The Effect of Green Accounting Implementation on the Value of Mining and Agricultural Companies in Indonesia

Heni Dwi Lestari1, Nurika Restuningdiah 2*

1, 2 Faculty of Economy, State University of Malang
*Corresponding author. Email: nurika.restuningdiah.fe@um.ac.id

ABSTRACT
The research aims to explain the effect of green accounting on firm value. This research using control variables, such as profitability, sales growth, leverage, and size of natural resource management companies. The population of this research is mining and agriculture sector companies listed on the Indonesia Stock Exchange (BEI) in 2016-2018. The results of this study prove that the implementation of green accounting has a significant positive effect on firm value. The higher implementation of green accounting will be followed by an increase in the value of the company.

Keywords: Green Accounting, Firm Value, Profitability, Sales Growth, Leverage, Size

1. INTRODUCTION
Environmental problems are increasingly large and widespread at the local, regional, national, and global levels (Bram, 2011). There are many cases of environmental pollution such as air and water pollution, chemical waste, acid rain, radiation, nuclear waste, and forest fires causing unrest among people (Susilo and Astuti, 2014). In Indonesia, there are also cases of environmental pollution caused by the companies’ operational activities, for example, PT Indominco Mandiri, PT Buana Tambang Jaya, PT Caritas Energi Indonesia, PT Metallic Baru Sinergi, PT Toba Pulp Lestari, PT Anugerah Tani Makmur, and PT Sri Indrapura Sawit Lestari (Jatam, 2018; Mongabay, 2018; Mongabay, 2019; Mongabay, Mongabay, 2019; Tempoco, 2019). This can be concluded that there are still many companies that are less concerned about the environment in carrying out the production process.

Environmental responsibility is not only borne by the government in a country, but also by all citizens (Bram, 2011). Therefore, the business world at this time is demanded to not only concern with profit (single bottom line), but also must pay attention to environment (planet), society (people), and the growth of business profit itself (profit) or commonly called triple bottom line (Painter and Morland, 2006). Moreau and Parguel (2011) argued that 54% consumers more consider eco-friendly attributes as a criterion in selecting products, therefore companies should pay more attention to the impact of their operations on the environment. In this case, accounting science plays a role through voluntary disclosure in the companies’ annual report related to environmental management which is referred to as green accounting or environmental accounting (Ikhsan, 2009). Companies whose implement green accounting automatically will also arrange their environmental performance, so the company will be assessed as an environmentally friendly company and get a certificate of the Company Performance Rating Program in Environmental Management (PROPER) by the Ministry of Environment (KLH).

The application of green accounting can increase the companies’ internal and external values (Flammer, 2012 and Wang et al., 2017). The increase in the companies’ internal value occurs because of the pride of employees related to the companies’ operations that do not harm the environment (Wang et al., 2017). Thus, employees will be motivated to work better. The increase of external value occurs due to the trust of stakeholders that have an impact on increasing the companies’ market value which can be seen from changes in stock prices.
In this study, profitability, sales growth, leverage, and firm size become control variables so that the influence of green accounting on firm value can be seen clearly.

Previous research shows that investors would prefer to invest in companies that care about the environment or have implemented green accounting (Dewi and Oriana, 2014). The adoption of green accounting can affect the companies’ stock price and can increase the value of the company (Maya et al., 2018; Puspitasari, 2018; Clarkshon et al., 2013 and Tane and Gokoglan, 2015). However, this is contrary to the results of research conducted by Zulhaimi (2015) and Suka (2016) that there is no change in stock prices before and after the adoption of green accounting.

Implementation of green accounting will provide information that will be a good signal (good news) to investors. That is because companies that apply green accounting will get a certificate of the Company Performance Rating Program in Environmental Management (PROPER) which will be informed to investors so there is a market reaction marked by changes in stock prices. The application of green accounting can improve the companies’ image in the eyes of the public because the company has paid attention to social, economic, and environmental aspects to increase investor confidence (Laskar and Maji, 2018). This can make investors’ interest in buying shares will be high and can have an impact on rising stock prices. This change in stock price will make the company’s value increase so the application of green accounting can have a positive effect on firm value (Puspitasari, 2018; Clarkshon et al., 2013; Tane and Gokoglan, 2015).

Based on the explanation above, a hypothesis can be formulated as follows:

\[ H_1: \text{The application of green accounting has a positive effect on firm value.} \]

2. RESEARCH METHOD

The populations are all-natural resource management companies listed on the Indonesia Stock Exchange (BEI) in 2016-2018 which are divided into the mining sector (coal, oil, and gas, other metals and minerals) and agriculture (plantations, livestock, food crops, forestry, and others). In this study, a total population of 69 companies.

Several companies that did not present the PROPER certificate held by the Ministry of Environment (KLH) as a form of implementing green accounting in succession in 2016-2018 were removed from the sample so that the remaining 37 companies. Furthermore, companies that did not publish complete financial reports and annual reports through the Indonesia Stock Exchange website in 2016-2018 were excluded from sampling, leaving 19 companies. Based on the selection that has been done, as many as 19 companies were selected as samples with 57 annual financial reports during 2016-2018.

The test was carried out using simple linear regression and multiple linear regression analysis techniques. The regression equation model used is as follows:

\[ Y = \alpha + \beta X + \varepsilon \]

\[ Y = \alpha + \beta_1 X + \beta_2 Z_1 + \beta_3 Z_2 + \beta_4 Z_3 + \beta_5 Z_4 + \varepsilon \]

Information:

\( Y \) = Firm Value
\( \alpha \) = constant
\( X_1 \) = Green Accounting
\( \beta_1, \beta_2, \beta_3, \beta_4, \beta_5 \) = Regression Coefficient
\( Z_1 \) = Profitability
\( Z_2 \) = Sales Growth
\( Z_3 \) = Leverage
\( Z_4 \) = Size
\( \varepsilon \) = Error

The independent variable used in this research is the application of green accounting. The application of green accounting is measured by using a certificate of the Company Performance Rating Program in Environmental Management (PROPER) issued by the Ministry of Environment (KLH). Companies that have obtained a PROPER certificate will get an image rated with a rating (gold, green, blue, red, and black color criteria) according to their environmental management. Thus, the measurement of the application of green accounting in this research was conducted by giving a score of 1-5 (Table 1).

<table>
<thead>
<tr>
<th>Score</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Companies that obtained the PROPER certificate of the GOLD color criteria</td>
</tr>
<tr>
<td>4</td>
<td>Companies that obtained the PROPER certificate of the GREEN color criteria</td>
</tr>
<tr>
<td>3</td>
<td>Companies that obtained the PROPER certificate of the BLUE color criteria</td>
</tr>
<tr>
<td>2</td>
<td>Companies that obtained the PROPER certificate of the RED color criteria</td>
</tr>
</tbody>
</table>
1. Companies that obtained the PROPER certificate of the BLACK color criteria

Source: Processed by researchers

The dependent variable in this research is the value of the company measured by using the Tobin's Q ratio. Tobin's Q formula is as follows:

\[
Q = \frac{(EMV + D)}{(EBV + D)}
\]

Information:
Q = Firm Value
EMV = Market value of equity
EBV = Book value of total assets
D = Book value of total debt

In testing hypotheses, this research considers the control variables commonly used in previous studies in testing Firm Value, namely profitability, sales growth, leverage, and firm size (Nurhayati, 2013; Nofrita, 2013; Putra and Lestari, 2016; Cheng et al., 2010; Pantow et al., 2015; Hermuningsih, 2012; Pratama and Wiksuna, 2016; Mardiyati et al., 2012; Ogolmagi; 2013).

1. Profitability
Profitability is the net profit gained by the company (Wild, 2010). Profitability in this study was measured by using ROA (Return On Assets). The formula is as follows:

\[
ROA = \frac{EAT \ (Earning \ After \ Tax)}{Total \ Assets}
\]

2. Sales growth
Sales growth is a reflection of the success of a company in the past period which can be used as a prediction in the future (Hansen & Juniarti, 2014). The formula is as follows:

\[
Growth \ of \ Sales = \frac{S1 - St - 1}{St - 1} \times 100%
\]

Information:
S1 = Sales in year t
St-1 = Sales in the previous period

3. Leverage
Leverage is the company's loan funds to finance its operations (Brigham & Houston, 2001). Leverage is measured by using DAR (Debt to Assets Ratio) with the following formula:

\[
DAR = \frac{Total \ Debt}{Total \ Assets}
\]

4. Size.
Size is a scale that can classify the size of a company (Japlani, 2015). Size is measured by using the company's Natural Assets (Ln) Total Assets, namely:

\[
Size = \log \ Total \ Assets
\]

3. RESULTS AND DISCUSSION

The data used in this research include green accounting data, profitability, sales growth, leverage, size, and firm value. Table 2 shows descriptive statistics of the independent variables, control variables, and dependent variables.

<table>
<thead>
<tr>
<th>Table 2. Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>Green Accounting</td>
</tr>
<tr>
<td>Profitability</td>
</tr>
<tr>
<td>Sales Growth</td>
</tr>
<tr>
<td>Growth</td>
</tr>
<tr>
<td>Leverage</td>
</tr>
<tr>
<td>Size</td>
</tr>
<tr>
<td>Firm Value</td>
</tr>
</tbody>
</table>

The mean value of green accounting is 3.4737, indicating that the adoption of green accounting by natural resource management companies is good enough. This is because the average rating of the PROPER certificate obtained is green and blue. Even though only a few companies received certificates with a gold rating, none of them received black and red ratings. Meanwhile, the value of the standard deviation is 0.65752, it shows that among companies in making green accounting disclosures there were relatively low differences.

Profitability has a mean value of 0.0462 or 4.6% which indicates that profitability in natural resource management companies is still relatively low because it is still below the industry average of 9% (Brigham and Houston, 2001, p. 90). This was due to the losses in eight of the 19 companies. The standard deviation value is
0.06591, which means that the difference in profitability between companies is relatively low.

The mean value of sales growth is 11.3955 or 11.4%, indicating that the sales growth of natural resource management companies in the 2016-2018 period is quite good. This is because the mean value of sales growth is more than 10% (Town, 2007). Also, the difference in sales growth among companies is relatively high, as indicated by the standard deviation value of 84.64214. Leverage has a mean value of 0.4907 or 49% which means that the leverage of natural resource management companies is above the industry average of 40% (Brigham and Houston, 2001, p. 86). The standard deviation shows 0.30775 which means that the difference in leverage between companies is quite low.

The size of the company measured using natural log total assets has a mean of 13.22245, which indicates that the size of the company managing natural resources is moderate. This is following the decision of the chairman of the Capital Market Supervisory Agency Article 1, namely that companies in Indonesia can be classified as large companies if the total assets of more than IDR 100,000,000,000 or if it is included in the natural log is more than 11 and companies are classified as medium or small if the sum of all assets is less than IDR 100,000,000,000 or if it is included in the natural log is less than 11. However, the difference in size between companies is relatively low with a standard deviation of 0.46915.

The firm value has a mean value of 0.7422 which means that the value of the company managing natural resources is relatively low. This is because the companies’ value below 1 means that the company’s market price is below the book price or in other words the investors do not give a premium to the issuer (Weston & Copeland, 2010). Also, the standard deviation value indicates 0.29926, indicating that there is a fairly low difference in the value of firms among companies. Table 3 is the result of the F test.

Table 3. Simultaneous Test Results (Test F)

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squar e of Df</th>
<th>Mean Squar e F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>3.766</td>
<td>0.769</td>
<td>10.37</td>
</tr>
<tr>
<td>Residual</td>
<td>1.887</td>
<td>0.073</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5.654</td>
<td>31</td>
<td></td>
</tr>
</tbody>
</table>

Based on table 4.2, the significant value in the F test is less than 0.05 (0.00 <0.05). This means that green accounting and the four control variables, namely profitability, sales growth, leverage, and firm size, together affect the firm’s value.

The next hypothesis test is a partial test (t-test) to determine the effect of each variable individually on the dependent variable. Table 4 is the result of the t-test for the first model that is simple regression without any control variables and table 5 results of the t-test for model II that is multiple regression with control variables.

Table 4. Partial Test Results (t-Test) Model I

<table>
<thead>
<tr>
<th>Model Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-1.283</td>
</tr>
<tr>
<td>Green Acc</td>
<td>0.742</td>
</tr>
</tbody>
</table>

Table 5. Partial Test Results (t-Test) Model II

<table>
<thead>
<tr>
<th>Model Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>(Constant)</td>
<td>6.991</td>
</tr>
<tr>
<td>Green</td>
<td>1.562</td>
</tr>
<tr>
<td>Acc</td>
<td>-0.065</td>
</tr>
<tr>
<td>Profitability</td>
<td>-0.043</td>
</tr>
<tr>
<td>Sales Growth</td>
<td>-0.346</td>
</tr>
<tr>
<td>Leverage</td>
<td>-3.829</td>
</tr>
</tbody>
</table>
Based on the results of the regression tests in table 4.3 and table 4.4 the equation model is obtained as follows:

\[ Y = -1.283 + 0.742 X + \varepsilon \]
\[ Y = 6.991 + 1.562 X - 0.065 Z_1 - 0.043 Z_2 + 0.346 Z_3 - 3.829 Z_4 + \varepsilon \]

This equation can be interpreted as follows:
1. The cost value is -1.283, it shows that when X (green accounting) is 0, then Y (Firm Value) is -1.283.
2. Regression coefficient of 0.742 for variable X (green accounting), this means that when green accounting increases 1%, the value of the company will also increase amount of 74%.
3. In the equation of model I and model II, there is also an increase in the value of costal (ε), which is from -1.283 to 6.991. That is due to the addition of control variables so that they can contribute to increasing the constant value (α).

In table 3 and table 4 shows the significant value of the independent variable (green accounting) on the dependent variable (Firm Value) which is 0.009 and 0.000 (<0.05). This can be interpreted that H₀ is rejected, while the value of the constant b of the green accounting variable shows a positive direction, so in this case, it can be concluded that green accounting has a positive effect on firm value. On the other hand, the profitability and sales growth control variables do not affect the firm value because the significance value> 0.05. As for the leverage control, variable and size has a significant negative result which means that it affects the firm's value.

The results of this study indicate that green accounting which is proxied by ranking in the PROPER certificate has a significant positive effect on the value of natural resource management companies listed on the Indonesia Stock Exchange in 2016-2018 proxied by Tobin's Q. This means that the higher the PROPER rating obtained by the company or the better application of green accounting, it will be followed by an increase in the value of the company (Tobin's Q).

This research successfully confirms signaling theory, namely the application of green accounting will be good information for investors which can increase the value of the company. Investors pay attention to companies whose implement green accounting. That is because natural resource management companies are companies that directly utilize limited natural resources so in carrying out the production process, it directly intersects the environment. Therefore, it is important for companies managing natural resources to pay more attention to the environment. One of the companies’ concerns for the environment can be done through the application of green accounting.

In increasing the value of the company, it is necessary to improve the application of green accounting following the criteria of the PROPER certificate issued by the Ministry of Environment (KLH). Companies can increase the application of green accounting by making 3R (Reuse, Recycle, Recovery) efforts, implementing applications related to sustainable environmental management systems, and making efforts that produce long-term benefits for the benefit of the community. By carrying this effort, the rating that will be obtained by the company will rise to a gold rating (gold), which is the highest rank in the PROPER certificate category.

The results of this study are consistent with research conducted by Dewi and Oriana (2014) which states that investors will prefer to invest in companies whose implement green accounting. This is proven by research conducted by Tanc and Gokoglan (2015) which states that companies that apply green accounting will gain competitiveness in profits and increase corporate value as a result of social responsibility that has been carried out by companies. This research is also strengthened by research conducted by Puspitasari (2018), which revealed that the application of green accounting can increase Firm Value.

The results of the control variables in this study indicate that the first control variable, profitability, does not affect the firm's value. The higher or lower the profitability obtained by the company is not followed by the increase or decrease in the value of the company. This is supported by research conducted by Rahayu & Sari (2018) and Ukhriyawati & Amalia (2018) which states that profitability has no significant effect on firm value. The second control variable shows the results that sales growth does not affect firm value. The increase in sales growth or sales growth in the company does not make the company's stock prices high or low. This is consistent with the results of research conducted by Hansen & Juniarti (2014) and Sinaga et al (2019) which states that sales growth has insignificant results on firm value.

Furthermore, for the third control variable, leverage has a significant negative effect on firm value. Negative influences indicate that when the DAR (Debt to Assets Ratio) value is high, the value of the company will
go down, making investors less confident and do not dare to take big risks which can be detrimental to them. This is consistent with research conducted by Sari & Abundanti (2014) and Solikahan et al (2013) which states that carrying leverage influences firm value. The last variable is the size of the company which has a significant negative effect on firm value, namely when the size of a large company causes the value of the company to decline. The large size of the company will make it easier for companies to obtain debt from external parties. However, this makes investors unwilling to take risks when the company has excess debt so that the company’s value decreases. Therefore, the size of the company affects the value of the company (Hermuningsih, 2012; Pratama & Wiksuana, 2016).

4. CONCLUSIONS

The implementation of green accounting which is proxied in the PROPER certificate category has a positive effect on firm value. This means that the application of green accounting can cause market reactions with changes in stock prices. Thus, the implementation of green accounting can be a positive signal for investors. Also, the control variables used in this study, namely profitability and sales growth, showed no effect on firm value. Whereas the leverage and size of the company showed significant negative results. Thus, the value of the company is still dominated by the control variables used in this study, namely leverage and firm size. This means that investors in buying shares of a company more consider the leverage and size of the company compared to the application of green accounting.

The limitation in this research is some companies do not list the scans of the PROPER certificate obtained in the annual report, but only disclose it in a sentence which causes invalid data. Future research can search for companies that only reveal PROPER certificates with sentences such as searching and matching them on the official PROPER website of the Ministry of Environment.

REFERENCES


https://www.jatam.org/2018/03/08/pt-indominco-
mandiri-tak-cukup-hanya-didenda-2-miliar/.


