Sukmadilaga, Citra; Winarningsih, Srihadi; Yudianto, Ivan et al.

Article
Does green accounting affect firm value? : evidence from ASEAN countries

Provided in Cooperation with:


This Version is available at:
http://hdl.handle.net/11159/630217

Kontakt/Contact
ZBW – Leibniz-Informationszentrum Wirtschaft/Leibniz Information Centre for Economics
Düsternbrooker Weg 120
24105 Kiel (Germany)
E-Mail: rights[at]zbw.eu
https://www.zbw.eu/econis-archiv/

https://zbw.eu/econis-archiv/termsofuse

Terms of use: This document may be saved and copied for your personal and scholarly purposes. You are not to copy it for public or commercial purposes, to exhibit the document in public, to perform, distribute or otherwise use the document in public. If the document is made available under a Creative Commons Licence you may exercise further usage rights as specified in the licence.
https://zbw.eu/econis-archiv/termsofuse
Does Green Accounting Affect Firm Value? Evidence from ASEAN Countries

Citra Sukmadilaga1*, Srihadi Winarningsih1, Ivan Yudianto1, Tri Utami Lestari2, Erlane K. Ghani3

1Faculty of Economics and Business, Universitas Padjadjaran, Indonesia, 2Faculty of Economics and Business, Telkom University, Indonesia, 3Faculty of Accountancy, Universiti Teknologi MARA Cawangan Selangor, Malaysia. *Email: citra.sukmadilaga@unpad.ac.id

Received: 13 December 2022 Accepted: 27 February 2023 DOI: https://doi.org/10.32479/ijeep.14071

ABSTRACT

The purpose of this study is to examine whether green accounting influences firm value on public listed companies in the ASEAN countries that have won the Asia Sustainability Reporting Awards 2021. The study utilized the exploratory quantitative method using secondary data, namely financial reports, sustainability reports, and ESG Scoring on the respective company websites of 15 Companies that have won the Asia Sustainability Reporting Awards 2021. This study relied on observation years 2017-2021 published annual reports of public listed companies. Using the economic creation value added (EVA) as proxy, this study shows that application of green accounting reporting with the dimensions of energy consumption have no significant effect on firm value of the public listed companies in the ASEAN countries. This study shows that application of green accounting reporting with the dimensions of water consumption has a significant negative effect on EVA creation from companies in the Asia Sustainability Reporting List Awards. This study also shows that application of green accounting reporting with emission dimensions has a significant effect at a significance level of 10% with a positive direction towards EVA creation from companies in the Asia Sustainability Reporting List Awards. The findings in this study shed some lights on the importance of green accounting towards firm value of public listed companies in the ASEAN countries. The findings in this study are expected to be able to make a positive contribution to stakeholders’ interests and policies relating to other financial information required by stakeholders.

Keywords: Green Accounting, Economic Value Added, Economic Creation Value Added, Firm Value, ASEAN

JEL Classifications: F65, Q01

1. INTRODUCTION

Actions related to the company’s level of success are now increasingly shifting to increasingly broadly, previously the company was only seen from the economic aspect, now the investors too prioritizing responsible companies in social and environmental aspects (Halkos and Nomikos, 2021). Companies cannot be separated from various environmental influences, particularly in the economic, environmental, and political sectors. These three aspects are reflected considering profit (profit), earth (planet), and community (people). Departing from these reasons, the company is now starting to be concerned about considering the goals in achieving sustainable growth through operating activities carried out in a responsible manner. Of these three things then it can be said that this aspect is the 3P concept or Triple Bottom Line (TBL) (Elkington, 1997).

Sustainability is a balance between people-planet profit, companies must be responsible for positive or negative impacts on economic, social and environmental aspects (Lee, 2007). It has become a global fact regarding the number of industries with operational activities his company destroys the environment by producing pollution that destroys many natural resources.

In the last 20 decades, there has been a demand for attention on environmental issues and the pressure is on the business world to be responsible towards society and the environment is increasing (Al-Dhaimesh, 2020). The industry is required to apply companies...
that are friendly to the environment complies with the law and implemented with green-based management practices accounting, which is the process of identifying, measuring, presenting and disclosing costs for company activities and the environment where these environmental costs will be applied when management makes business decisions and will be conveyed to party’s stakeholders (Clarkson et al., 2008). However, as to date, study on environmental issues is largely under-research, particularly on green accounting.

The main objective of this study is to provide empirical evidence regarding green accounting. Specifically, this study examines the effect of green accounting on and firm value as proxied by EVA in the ASEAN companies that are included in the Asia Sustainability Reporting Awards list on year 2021. This study is motivated by the calls by parties that highlighted the importance of green accounting in improving the financial environmental performance in the business (Sebastian, 2022). In addition, It is necessary to use green accounting in order to preserve and improve the green environment. The findings in this study are expected to be able to make a positive contribution to stakeholders’ interests and policies relating to other financial information required by stakeholders. The next section provides a review of the literature relating to green accounting and firm value. This is followed by the research design that explains the sample, research instrument and data collection. Then, section four presents the results and discussion. The last section, section five, concludes this study.

2. LITERATURE REVIEW

2.1. Green Accounting

Green accounting, often known as environment accounting, is an approach to financial reporting and national well-being that takes environmental costs and benefits into consideration. Green accounting is sometimes known as environmental accounting, is the practice of including information about a company’s impact on the environment in the financial statements. Stakeholders including governments, banks, and financial statements are updated on the company’s efforts to protect the environment (Sebastian, 2022). It refers to a form of corporate responsibility environmental and social which support how the assessment of environmental performance work. Environmental performance is how it forms company concern for the environment. Ministry of Environment and Forestry the Republic of Indonesia published the Corporate Performance Rating Program (PROPER) to assess environmental performance (Traxler et al., 2020). Owen et al. (2014) stated that, in fact, green accounting is a new independent branch of science, which in essence has a much broader meaning compared to social accounting, environmental accounting, social and environmental accounting, even sustainable accounting. The object includes all phenomena, objects, realities, actions, or transactions that are attached to or occur in the natural environment and humans. Because human behavior (society) and corporations have a causal relationship with the natural environment universe, then social accounting, financial/economy accounting, and environmental accounting become part of green accounting. Accounting for land, land, vegetation, forests, water, air, atmosphere, ocean, carbon, waste, social and environmental responsibility of corporate entities (Corporate Social Responsibility) among others are part of green accounting.

The term “green accounting” refers to a new subfield of bookkeeping concerned with the identification, categorization, measurement, calculation, estimation, recording, and disclosure of information on the environment. Information about the environment that is useful for making business decisions is gathered and disseminated via the discipline of environmental accounting (Sebastian, 2022). To put it simply, it keeps track of and summarises the monetary worth of environmental products and services. Haninun et al. (2018) defined green accounting as a process of recognition, measurement of value, recording, summarizing, reporting, and disclosure of information regarding transactions, events, and or financial, social objects and environment in an integrated manner in the accounting process in order to produce information integrated, intact, and relevant accounting that is useful for users in assessing and economic and non-economic decision making. The basic pillars of green accounting information is integrated environmental, social and financial accounting information (Deegan, 2013; Yusoff, 2018; Belessis et al., 2022; Faisal et al., 2022; Imasuen et al., 2022). Thus, green accounting is a type of accounting that describes efforts to incorporate environmental and social benefits into economic decision-making or a business financial result for economic decision making, made in one report package format.

2.2. Economic Value Added (EVA)

EVAs is the spread between the rate of return on capital and the cost of capital, multiplied by value book economics of the capital used to generate that rate of return (Al-Dhaimesh, 2020). However, this methodology presents an increase to the size existing residual income, which is defined as operating profit minus capital charge. Mathematically EVA gives the same result in scoring as Discounted Cash Flow (DCF) or Net Present Value (NPV), which has long been widely recognized as the best theoretical analytical tool from a shareholder perspective (Eugster and Wagner, 2020); Rahayu et al., 2022; Sharma et al., 2022. The definition given by Stern Value Management to EVA shows that EVA is the difference between a business organization’s net operating profit after tax and the cost of capital opportunities invested in business organizations (Jakub et al., 2015). The following the formula for EVA.

\[ \text{EVA} = \text{NOPAT} - \text{Capital Charges} \]

Information:

NOPAT: Net Operating After Tax capital Charge: Weighted Average Cost Capital × Invested Capital

Based on the EVA formula, there are several steps that must be taken by management in measuring company performance using EVA, as follows:

1. Net operating after tax (NOPAT) according to Worthington and West (2015), is the total pool of profits available to provide cash returns to all capital that provides capital for the company (financial provider). As for the NOPAT formula is as follows:
\[ NOPAT = EBIT - (1 - \text{tax rate}) \]

Information:
- EBIT: Profit before interest and taxes
- Tax Rate: Tax Rate

2. Weighted average capital (WACC) according to Worthington and West (2015), is the weighted average of components such as cost of debt, preferred stock and common equity. The following is the WACC calculation:

\[ \text{WACC} = [Wd \times Kd (1-tax)] + [Wp \times Kp] + [Ws \times (Ks atau Ksb)] \]

Information:
- Wd: The proportion of debt to capital
- Kd: Cost of debt
- Wp: The proportion of preferred shares of capital
- Kp: Cost of preferred stock
- Ws: Proportion of common stock or retained earnings to equity
- Ks: Cost of retained earnings
- Ksb: Cost of new common stock

Studies have examined the existence of economic added value generated by the application green accounting in companies, especially companies in incoming ASEAN into the list of “Asia Sustainability Reporting Awards 2021,” which aims to test and analyze EVA factor as proxied by the ratio return on assets (ROA), return on equity (ROE), earnings per share (EPS), and cash flow from operations (CFO) in the implementation of green accounting in the industrial world. For example: Ashari and Anggoro (2021) provided evidence that application of green accounting at RSU Malang Raya has an effect of 42.3% on business success. This is supported by research by Al-Dhaimesh (2020) who stated that there is a statistically significant effect of green accounting on EVA Qatar listed companies, as well as found that energy, material, and emission variables have a negative effect on EVA.

2.3. Theories related to Green Accounting

Several theories support the delivery of corporate social responsibility are legitimacy theory and stakeholder theory (Deegan, 2013). Based on the Accounting Environmental Accounting Guidelines Japan (EAGJ) 2005, green accounting is a structure that systematically used to identify, measure, and communicate costs conservation or preservation of the environment and measuring the economic benefits of doing so environmental conservation. Therefore, it is appropriate if the company uses the concept green accounting because it is considered more fundamental in providing EVA (Ashari and Anggoro, 2021).

A group of studies have used legitimacy theory to examine disclosure practices green and social among companies (Deegan, 2013; Michelon et al., 2015; Pitrakkos and Maroun, 2020; Agbarha, 2022; Ahmad et al., 2022; Alnaa and Matey, 2022). It was emphasized that the support from the community was very much important for sustainability, survival, growth and corporate image. Thus, Perera et al. (2019) argued that legitimacy theory is directly relies on the concept of a social contract that focuses on how organizations depending on their environment, various societal expectations and how the company seeks to rationalize its presence in society by legitimizing its activities. The authors ensure that the companies being sued disclose environmental information which was significantly more positive in the year of prosecution than in other years. Compared to companies that were not sued, companies that did report could reveal more environmental information, this is an attempt to repair and proof of responsibility for environmental damage that the company do.

Another body of the literature have examined green and social information disclosure using stata. Ma and Ma (2019) observed the least studies examining stakeholder perspectives on green information disclosure and social. Therefore, it is important to study the views of various stakeholders, and only in this way can companies be better informed about how to respond to the information needs of that stakeholder group different. Financial information currently provided by accountants to the public Annual reports are no longer sufficient for the environment and society (Shubiri et al., 2012), Actions related to the company’s level of success are now increasingly shifting to increasingly broadly, previously the company was only seen from the economic aspect, now the investors too prioritizing responsible companies in social and environmental aspects (Halkos and Nomikos, 2021).

According to the Global Reporting Initiative (GRI), energy is one measure the environmental dimension that comprises all the energy consumed by an organization such as fuel, electricity, heating, cooling, or steam. It is a contribution organization that can be demonstrated by using energy more efficiently and opting for renewable energy sources is critical to combating climate change and to reduce the organization’s overall environmental impact. In context this study found that energy consumption has no effect on EVA creation. Parameters of energy consumption in this study using value of energy consumption used by companies included in the sample study. So, it can be said that the high and low use of energy by company, then it cannot influence the company in creating EVA. Therefore, the following hypothesis is developed:

\[ H_1 \]: Energy consumption has a positive effect on EVA creation from companies in the Asia Sustainability Reporting List Awards.

According to GRI, water is one of the measurements environmental dimensions. Water and Effluents: Relates to how organizations pay attention to how and where water is taken, consumed, and consumed disposed of associated with an organization’s activities, products, or services as resources together. In the context of this study found that water consumption has an effect significantly in a negative direction towards EVA creation. Parameter water consumption in this study uses the value of water consumption used by companies included in the research sample. Thus, it can be said that the more efficient the use of water by the company, the company can create EVA. Therefore, this study develops the following hypothesis:

\[ H_2 \]: Water consumption has a positive effect on EVA creation from companies in the Asia Sustainability Reporting Awards list.
According to GRI, emissions consist of all emissions that have a significant adverse impact on ecosystems, air quality, agriculture, and human and animal health. Including greenhouse gases (GHG), ozone-depleting substances (ODS), nitrogen oxides (NOX), and sulfur oxides (SOX). Contribution the organization in this case can be demonstrated by all efforts to reduce emissions. In the context of this study found that emissions have a significant effect on the level 10% significance in a positive direction towards the creation of economic value added (EVA). Therefore, the following hypothesis is developed.

$H_0$: Emissions have a positive effect on EVA creation from companies in the Asia Sustainability Reporting Award list.

### 3. Research Design

#### 3.1. Sample Selection

This study selects the companies in ASEAN that have won the Asia Sustainability Reporting Awards 2021 as the sample. The Asia Sustainability Reporting Awards recognize and honor those who have made significant contributions to sustainability reporting in Asia. The Awards recognize and honor the most successful reporting and communication methods related to sustainability. In 2021, 52 companies throughout the world have won this award. Out of the 52 companies, 29 companies are from the ASEAN countries. This study selects 15 companies from the 29 companies mainly from Singapore, Indonesia, and Malaysia based on purposive sampling with consideration of fewer criteria as shown in Table 1.

#### 3.2. Data Instrument and Data Collection

This study utilized content analysis. Specifically, the relevant sources of the companies obtained from obtained from various sources including the website of each the selected companies, financial report, sustainability report and ESG Score. The data of three years period from 2019 to 2021 was extracted from these sources.

#### 3.3. Data Analysis

The analysis model used in this study is multiple linear regression analysis. Regression analysis is an analysis that measures the effect of the independent variables (independent variable) to the dependent variable (dependent variable). If the influence measurement between variables involving more than one independent variable (X1, X2, X3, X4, X5, ..., Xn), called multiple linear regression analysis, it is said to be linear because each estimate of the value expected to increase or decrease following a straight line. Therefore, the multiple linear regression analysis equation used in this study is:

$$EVA_{it} = \alpha + \beta_{1}EC_{it} + \beta_{2}WC_{it} + \beta_{3}EM_{it} + \epsilon_{it}$$

Information:
- $EVA = \text{Economic Value-added}$
- $\beta_{1,2,3} = \text{independent variable coefficient}$
- $EC = \text{Energy consumption}$
- $WC = \text{Water consumption}$
- $EM = \text{Emission}$
- $\epsilon = \text{Random error}$

### 4. Results

#### 4.1. Descriptive Statistics

Table 2 shows that the number of observations for this study sample was 39 during the last three years (2019-2021). This study shows that the minimum value energy consumption is 10.39 and the maximum value is 23.81. Average value the variable is 18.3384, and the standard deviation is 3.51824. Variable water consumption shows that the minimum value of water consumption is 8.87 and value maximum of 20.34. The average value of these variables is 14.3020, and standard deviation of 3.19879. The emission variable indicates that the minimum value emissions is 2.58 and the maximum value is 20.25. Variable average value is 12.2867, and the standard deviation is 4.06047. Furthermore, the value variable companies proxied by the value of EVA shows that the minimum value EVA is 0.00 and the maximum value is 4.06047. Variable average value is 6.2995, and the standard deviation is 7.28119.

The results of the descriptive statistics show consistent trend with the financial information currently provided by accountants to the public annual reports which are no longer sufficient for the environment and society (Shubiri et al., 2012). Actions related to the company’s level of success are now increasingly shifting to increasingly broadly, previously the company was only seen from the economic aspect, now the investors too prioritizing responsible companies in social and environmental aspects (Halkos and Nomikos, 2021; Li et al., 2022; Nurhadi et al., 2022; Quddus et al., 2022). Companies cannot be separated from various environmental influences, particularly in the economic, environmental, and political sectors. It has become a global fact related there are many industries whose company’s operational activities damage the environment by produces pollution that destroys many natural resources. Especially in the last decades, the demand for attention to environmental issues has increased pressure on the business world to be responsible towards society and the environment is increasing (Al-Dhaimesh, 2020).

<table>
<thead>
<tr>
<th>Table 1: Sample Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
</tbody>
</table>

| Year of Analysis (2019-2021) | 13 |
| Total observation (3 years*13) | 39 |

<table>
<thead>
<tr>
<th>Table 2: Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy</strong></td>
</tr>
<tr>
<td>10.39</td>
</tr>
<tr>
<td><strong>Water</strong></td>
</tr>
<tr>
<td><strong>Emission</strong></td>
</tr>
<tr>
<td><strong>EVA</strong></td>
</tr>
</tbody>
</table>
4.2. Coefficients of Determination
Testing the coefficients of determination is used in this study to measure how much the size of the independent variable can affect the variation of the dependent variable. Table 3 presents the results. The table shows that the adjusted $R^2$ value is 50.03%. This indicates that the independent variable in this study is able to influence the variation of the dependent variable by 50.03% and the remaining 49.97% is influenced by other variables outside this study model.

4.3. Hypothesis Testing
This section presents the results of the hypothesis testing in this study. Table 4 presents the results. Table 4 shows that energy consumption has a coefficient value of $-0.339$ with a t-statistic of $-1.616$ and a significance of $0.127 > 0.05$. Such result indicates that energy consumption has no significant effect on EVA creation from companies in the Asia Sustainability Reporting List Awards. Therefore, H1 is not supported. According to the GRI, energy is one measure the environmental dimension that comprises all the energy consumed by an organization such as fuel, electricity, heating, cooling, or steam. It is a contribution that an organization has to demonstrate by using energy more efficiently and opting for renewable energy sources is critical to combating climate change and to reduce the organization’s overall environmental impact. In context this study found that energy consumption has no effect on EVA creation. Parameters of energy consumption in this study using value of energy consumption used by companies included in the sample study. Hence, it can be said that the high and low use of energy by company, then it cannot influence the company in EVA creation. This is consistent with Rosaline and Wuryani (2020) who stated that green accounting does not influence economic performance but environmental performance has a partial effect on performance economy.

Table 4 also shows that the effect of water consumption on EVA creation from companies in the Asia Sustainability Reporting List Awards. The results showed that water consumption has a coefficient value of $-1.298$ with a t-statistic of $-4.565$ and a significance of $0.000 < 0.05$. Such results indicate that rationalization has a significant negative effect on EVA creation from companies in the Asia Sustainability Reporting List Awards. Hence, H3 is supported. According to the GRI, water is one of the measurements environmental dimensions. Water and effluents relate to how organizations pay attention to how and where water is taken, consumed, and consumed disposed of associated with an organization’s activities, products, or services as resources together. In the context of this study found that water consumption has an effect significantly in a negative direction towards EVA creation. This is consistent with Al-Dhaimesh (2020) who stated that there is a statistically significant effect of green accounting on firm EVA Registered Qatar.

In addition, Table 4 shows that the effect of emissions on EVA creation from companies in the Asia Sustainability Reporting List Awards. Such results indicate that emission has a coefficient value of 0.375 with a t-statistic of 1.938 and a significance of 0.072 > 0.10. This condition shows that rationalization has a positive and insignificant on EVA creation from companies in the Asia Sustainability Reporting List Awards. Therefore, H3 is supported. According to GRI, emissions consist of all emissions that have a significant adverse impact on ecosystems, air quality, agriculture, and human and animal health. Including greenhouse gases (GHG), ozone depleting substances (ODS), nitrogen oxides (NOX), and sulfur oxides (SOX). Contribution the organization in this case can be demonstrated by all efforts to reduce emissions. Hence, the finding in this study show that more companies disclose information related to the emissions produced, the companies can create EVA. This finding is consistent with Al-Dhaimesh (2020) who stated that there is a statistically significant effect of green accounting on firm EVA listed Qatar, and found that the energy, material, and emission variables matter against EVAs.

5. CONCLUSION
This study aims to test and analyse green accounting in influencing firm value in companies that are included in the ASRA 2021 winning companies in ASEAN. The sample of this study uses ASRA winning companies in 2021 during 2019-2021 using the purposive sampling. This study shows that application of green accounting reporting with the dimensions of energy consumption in companies ASRA winners in 2021 does not create EVA from companies in the Asia Sustainability Reporting List Awards. This study also shows that dimensions of water consumption in the winning companies ASRA in 2021 has a significant negative effect on EVA creation from companies in the Asia Sustainability Reporting List Awards. Finally, this study shows that application of green accounting reporting with emission dimensions to ASRA winning companies in 2021 has a significant effect at a significance level of 10% with a positive direction towards EVA creation. This is consistent with studies that highlighted green accounting as a method that helps determine whether or not a company has been meeting its environmental obligations, and consequently, improves its firm value (Sebastian, 2022). In addition, when seen from a macro perspective, green accounting reporting is what drives sustainable economic development (Maama and Appiah, 2019). However, if green accounting is adopted, both the government and businesses must increase their investments in environmentally friendly practises and tools (Tu and Huang, 2015).

This study is not without limitations. First, the sample for this study is only 39 and hence, the generalizability of the findings may not be robust. Future study may increase the number of samples in order to increase generalizability. Secondly, this study used
only three variables to measure EVA creation. Future study may increase the number of independent variables.

In sum, this study provides further understanding to the interested parties on the factors that can lead to EVA creation. In addition, this study contributes to the accounting literature by providing empirical evidences on the effect of green accounting to organizational performance.

REFERENCES


Deegan, C. (2013), The accountant will have a central role in saving the planet really? A reflection on green accounting and green eyeshades twenty years later. Critical Perspectives on Accounting, 24(6), 448-458.


Ma, J., Ma, J. (2019), A research review of corporate green accounting information disclosure. IOP Conference Series Earth and Environmental Science, 310, 052071.


