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## Вплив фінансових показників та екологічних витрат на екологічну ефективність вугледобувних компаній, що мали лістинг акцій на Індонезійській фондовій біржі у 2015-2018 рр.

Показник екологічної ефективності, відповідно до стандартів ISO, є розрахунковим результатом системи управління навколишнім середовищем. Занепокоєний впливом діяльності компаній на навколишнє середовище, уряд Індонезії визначив показники екологічної ефективності, яких повинні дотримуватися вугледобувні компанії. Мета цього дослідження – надати емпіричні докази щодо впливу фінансових показників та екологічних витрат на екологічну ефективність. Для обчислення фінансових показників в дослідженні використовується коефіцієнт ліквідності, фінансовий важіль та коефіцієнт прибутковості. Коефіцієнти ліквідності представлені у поточному співвідношенні (CR) та швидкому співвідношенні (QR). Фінансовий важіль відображає відношення позикового капіталу до активів (DAR) та відношення позикового капіталу до власного капіталу (DER). Коефіцієнти рентабельності у цьому дослідженні представлені у вигляді чистої норми прибутку (NET), рентабельності інвестицій (ROI) та рентабельності власного капіталу (ROE). Екологічні витрати були розраховані як загальна вартість засобів відновлення, рекультивациі та закриття шахти, поділена на прибуток після оподаткування (EAT). Екологічні показники були розраховані на основі результатів рейтингу PROPER, опублікованого Міністерством охорони навколишнього середовища Індонезії. Програма PROPER передбачає стимулювання компанії щодо меншого використання або відмови від технологій, що мають негативний вплив на навколишнє середовище. Програма PROPER отримала високу оцінку різних організацій, включаючи Світовий банк, і стала одним із навчальних матеріалів Гарвардського інституту міжнародного розвитку. Програма PROPER є прикладом у різних країнах Азії, Північної і Південної Америки, Африки як альтернативний інструмент збереження навколишнього середовища. У цьому дослідженні автори використовують вторинні дані. Це означає, що дослідники отримують дані шляхом доступу до фінансової звітності та інших річних звітів про об'єкти компанії. Такі звіти є представлені на веб-сайті Індонезійської фондової біржі (IDX) та на офіційному веб-сайті кожної компанії. Вибірку, яка використовується в цьому дослідженні, склали вугледобувні компанії, що мали лістинг акцій на Індонезійській фондовій біржі у 2015-2018 роках. Для тестування гіпотези дослідження автори використовують метод панельної регресії, яка поєднує дані поперечного перерізу та часових рядів. Авторами виявлено, що такі фінансові показники як коефіцієнт ліквідності та фінансовий важіль впливають на показники екологічної ефективності діяльності компанії. На відміну від цього, коефіцієнт рентабельності та екологічні витрати не впливають на екологічні показники діяльності вугледобувних компаній.

**Ключові слова:** коефіцієнт ліквідності, фінансовий важіль, коефіцієнт прибутковості, екологічні витрати, екологічні показники.

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# The Effect of Financial Performance and Environmental Costs toward Environmental Performance in Coal-Mining Companies Listed on the Indonesia Stock Exchange 2015-2018

*The purpose of this study is to provide empirical evidence regarding the effect of financial performance and environmental costs on environmental performance. In this study, the financial performance is calculated by the liquidity ratio, leverage ratio, and profitability ratio. Liquidity ratios are represented in the current ratio (CR) and the quick ratio (QR). Then, in this study, the leverage ratio is represented in debt to asset ratio (DAR) and the debt to equity ratio (DER). Profitability ratios in this study are represented in net profit margin (NET), the return of investment (ROI), and the return of equity (ROE). The environmental costs in this study were calculated using the rehabilitation provision, reclamation, and mining closure divided by earnings after tax (EAT). The environmental performance was calculated based on the results of the PROPER rating issued by the Environmental Ministry. This study uses secondary data. It means that the researchers obtain data by accessing financial statements and annual reports of company objects. It collects on the Indonesia Stock Exchange (IDX) website and the official website of each company. This study uses a panel data regression technique that combines cross-section and time-series data. Therefore, the results showed that the liquidity ratio in financial performance and leverage ratio in financial performance affect environmental performance. In contrast, the profitability ratios in financial performance and environmental costs do not affect environmental performance.*

**Keywords:** *liquidity ratio, leverage ratio, profitability ratio, environmental costs, environmental performance.*

## Introduction

The environment is an important factor in live humansustainability where basically nature and social coexist. The natural resources are the material for humans'survival. Environment, according to the Great Indonesian Dictionary (KBBI), is an area that consists of everything in it. The environment is explained as the conditions of objects contained in the room we occupy and affect human life (Salim, 1983). In this case, the environment is divided into three categories, namely, physical, biological, and social (Amsyari, 1989).

Also, humans, companies, and stakeholders have a social responsibility to the environment (Anwar, 2012). The environmental performance is stated as a calculated result of the environmental management system, which is related to the control of environmental aspects. Those environmental aspects that assess are environmental performance based on environmental policies, environmental targets, and environmental targets (Sawani, 2008). One form of corporate social responsibility that is Corporate Social Responsibility (CSR) program. This program, as the company's commitment, contributes, and act by the ethics prevailing in society (Chen, 2011).

Environmental performance, according to ISO standards, is a calculated result of the environmental management system. Environmental performance closely related to the control of environmental aspects, as well as the assessment of environmental performance based on

environmental policies, environmental targets, and environmental targets (Standards Australia, 2018). Another opinion states that environmental performance is the company's performance in establishing a good or green environment (Suratno, 2006). Environmental performance is a result that can be calculated through an environmental management system based on environmental policies and environmental targets (Purwanto, 2000). There are two types of environmental performance indicators, namely lagging indicators for end process indicators and leading indicators for in-process indicators, and also in environmental performance. Then, also, there are two types of environmental performance, namely qualitative environmental performance and quantitative environmental performance (Stum, 1998).

The qualitative environmental performance can be calculated through ISO 14001, CERES, GRI, balanced scorecard, and others (Dian, 2013). Then, for quantitative environmental performance can be calculated as ISO 14031, with two types of approaches, namely environmental performance indicators and environmental conditions indicators (Stum, 1998). In Indonesia, it has been governed on how to manage the environment for the company. The rules state in Law of the Indonesian Republic Number 23 of 1997 article 5 about the Environmental Management act, (Environmental Ministry, 1997).

Indonesia's government that concern about the environmental impact on society is proved by issuing the

environmental performance indicators for companies. This act has been carried out since 2002 by carrying out supervisory actions on environmental management, namely Indonesia's program for pollution control, evaluation, and rating (PROPER) conducted by the Ministry of Environment ([www.menlhk.go.id](http://www.menlhk.go.id)). The PROPER program above means to provide incentives and disincentives to companies.

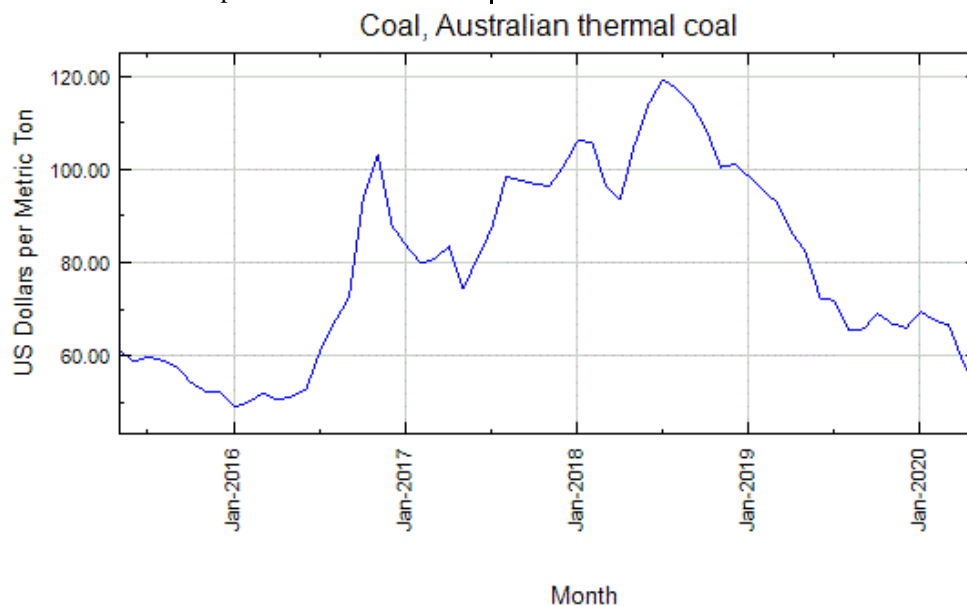
The PROPER program has been praised by various parties, including the World Bank, and it has become one of the study materials at Harvard Institute for International Development. The PROPER program becomes an example in various countries in Asia, America, Latin, and Africa as an alternative environmental compliance instrument. In 1996, PROPER received a Zero Emission Award from the United Nations University in Tokyo (source: website training.PROPER.com). The stages of the PROPER implementation based on article 7 of Environmental Ministry Law No. 3 of 2014 include Preparation, Supervision, Assessment, and Follow-up. The company will get the results of the environmental management performance evaluation by getting a Gold, Green, Blue, Red and Black performance rating (Environmental Ministry No. 3, 2014)

The application of PROPER will increase public trust in the company. The movement in community managing programs that are focused on empowerment shows the

success of the PROPER approach assessment system (Environmental Ministry No. 3, 2014). The companies that participate in the PROPER program are the coal mining subsector companies. From 2015 to 2019, the coal companies that participated in the PROPER program experienced an excellent move. In 2015 coal mining companies that participated in the PROPER program are 55 companies. Then, in 2016 there were 58 companies. In 2017 there were 47 companies. Then in 2018, there were 52 companies, and in 2019 there were 66 companies.

Those companies that are actively registered as PROPER participant program experience an upgrade at the end of 2019. In 2015 gold ranks were given for one company, green for four companies, blue for 39 companies, red for 10 companies, and one company getting the black rank. In 2019, there was an increase in PROPER ranking. Three companies received gold ratings, five companies green ratings, 50 companies received blue ratings, eight companies received red ratings, and no one got black ratings. This increase is in line with the company's awareness of the externality theory and the legitimacy theory about the sustainability between environmental performance and stakeholders.

In the last five years, the coal price faced a fluctuating curve in the stock market. It can be proved by the coal price chart on the [sahamok.com](http://sahamok.com) website (Figure 1). Data obtained refer to the Australian Coal Market.



**Figure 1. The coal price dynamics**

Source: <https://www.sahamok.com/grafik-harga-komoditi/batubara/>

The coal price falling from 2015 to 2016 and then gradually rose again until 2019. It is in line with the financial condition of coal companies in the capital market. The financial statements of coal mining companies experienced the various up and down condition. Financial performance is the work of a company in a certain period. In an expert opinion, financial performance is a financial condition of a company in a certain period both in terms of raising and channeling funds aspect, which are usually calculated by

indicators of capital adequacy, liquidity, and profitability (Jumingan, 2006).

Financial performance is one of the company's benchmarks in the decision-making process. As stated before, the performance is the effort in achieving quality and quantity by an employee in obeying his obligations, such as the mandate and responsibility given to him (Mangkunegara, 2000). Then, the other experts say that a person's performance is a mixture of opportunity, ability, and effort that can be assessed from the results of his efforts (Sulistiyani, 2003).

The financial performance is the work of a company in a certain period. In the opinion of an expert, financial performance is a company's financial condition in a certain period both in terms of raising and channeling funds. Those conditions are usually calculated by indicators of capital adequacy, liquidity, and profitability (Jumingan, 2006). Some experts say that financial performance is a company achievement that illustrates how the company's condition (Sutisno, 2009). While the Indonesian Accountants Association in 2009 stated that financial performance is the company's ability to manage the company's resources (IAI, 2009).

The measurement of financial performance as a benchmark for the company reflects the condition, and the picture of the company's financial health also assesses the company's ability to compete with other companies. The performance calculation is the determination of operational effectiveness, organization, and employees based on the targets, standards, and criteria that periodically have been previously set (Srimindarti, 2006). The performance measurement also has several benefits including evaluating, controlling, budgeting, motivating, celebrating, learning, and developing functions (Behn, 2003).

The financial performance can be calculated by eight financial statement analysis techniques, one of which is financial ratio analysis (Jumingan, 2006). The one advantage of financial ratios is that it can define the strengths and weaknesses of the company. It means that in financial ratios is by comparing one financial statement post with another financial statement post in order to know the two relationships, at the income statement or balance sheet (Jumingan, 2006). In other words, financial ratios used for the calculated relationship and financial information which is used for the comparison between both the post-financial statement and the reporting year (Ross, 2006).

The four grouped financial ratios are often used in financial performance analysis, namely liquidity ratios, leverage ratios, activity ratios, and profitability ratios (Riyanto, 2001). The other expert opinions say that the ratio is grouped four into leverage ratios, liquidity ratios, efficiency ratios, and profitability ratios (Brealey, 2008). The researcher concluded from two experts' opinions that often used ratios are liquidity ratios, leverage ratios, and profitability ratios.

Liquidity ratios are ratios that provide an overview of the company's ability to meet its short-term debt/obligations (Kasmir, 2008). Liquidity ratios are explained as the ability of a company to meet financial obligations that can be immediately paid off for due date. Liquidity derived from the word liquid reflects explicitly the availability of funds owned by the company to meet all debts that are due (Raharjo, 2007). Two ratios are commonly used in liquidity ratios, namely the current ratio (CR) and quick ratio (QR) (Kasmir, 2008).

The leverage ratio compares the funds lent by the creditor with the funds owned by the company. Leverage ratio is the ratio used to see how far the activities used by companies financed by debt (Kasmir, 2008). In other words, this ratio compares the activities of companies that are capitalized by debt. The purpose of this ratio is

supposed the company in knowing its position so that it can assess the balance between the company's capital and company debt (Raharjo, 2007).

The leverage ratio consists of 7 types of ratios (Kasmir, 2008). In this study, the authors use two of the most frequently used leverage ratio, namely total debt to asset ratio (DAR) and total debt to equity ratio (DER). The total debt to asset ratio is used to calculate the assets used to guarantee company debt. The total debt to equity ratio is to calculate how much the company is financed by the creditor compared to its capital.

The last ratio is the profitability ratio. This ratio used to assess the ability of the company to generate profits within a specified period (Kasmir, 2008). In addition to calculating the short term in the long term, the profitability ratio and it can also be used for shareholders to assess the company's profit potential (Sartono, 2012). There are three types of profitability ratios that are often used, namely, net profit margin, ROI, and ROE (Hanafi, 2012). Net profit margin is used to calculate the company's ability to get profits in obtaining the company's net profit. Rate of return investment (ROI) or net earning power ratio is the ratio used to calculate the capital invested ability in producing the net income. Returns of equity (ROE) is to calculate the capital's ability to get net income.

Another factor which influences environmental performance is an environmental cost. The environmental costs are costs incurred due to poor environmental quality or poor environmental quality arising from economic activities (Hansen, 2004). Environmental costs are incurred by companies due to low environmental quality, as a result of the production processes carried out by manufacturing and service companies (Fitriyani, 2012).

The environmental costs can be interpreted as costs that arise to achieve goals. It consists of reducing environmental costs that increase income, improve environmental performance that needs to be considered now and in the future (Irawan, 2001). The environmental costs include both internal costs and external costs. The internal cost relates to the production process. It is reducing the production process means that to reduce environmental impacts, as well as external costs associated with repairing damage caused by waste caused (Susenohaji, 2003).

These environmental costs include: 1) Maintenance and replacement costs due to waste and gas-waste, which are the costs to maintain, repair, replace environmental damage caused by company waste; 2) The environmental prevention and management costs are costs incurred to prevent and manage waste, in purpose, to avoid environmental damage; 3) Costs for purchasing non-production materials are costs incurred for purchasing materials. Those are not produced for preventing and reducing the impact of waste from the production of raw materials; 4) Product management costs are costs incurred by companies for processing materials that are not producing results; 5) Environmental cost savings are cost savings or additional company earnings as a result of environmental management.

Currently, all companies in various sector units in Indonesia mostly claim that their companies have carried

out their social obligations towards the environment around the company. Therefore, most of these companies disclose Corporate Social Responsibility as a motivation to increase public trust, especially in the achievement efforts to improve the surrounding environment company (Prawita, 2019). Environmental regulations should be improved to discuss environmental programs and environmental costs that can create a permanent change following the company's operations on the environment (Nurleli and Faisal, 2017). The identification of environmental costs aims to improve the accuracy of product costs and support companies in designing products that are more competitive and Eco-friendly (Browner, 1995).

A company in implementing CSR programs usually uses the concept of 3P or TBL (Triple Bottom Line), the concept of 3P (profit, people, and the planet), which is very widely used among companies. It illustrated that the company always has a direct impact on the environment (Adisaputro, 2007). Then, this is associated with companies engaged in the exploitation of agricultural products such as mining (Suharto, 2005). The company's attention to the environment is now beginning to develop and improving better mechanisms for planning and controlling financial costs related to environmental issues and their benefits as input to the company's management. However, environmental accounting has no significant increasing signal (Wiyantoro, 2011).

The previous studies have found some influences on financial performance, environmental performance, and environmental costs. The research conducted by Agus Widarsono and Cantika Putri Hadiyanti (2013) examines the effect of liquidity ratios on environmental performance. This research is in line with the theory of legitimacy, which states that a high level of liquidity will indicate the strength of the company's financial condition. The companies with this condition tend to disclose information more widely to outside parties because they want to show that their company is credible. One of the disclosure efforts that can be done by companies is social and environmental disclosure, which is one of the criteria in measuring environmental performance.

In line with Dietrich Earnhart & Lubomir Lizal's (2006) research about financial performance provides evidence that successfully improves future environmental performance, as seen from liquidity. The other research is also conducted to see the effect of the leverage ratio on environmental performance. The research conducted by Hendra Jati Kusuma (2018) explained the negative effect of CSR disclosures in manufacturing companies. Then, It is supported by research conducted by Agus Widarsono and Cantika Putri Hadiyanti (2013). That research states that there is a negative relationship between social disclosures. It has a criterion of environmental performance with a degree of financial leverage. It means that a higher debt/equity ratio will result in lower social disclosure because the higher the leverage is, the more the company will comply with the credit agreement.

Moreover, the companies must provide higher returns at this time than future profits. In order for companies to provide higher profits, companies must reduce costs

(including the cost of environmental information). Also, this research supports the research of Connors, Elizabeth & Gao, Lucia S. (2011). They reveal a significant relationship between leverage and environmental performance.

The effect of profitability ratios on environmental performance was also investigated by Agus Widarsono and Cantika Putri Hadiyanti (2013). That research is in line with the theory that states one method to calculate an environmental performance. One of them with profitability, which states that if the level of profitability of the company increases, the size of environmental performance will improve / higher. The research is also in line with the study of Anggi Martia (2011), which states that partially ROA (Return On Assets) has a significant positive effect on environmental performance. Then, ROA is a ratio used to measure profitability.

Furthermore, there is a different point of view with the research by Greg Filbeck & Raymond F. Gorman (2004). His research shows no positive relationship between environmental and financial performance, which means that these two variables do not influence each other. The financial performance can be calculated from the profitability level. Whereas in research conducted by Riska Dewi Setyaningsih (2016) looking at the effect of environmental performance on financial performance with CSR as a moderating result. It can be concluded that CSR is not able to moderate the positive influence of PROPER on ROE.

### **Theoretical Framework**

#### **Legitimacy Theory**

Legitimacy is defined as equating perceptions or assumptions that actions taken by an entity are desirable actions that appropriate or following the system of norms, values, beliefs, and socially developed (Suchman, 1995). This legitimacy theory is important for the company because people's legitimacy to the company is considered an important factor for the company's future development. The theory of legitimacy is based on the notion of a social contract that is implied between social institutions and society (Ahmad, 2004)

The legitimacy theory connects into the perspective theory within a framework of political economy theory (Gray, 1995). Legitimacy is described as the root of conformity between an organization and its cultural environment. Legitimacy can be considered to equate perceptions or assumptions. The actions taken by an entity are desirable, appropriate, or following the system of social norms, values, and beliefs of the community and socially developed (Suchman, 1995). Therefore, companies must provide more explanations to stakeholders, especially for those who have a significant influence on the company and can interfere with the survival of the company if expectations are not met. Disclosure will be better based on the expectations of these stakeholders.

#### **Externality Theory**

The main problem in environmental economics is the externality problem (Case, 2002). One problem arises when the company focuses only on the company's internal problems, and the externality problem becomes less noticeable. The externalities of side effects of an

industrial action both production activities and consumption carried out by parties that influence other parties, social and environmental. The emergence of externalities is the failure of the market economy to efficiently allocate the factors of production (Perdana, 2016).

This externality arises because of the impact of consumption or product actions taken by one party to another party, without any compensation paid by the party that caused or compensation received by the affected party (Algifari, 1998). Therefore, the existence of externalities due to two things, namely: 1) The ignorance of the action or activity effect; 2) the absence of compensation paid or received (Algifari, 1998). The presence of externalities is an important symptom in modern life. For example, everywhere there is pollution, namely, pollution of air, water, land, and earth, traffic jams, cigarette smoke for active smokers. The externalities are caused because consumers or producers can incur costs or benefits to other communities.

### **Financial Performance**

#### **Liquidity Ratio**

Liquidity ratio is an indicator of a company's ability to pay all short-term financial obligations or paying them by using current assets that are still available. Then, in other words, it can describe a company's ability to meet its obligations / short-term debt. Liquidity reflects explicitly the availability of funds owned by the company to meet all debts that are due (Widarsono, 2015). Liquidity ratios are the ratios that provide a picture of a company's ability to meet its short-term debt/obligations (Kasmir, 2008). Liquidity ratio is the ability of a company to meet financial obligations that can be immediately disbursed or have a due date.

Two ratios are commonly used in liquidity ratios, namely the current ratio and quick ratio (Jumingan, 2006). The purpose of the general liquidity ratio or work model ratio for short-term creditors, banks, management, and long-term creditors is very important to analyze and interpret short-term financial position. It is to prevent the effectiveness of working capital used in the company. Then, for shareholders or owners, it is useful to know the prospects of future interest payments and dividends to be received (Kasmir, 2008).

#### **Leverage Ratio**

The leverage ratio is the ratio used to find out whether the company's assets are financed from debt. Leverage is the use of assets and sources of funds by companies that have fixed costs to increase potential shareholder returns (Sartono, 2012). Leverage is a level of a company's ability to use assets and funds that have a fixed burden (debt and or a particular stock) to realize the company's goals to maximize the owner's wealth. There are three types of leverage, namely Operating Leverage, Financial Leverage, and Combination Leverage.

Operating leverage is how much a company uses fixed operating expenses (Hanafi, 2012). Operating leverage is the company's ability to use fixed operating costs to increase the effect of changes in sales volume on earnings before interest and taxes (EBIT). Financial leverage is the use of a source of funds that has a fixed burden by assuming that it will provide additional

benefits that are greater than the fixed expense. So, it will increase the available profits for shareholders (Sartono, 2012). The leverage combinations occur when a company has both operating leverage and financial leverage as an effort to increase profits for ordinary shareholders (Sartono, 2012).

#### **Profitability Ratio**

Profitability is the company's ability to make a profit (Munawir, 2012). Profitability is the company's ability to generate profits by using existing resources. The resources are capital, cash, sales, employees, branch companies, and others. Profitability ratios are ratios to assess the company's ability to generate profits within a specified period (Kasmir, 2008). Also, to monitor the short term and the long term of the profitability ratio, and also it can be used for shareholders to assess the company's profit potential (Sartono, 2012). There are three types of profitability ratios that are often used, namely, net profit margin, ROI, and ROE (Munawir, 2012). *Net profit margin* (Kasmir, 2008) is a profit measure that compares sales with net income after interest and taxes.

#### **Environmental Cost**

Environmental costs are costs incurred due to poor environmental quality or poor environmental quality that may occur (Hansen, 2004). Generally, the term environmental costs are classified into two, namely:

- **Implicit environmental costs (remedial costs):** These costs are not directly related to the production process of a company, but the company should make improvements to the environment. The implicit environmental costs are the cost of soil pollution, the cost of groundwater pollution, the cost of surface water pollution, and the cost of air-gas pollution.
- **Explicit environmental costs (externalities)** are the costs of reducing air pollution, waste, crop damage, medical expenses. Those cost naturally become the responsibility of the company.

The environmental costs in implementing social responsibility activities, it can be done by using social costs to carry out social activities. This environmental cost is calculated using the costs incurred by the company for its CSR activities compared to the company's net profit.

#### **Environmental performance**

The company's environmental performance is the company's performance in creating a good environment (Suratno, 2006). According to ISO 14004 states that environmental performance is a result that can be calculated from the environmental management system. It is related to the control of environmental aspects, as well as the assessment of environmental performance based on environmental policies, environmental targets (Standards Australia, 2018). The environmental performance is an outcome that can be calculated through an environmental management system based on environmental policies and environmental targets (Purwanto, 2000). In other words, environmental performance is a form of corporate responsibility with the surrounding environment.

Actually, in Indonesia, it has been set how the management of the environment for companies. These rules are contained in the Law of the Republic of

Indonesia Number 23 of 1997 Article 5 about Environmental Management. The Government of Indonesia's concern regarding environmental impacts on the community is proven by the making of environmental performance indicators company. This move has been carried out since 2002 by carrying out supervisory actions on environmental management, namely Indonesia's program for pollution control, evaluation, and rating (PROPER) conducted by the Ministry of Environment. The company will get the results of the environmental management performance evaluation by getting a Gold, Green, Blue, Red and Black performance rating (Environmental Ministry No. 3, 2014)

#### Hypothesis

$H_1$ : Liquidity ratios in financial performance affect environmental performance

$H_2$ : The leverage ratio in financial performance influences the environmental performance

$H_3$ : Profitability ratios in financial performance affect environmental performance

$H_4$ : Environmental costs affect environmental performance

#### Methodology

This study examines the effect of financial performance and company characteristics on environmental performance in coal mining companies listed on the IDX in 2015-2018. The data used in this study were collected from a variety of reading materials, namely books, journals, papers, websites, and so on, that are relevant to this research topic. The data is collected and reviewed by researchers using documentation techniques, namely, researchers copy and record all secondary data obtained to support this research. The dependent variable in this study is environmental performance. This environmental performance is measured by the company's achievements in the PROPER program, and the independent variables in this study are financial performance and environmental costs. The hypothesis testing in this study uses the analysis method of panel data regression. Regression analysis is used to find out how the dependent variable can be predicted through individual variables. The panel data regression model will be processed using an analysis tool in the form of Eviews software. Hypothesis testing using panel data regression uses the following equation:

$$KLing = \alpha + \beta_1 CR_{it} + \beta_2 QR_{it} + \beta_3 DAR_{it} + \beta_4 DER_{it} + \beta_5 NET_{it} + \beta_6 ROI_{it} + \beta_7 ROE_{it} + \beta_8 BL_{it} + \varepsilon_{it}$$

Note:

K-Ling is environmental performance

$\alpha$  dan  $\beta$  is constant / regression coefficient / Intercept

$it$  is the company  $i$  in  $t$

CR is Current ratio

QR is Quick ratio

DAR is debt to asset ratio

DER is debt to equity ratio

NET is the Net profit margin

ROI is Returns of investment

ROE is Returns of equity

BL is Environmental Cost

$\varepsilon$  is Error Term

## Results and Discussion

### Hypothesis Test

Based on the results of the Hausman Test conducted showed the most appropriate model used for panel data regression analysis in this study is the random effects model. Table 1 presents the results of the panel data regression analysis using the random effects model:

Table 1

Variable	Random Effect Model			t-Statistic	Prob.
	Coefficient	Std. Error			
C	2.453019	0.309262		7.931851	0.0000
CR	0.187806	0.077492		2.423552	0.0197
QR	0.193042	0.089415		2.158946	0.0365
DAR	-0.121571	0.046439		-2.617887	0.0122
DER	0.037354	0.011104		3.363887	0.0016
NET	-0.014714	0.146266		-0.100598	0.9203
ROI	0.179414	0.479213		0.374394	0.7100
ROE	-0.014135	0.033921		-0.416689	0.6790
BL	-0.009022	0.013984		-0.645140	0.5223

Source: Data processed with eviews 10, 2020.

Based on the table above, the equation model for the equation using the random effect model can be formulated as follows:

$$KL = 2.453 + 0.188 CR_{it} + 0.193 QR_{it} - 0.121 DAR_{it} + 0.037 DER_{it} - 0.015 NET_{it} + 0.179 ROI_{it} - 0.014 ROE_{it} - 0.009 BL_{it} + \varepsilon$$

### The Effect of Liquidity Ratio in Financial Performance toward Environmental Performance

In this study, the calculation of liquidity ratios uses two ratios, namely the current ratio and quick ratio, both of which accept the research hypothesis. The good-performing coal mining companies have positive results on the company's environmental performance as calculated by the PROPER rating by the Environmental Ministry. The test results show that the current ratio score of  $t = 2.4236$  with a probability level of 0.0197 ( $p < \alpha = 0.05$ ). Then, the coefficient score of 0.1879 for the quick ratio  $t = 2.1589$  with a probability level of 0.0365 ( $p < \alpha = 0.05$ ) with a coefficient score of 0.1930, it means that the hypothesis is accepted.

Over four years, companies period that has a good liquidity ratio consistently gets a good PROPER rating and tends to increase. The liquidity ratio in this term is not too low from number 1 and not too high from number 3. It is proven by PT Bukit Asam, Adaro Energy, Indika Energy, Resources Alam Indonesia. Those companies have a liquidity ratio that is always good from year to year and gets a high PROPER rating and tends to increase. Meanwhile, companies that have too low liquidity ratios, such as Atlas Resources, have a low PROPER rating among other coal mining companies.

A study which is conducted by Dewi and Hadi (2011) states that the better the liquidity ratio owned by the company means the company has a lot of available funds. The company has the freedom to allocate any desired activity, including social responsibility activities. This activity is in line with the theory of legitimacy. It states that the actions taken by an entity are desirable, appropriate, or following a system of norms, values, beliefs, and definitions that are socially developed.

Legitimacy theory, in general, provides an important view of the practice of corporate social disclosure both for the surrounding community and the corporate environment. The results of this study are supported by studies that consider the effect of liquidity ratios on environmental performance. That study is conducted by Agus Widarsono and Cantika Putri Hadiyanti (2013), which also shows positive results between liquidity ratios and environmental performance. It is also supported by research conducted by Dietrich Earhart and Lubomir Lizar (2006).

### The Effect of Leverage Ratio in Financial Performance toward Environmental Performance

In this study, the leverage ratio calculation uses two ratios, namely debt to asset ratio and debt to equity ratio, both of which also accept hypotheses. The low-leverage coal mining company has positive results on the company's environmental performance as measured by the PROPER rating by the Ministry of Environment. The test results show the score of debt to asset ratio  $t = -2.6178$  with a probability level of 0.0122 ( $p < \alpha = 0.05$ ) with a coefficient score of -0.1216, while for debt to equity ratio  $t = 3.3639$  with a probability level

of 0.0016 ( $p < \alpha = 0.05$ ) with a coefficient score of 0.0374. Then, it means that the hypothesis is accepted.

In the consolidated financial statements which become one of the research sources, the level of debt of coal mining companies has various amounts. High or low debt does not affect if the assets and capital owned by the company to guarantee the debt still higher. Then the company will be considered feasible and good for investors. The companies with low leverage ratios in this study are PT Bukit Asam, Resources Alam Indonesia, Golden Eagle Energy, and Adaro Energy also proved to get a high PROPER rating. In contrast, companies with the highest leverage ratio obtained by Atlas resources get the lowest PROPER rating among other coal mining companies.

In the theory of legitimacy, the higher the company's debt to creditors, the fewer costs are left to carry out the environmental performance. The most important for companies with high leverage ratios are companies with high debt levels. Then, companies with high leverage ratio levels tend to override the disclosure of responsible corporate social if it is compared to companies with low leverage. This research is also supported by research conducted by Connors, Elizabeth & Gao, Lucia S. (2011). They reveal a significant relationship between leverage and environmental performance.

Indeed, this result is different from the results by research conducted by Hendra Jati Kusuma (2018). He revealed that leverage does not affect or negatively affect the environmental performance of manufacturing companies. Then, it is supported in research conducted by Agus Widarsono and Cantika Putri Hadiyanti (2013). However, this is disproved by research conducted by Connors, Elizabeth & Gao, Lucia S. (2011). They reveal a significant relationship between leverage and environmental performance.

### The Effect of Profitability Ratios in Financial Performance toward Environmental Performance

In this study, the calculation of profitability ratios uses three ratios, namely net profit margin, return of investment, and return on equity. In contrast, all of them do not accept research hypotheses in H1 and H2. The coal mining companies with high or low profitability ratios do not give positive results on the company's environmental performance as measured by the PROPER rating by the Ministry of Environment. The test results show the score of net profit margin  $t = -0.1006$  with a probability level of 0.9203 ( $p > \alpha = 0.05$ ) with a coefficient score of 0.0147, for return of investment  $t = 0.3744$  with a probability level of 0.7100 ( $p > \alpha = 0.05$ ) with a coefficient score of 0.1794, and for return of equity  $t = -0.4167$  with a probability level of 0.6790 ( $p > \alpha = 0.05$ ) with a coefficient score of -0.0141, which means that the hypothesis is not supported.

In this study, some companies that have a high profitability ratio. Those are Adaro Energy, PT Bukit Asam, Baramulti Sukses Sarana, Bayan Resources, Indotambang Raya Megah, Mitrabara Adiperdana, and

Tobabara Sejahtera. However, the high profitability ratio did not have an impact on good environmental performance. Only PT Bukit Asam and Adaro Energy were able to achieve the highest PROPER rating. The rest, such as Bayan Resources, Indotambang Raya Megah, Mitrabara Adiperdana, and Tobabara Sejahtera was only able to rank 3<sup>rd</sup> in the PROPER ranking. Especially at Baramulti Sukses Sarana, which only got second place the PROPER program in 2015, but still showed a high profitability ratio.

Some companies have a low profitability ratio. Those are Atlas Resources, Golden Energy Mines, Golden Eagle Energy, Harum Energy, Indika Energy, and Natural Resources Indonesia. It is because, in 4 years of research, the company had experienced a deficit or loss in the difficult times of the coal industry. However, despite the loss of several companies even get a high PROPER rating. Those are Golden Eagle Energy, Indika Energy, and Natural Resources Indonesia, which even ranked fourth. Then, some received third rank, namely Golden Energy Mines and Harum Energy. However, the low profitability ratio has a low impact. The PROPER rating also occurs in Atlas Resources, which suffered a loss in its financial statements and also ranked second place in the PROPER rating.

Legitimacy theory has an emphasis on company operations that must pay attention to environmental aspects. In this study, it is developed an aspect, namely environmental performance. Legitimacy theory puts public perception and recognition as the primary support that aims to increase corporate profits. It means that with sufficient profitability, the company still gets a real advantage. They still get legitimacy from the community, which will ultimately have an impact on increasing company profits in the future. However, if it is compared with the research results, it shows that the profitability ratio does not affect environmental performance.

The results of this study are supported by other studies that focus on the effect of profitability ratios on environmental performance, which was examined by Agus Widarsono and Cantika Putri Hadiyanti (2013). Their research showed a negative effect on profitability ratios and environmental performance. Then, it is supported by research conducted by Anggi Martia (2011). However, in a study conducted by Greg Filbeck & Raymond F. Gorman (2004), contrary to the two previous studies, his research shows a positive relationship between environmental and financial performance.

### **The Effect of Environmental Costs in Environmental Performance**

In this study, the environmental cost is calculated by how much the provisions prepared by coal mining companies on their environment compared to the company's net profit. That preparation includes mine reclamation, environmental rehabilitation, mine closure. These costs must indeed be incurred by coal mining companies because the environmental damage done by coal mining companies is extensive.

Based on the tests carried out, the score of  $t = -0.6451$  with a probability level of 0.5223 ( $p > \alpha = 0.05$ ) with a

coefficient of  $-0.0090$ , indicates that environmental costs do not affect environmental performance. The coefficient score, which has a negative sign, indicates that if the variable environmental costs increase, then environmental performance will decrease. Conversely, if the variable environmental costs decrease, the environmental performance will increase.

It can be seen in the financial statements the companies with high environmental costs. Those are Indotambang Raya Megah, Resources Alam Indonesia, Adaro Energy, Bayan Resources, and Tobabara Sejahtera. However, with high environmental costs, only the company Adaro Energy and Resources Alam Indonesia were able to get fourth place in the PROPER rating. Then, companies with moderate environmental costs, namely Bukit Asam, which even received the highest PROPER rating. Companies that suffer losses also incur high environmental costs such as Golden Energy Mines. This case is still based on the company's obligations to environmental responsibility.

Based on the legitimacy theory, it states that the actions taken by an entity must be following norms that socially develop in the community (Kirana, 2009). Then the size of the company should be in line with its development with environmental performance. The results of this study support the theory of legitimacy. If the company's environmental performance is good, then the public opinion of the company will increase. However, when public opinion of the company is good, then the company's position in the public eye is also good. Thus, CSR programs also cannot abandon their implementation, especially in the environmental field. Moreover, this is associated with companies engaged in the field of environment and exploitation of agricultural products (Suharto, 2010:150).

### **Conclusions**

Environmental-based accounting is not a new term in Indonesia. The demands have also been made on eco-friendly companies. Government regulations regarding environmental responsibility also developed. The coal mining company is a company with high environmental impact, environmental damage when processing the extraction of coal has a big impact on the natural and social environment. Therefore, coal mining companies should have high provisions that must be imposed on their social and natural responsibilities.

Based on this research, Not all coal mining companies listed on the IDX include their provisions for the process of environmental rehabilitation, mine reclamation, mine closure, and other environmental expense. From the 25 companies listed on the Indonesia Stock Exchange, only 13 companies listed their environmental costs. Only two companies were able to get the best PROPER rating from the Ministry of Environment, PT Bukit Asam, and Adaro Energy. This study connects the effect of financial performance and environmental costs on environmental performance on coal mining companies. The variables that are calculated from the financial performance are liquidity ratios, leverage ratios, and profitability ratios. For environmental costs measured using the provision of reclamation, rehabilitation, closure of the mine compared

to net profit. For environmental performance calculated using the PROPER rating conducted by the Ministry of Environment.

Based on the test results found that the liquidity ratio and leverage ratio affect environmental performance. In contrast, the profitability ratio and environmental costs do not affect environmental performance. The theory underlying this research is the theory of legitimacy, where the assumptions or good public perceptions of companies will have a positive impact on company development. This case indicates that no matter how much profit generated by the company, the company should continue to focus on its environmental performance. It is because companies that provide good social-environmental benefits will be considered as good company in the surrounding community.

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