on company's response on policy issued by government related to social and environmental responsibility.

4.2. Descriptive Statistic

Table 4.1 demonstrates descriptive statistic for sample of the first and the second hypotheses. The table shows that total sample used for the first and the second hypotheses is 309 with random sample selection, by using helping instrument of SPSS program. From the sample used, minimum value of environmental assets owned by sample company is Rp.0 and the highest value of environmental assets recorded in corporate annual report is as much as IDR 556.000 milion. We obtain the value through analysis from varied information explained by corporate management, not the one from financial report. From all sample of this study, we can search the environmental assets from only 8.1% of companies.

Value of Rp.0 is much found in sample companies and shows that in the companies there is no or even do not admit environmental assets. However, we found information in the annual report that there is the existence of activities and investment for water waste treatment or only water purification that is mostly done by companies that do not have environmental asset account. It can be predicted because that has been no regulation that arranges environmental account on corporate financial report. On the other side, we found that most of companies have explained that they conduct activities to reduce carbon emissions, build IPAL, and others. This finding shows that voluntarily the companies have invested on environmental assets. Only because there has been no confession, measurement, and report of environmental accounts (assets or costs), environmental accounts are not found in corporate financial report.

Table 4.1
Descriptive Statistics (in IDR million)

	N	Minimum	Maximum	Mean	Std. Deviation
Envi_Perform	309	.00	1.00	.6181	.48663
Export	309	.00	8887000.00	686610.6214	1322542.57168
Envi_asset	309	.00	556000.00	4690.2945	41550.82777
Valid N (listwise)	309				

4.3. Correlational Testing

In the testing of the first and the second hypotheses, we use correlational testing instrument. The correlational result is shown on Table 4.2. The first hypothesis of this study states that environmental quality of companies that conduct export is better than the ones that do not. The testing result by using correlation shows that companies that conduct high export is generally done by companies that have good

environmental performance. Good environmental performance is seen from the success of company in achieving environmental certification 14001, 26001, or achieving gold and green proper. The statistic result shows that value of pearson correlation as much as 0.153 with significance of <0.05 becomes a strong reason to conclude that the first hypothesis of this study can be supported by the sample of 309 company years.

This study supports previous studies conducted by Purnomo and Widianingsih (2012). Their study found that environmental performance has a positive effect on financial performance. Purnomo and Widianingsih was examined the effect of environmental performance on financial performance with the disclosure of corporate social responsibility as a moderating variable.

Meanwhile, the second hypothesis predicts that environmental assets positively relate to environmental quality is also proven. It is seen from the value of pearson correlation 0.03 (positive relation) indicating that the more companies that allocate their fund to be invested in environmental assets, the better environmental quality of the companies. However, the positive relationship of environmental assets and environmental performance is not significant (Sig. 0.590). Therefore, the second hypothesis of this study is concluded not supported.

Table 4.2
Result of Correlational Testing

		Envi_Perform	Export	Envi_asset
Envi_Perform	Pearson Correlation	1	.153**	.031
	Sig. (2-tailed)		.007	.590
	N	309	309	309
Export	Pearson Correlation	.153**	1	.033
	Sig. (2-tailed)	.007		.561
	N	309	309	309
Envi_asset	Pearson Correlation	.031	.033	1
	Sig. (2-tailed)	.590	.561	
	N	309	309	309

****.** Correlation is significant at the 0.01 level (2-tailed).

The result of correlation testing above shows that:

- When environmental regulation is modeled as endogenous variable, there is positive effect on trading flow among countries from the one reported previously (Ederington and Minier, 2003);
- The forming idea of international trading agreement that its content is expanded to environmental policy negotiation that is initiated by World Trade Organization has ensured that all members under WTO to conduct sustainable development and protection in environmental preservation;
- Companies that conduct investment in environmental assets (to conserve environment) have superiority in creating higher profit;
- As predicted previously, companies that are able to conduct export are companies that have product that the essence of its quality can be accepted by a variety of customers. The variety of costumers of a product is a determination of the high product selling number. Therefore, it is very

reasonable by producing products that are environmentally friendly, having higher demand, companies that will have number of sales and profits that are directly proportional with the number of sales.

5. CONCLUSION, LIMITATION, AND SUGGESTION

This study gives three important things. First, companies conduct high exports are generally done by the companies that have good environmental performance. In contrary, companies that do not have environmental certification generally are the companies that do not (are not able to) conduct export or conduct small export, compared to the companies obtaining environmental certification. This finding also shows that corporate export is relevant to environmental quality certification.

Furthermore, this study has difficulty in finding environmental assets and environmental costs in corporate financial report. However, we found disclosure from corporate management in annual report related to protecting activities on environment that have been done. Some companies also disclose “financial nominal” that they have spent for actions of environmental quality improvement. Investigation done on document of these companies show the existence of company’s ignorance to disclose admit sacrifice costs that have been spent in financial accounts. Therefore, the existence of environmental load or environmental asset investment confession is not shown on corporate financial report. Undisclosed social and environmental costs in corporate annual report are most likely because there is no regulation related to allocation of those costs.

Lastly, relating to the low corporate disclosure in environmental cost allocation and or investment on environmental assets, this study will propose to the regulator party to immediately compose codification or joint regulation related to environmental accounts. **Regulators must immediately formulate policies related to environmental standards including social and environmental accounts for companies in Indonesia.** It is expected that by the existence of environmental accounting report standards, companies are able to admit, measure, and report each capital expenditure and revenue expenditure related to the environment. Moreover, corporate disclosure on the environmental quality improvement encourages better environmental activities, and Indonesia becomes a country that succeeds in reducing carbon emissions as the ratification that has been done.

ACKNOWLEDGEMENTS

The research was funded by the Ministry of Research, Technology and Higher Education of the Republic of Indonesia in 2016, through a competitive grants scheme in University of Lampung.

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