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# Green Business as a Moderating Variable for Financial Ratios and Firm Value

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## Abstract

According to the Environmental Performance Index (EPI), Indonesia is listed at 133, from 180 countries in the world. The Ministry of Environment and Forestry of the Republic Indonesia has established a company performance rating, namely, PROPER, whose assessment aspect is almost equal to EPI such as environmental permits, water and air pollution, and waste management. The purpose of this research is to see the effect of profitability, solvency, and liquidity toward firm value with PROPER rating as a moderation variable. Research was conducted over 45 companies in Indonesia from 2015-2019 using multiple regression analysis. The results showed profitability and solvency had positive significant effect on the firm value. Meanwhile, liquidity had negative significant effect towards firm value. PROPER rating positively moderates the effect of profitability and solvency on firm performance. However, it negatively moderates the effect of liquidity towards firm value.

*Keywords:* green business, PBV, ROA, DER, Current Ratio

## I. INTRODUCTION

Concern for the environment is one of the main issues for countries in the world. Governments of various countries are constantly trying to solve environmental problems, both in their respective countries and on a global scale. One of the measuring tools used to see how successful a country's policies are in protecting ecosystems is the Environmental Performance Index (EPI) developed by Yale University. The EPI ranks 180 countries based on various criteria, including air quality, water and sanitation, water resources, agriculture, forestry, fisheries, and climate and energy. Since 2014, Indonesia has consistently been ranked in the bottom 80, namely 112 in 2014, 107 in 2016, and 133 in 2018. This shows that the government still has many challenges related to Indonesia's environmental quality.

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The government, especially through the Ministry of Environment and Forestry (KLHK), has launched various programs to address environmental problems. Some of the work programs of the Ministry of Environment and Forestry are water resources conservation, Forest Investment Program, social forestry, and the Index of Company Performance Rating Program in Environmental Management (PROPER). PROPER was developed to improve supervision and put pressure on industry so that environmental management performance improvements can be achieved. In the preparation of the PROPER index, the criteria used are similar to the EPI, namely energy conservation, natural resource maintenance, and community development. The PROPER rating is divided into five categories, with Gold as the best rating, followed by Green, Blue, Red, and Black as the worst ranking. Gold Ratings are given to companies that have carried out business activities by prioritizing social responsibility.

As part of society, companies need reputation or social recognition so that their business runs smoothly. A bad reputation will reduce public interest in becoming company stakeholders. This results in negative effects for the company, one of which is a decrease in the value of the company. Therefore, it is hoped that the company will increase awareness and compliance in implementing social responsibility and corporate governance, which will lead to an increase in corporate value. The value of the company itself according to The Anglo Saxon's point of view is to generate returns for company owners (Kim and Dam, 2003). There are several measuring tools for firm value including Tobin's q, Price Book Value, and market capitalization. Tobin's q is a ratio calculated by dividing the market value of a company by the cost of replacing assets. Price Book Value is a ratio that compares the company's market value with the company's book value. Meanwhile, market capitalization is measured by multiplying the number of shares outstanding with the value of the company's shares.

The higher the profitability, which means the company's ability to earn profits within a certain time, it indicates the higher the profit generated by the company so that the probability of the company to distribute dividends is higher which will attract public interest to buy company shares and have an impact on increasing the company's share price and leading to an increase in the company's stock price. When the company succeed to increase their profitability while continue to improve environmental management, investor interest will growth because investor prefer to invest in business with sustainability.

Solvency is the company's ability to survive in the long term. The ability to survive in question is the ability to pay loan interest and principal at maturity. Companies that have a low solvency value indicate the company has a risk of not being able to meet its short-term and long-term obligations and can cause bankruptcy. Profits owned by the company will most likely be transferred to pay off its short-term and long-term obligations so that investors will not get a return in the form of dividends. If the company has a better position in term of how they manage their

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environmental, investor could take into consideration when they decide about investment. The company's share price and value will not decrease significantly.

Liquidity is the company's ability to meet its short-term obligations and unforeseen cash-related needs. A high level of liquidity illustrates that the company is able to meet its short-term obligations and the possibility of having excess cash for dividend payments will also be higher. Dividend payment is one of the returns expected by investors therefore stock price and company value will increase. However, when the company do not pay dividend, investor could still have an interest towards company shares due to sustainability of the company. The investor will consider future ability of company to generate more profitability and in the end will give greater return for them in the long term.

Firm value as an indicator of company performance measurement should provide accurate predictions because it greatly influences investment decisions. The number of factors that can affect the value of the company makes this research interesting.

The formulation of the problem in this study are:

1. Does profitability have a positive effect toward firm value?
2. Does solvency have a negative effect toward firm value?
3. Does liquidity have a positive effect toward firm value?
4. Does profitability with PROPER as a moderating variable affect firm value?
5. Does solvency with PROPER as a moderating variable affect firm value?
6. Does liquidity with PROPER as a moderating variable affect firm value?

This study aims to obtain empirical evidence of the effect of profitability, solvency and liquidity on firm value with green business as a moderating variable. This research is expected to be useful for:

- a. Investors assist in making investment decisions by considering environmental activities that can be one of the indicators for implementing green business.
- b. The company determines the strategy to maintain and improve the company's performance.
- c. Researchers for reference for further research, especially on the impact or contribution of green business for company value.

## II.LITERATURE REVIEW

Various studies have been conducted previously to examine the factors that influence the value of shares, such as the research of Sujoko and Soebiantoro (2007) which uses the variables of share ownership structure, leverage, internal factors and external factors, Jusriani and Rahardjo (2013) which uses the variable profitability, policy Dividends, debt policy, and

managerial ownership and Hermuningsih (2013) which uses the variables of profitability, growth opportunity and capital structure.

On the other hand, there is very little research on the effect of the green industry index on firm value. Most of the research uses the variable Corporate Social Responsibility disclosure and does not specifically examine the effects of the green industry. Several previous studies are presented as follows:

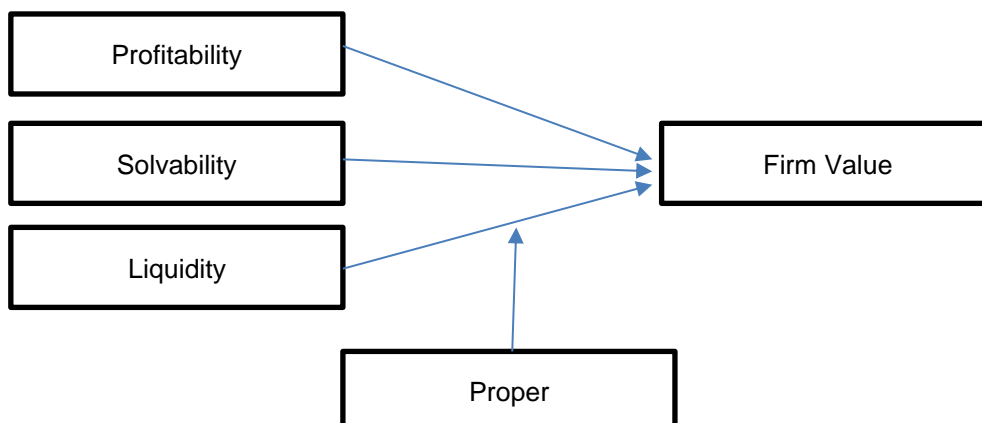
| Author                              | Publication Year | Dependent variables  | Independent Variables  | Result   |
|-------------------------------------|------------------|----------------------|--|--|
| Bodhanwala & Bodhanwala [1]         | 2018             | ROA, ROE, EPS        | Revenue Growth, ESG Score  | Sustainability has a significant positive effect on firm value   |
| Darko, Bonsu, Famiyeh, Kwarteng [2] | 2018             | Firm value           | Corporate governance, ownership structure, cash holding  | Cash holdings of firms negatively affect performance   |
| Deswanto & Siregar [3]              | 2018             | BVPS, EPS, ROA       | Environmental disclosure, return on sales ratio (ROS), environmental performance, firm size, leverage, strategic holding | environmental disclosures do not affect the firm market value and do not mediate the effect of financial performance and environmental performance on firm value |
| Al-Najjar & Al-Najjar [4]           | 2017             | Tobin's Q            | CGPI, Delta ROE. Ownership structure   | positive relationship between external financing needs and firm value. And also size and profitability are positively associated with firm value                 |
| Osazuwa & Che-Ahmad [5]             | 2015             | Book value of equity | EPS, Eco Friendly indicator (dummy), Leverage  | Positive relationship for profitability between eco efficiency & firm value.   |
| About & Diab [6]                    | 2018             | Tobin's Q            | Social environmental & corporate governance  | Higher ESG index result in higher firm value   |

| Author                           | Publication Year | Dependent variables | Independent Variables                                   | Result   |
|----------------------------------|------------------|---------------------|---|--|
| Siagian, Siregar & Rahardian [7] | 2013             | PBV,                | Corporate governance & reporting quality                | Better governance, higher firm value.<br>Low firm value, disclose more in reporting quality item                       |
| Yao, et al [8]                   | 2019             | Tobin's Q           | Eco innovation and institutional pressure as moderating | Eco innovation negatively relates to firm value. With moderating variables, results positively relate with firm value. |
| Wusono & Matusin [9]             | 2019             | Price Market Value  | Eco Efficiency with moderate profitability & leverage   | Eco efficiency positively relates with firm value. But profitability & leverage didn't moderate firm value             |
| Kuchin, et al [10]               | 2019             | Tobin's Q           | Green Label   | Stock price from companies who issued green bonds will increase  |

Hypothesis

1. Profitability has a positive effect towards firm value
2. Solvency has a negative effect towards firm value
3. Liquidity has a positive effect towards firm value
4. Profitability with PROPER as a moderating variable affects firm value
5. Solvency with PROPER as a moderating variable affects firm value
6. Liquidity with PROPER as a moderating variable affects firm value

Research Model



### III. RESEARCH METHODS

The object of the research that is determined is the companies that are given a rating in PROPER (Company Performance Rating Program) by the Ministry of Environment and Forestry of the Republic of Indonesia. The research method used in this research is quantitative research methods. This type of research is a causal study. The purpose of using causal study is to determine the relationship between profitability, solvency, and liquidity with company profitability as proxied by price to book value.

1. Independent Variable

$$Price\ to\ book\ value = \frac{Market\ price\ per\ share}{Book\ value\ per\ share}$$

2. Dependent Variable

a. Profitability

$$ROA = \frac{Net\ Income}{Average\ Total\ Assets}$$

b. Solvability

$$Debt\ to\ equity = \frac{Total\ Debt}{Total\ equity}$$

c. Liquidity

$$Current\ Ratio\ (CR) = \frac{Current\ Asset}{Current\ Liabilities}$$

3. Moderating Variable

The moderator variable in this study is the PROPER rating set by the Ministry of Environment and Forestry of the Republic of Indonesia. There are 5 levels set, namely Gold, Green, Blue, Red, and Black. Gold rating is given a value of 5, green 4, blue 3, red 2, and black 1. Calculation using a ratio scale that is by dividing the ranking value obtained by the total value of the overall ranking (15)

$$Proper = \frac{Rating\ Value}{15}$$

4. Sampling Technique

The sample in this study were companies that were given a PROPER rating by the Ministry of Environment and Forestry of the Republic of Indonesia which were listed on the Indonesia Stock Exchange during the period 2015 – 2019. The sampling method in this study was using the purposive sampling method. The following are the criteria used to determine the sample are as follows:

- a. companies that are given a PROPER rating by the Ministry of Environment and Forestry of the Republic of Indonesia listed on the Indonesia Stock Exchange during the period 2015 – 2019;
- b. Issuing and publishing financial statements as of December 31 with an annual accounting period (12 months) which have been audited by independent auditors consecutively for the period 2015 – 2019; And
- c. Presentation of the company's financial statements in Rupiah (Rp) consecutively during the period 2015 – 2019

#### 5. Data Analysis Techniques

The multiple regression equation model for this research can be formulated as follows:

$$PBV = \alpha + \beta_1 PROPER \times ROA + \beta_2 PROPER \times DER + \beta_3 PROPER \times CR + e$$

- PBV = Price to book value  
 A = Constant  
 $\beta_1, \beta_2, \beta_3$  = Regression Coefficient  
 PROPER = PROPER Rating  
 ROA = Return on Assets (Profitability)  
 DER = Debt to Equity Ratio (Solvency)  
 CR = *Current Ratio* (Liquidity)  
 e = *error*

## IV. FINDINGS AND RESULTS

Tabel 1  
ANOVA<sup>a</sup>

| Model |            | Sum of Squares | df  | Mean Square | F       | Sig.              |
|-------|------------|----------------|-----|-------------|---------|-------------------|
| 1     | Regression | 11936.857      | 3   | 3978.952    | 108.109 | .000 <sup>b</sup> |
|       | Residual   | 6661.681       | 181 | 36.805      |         |                   |
|       | Total      | 18598.539      | 184 |             |         |                   |

a. Dependent Variable: PBV

b. Predictors: (Constant), DER, ROA, CR

Tabel 2

| Model |            | Unstandardized Coefficients<br>B | Std. Error | Standardized Coefficients<br>Beta | t      | Sig. |
|-------|------------|----------------------------------|------------|-----------------------------------|--------|------|
| 1     | (Constant) | -2.832                           | 1.338      |                                   | -2.117 | .036 |
|       | ROA        | 78.148                           | 4.571      | .775                              | 17.096 | .000 |
|       | CR         | -1.038                           | .300       | -.189                             | -3.461 | .001 |
|       | DER        | 2.182                            | .697       | .168                              | 3.129  | .002 |

Tabel 3  
ANOVA<sup>a</sup>

| Model |            | Sum of Squares | df  | Mean Square | F       | Sig.              |
|-------|------------|----------------|-----|-------------|---------|-------------------|
| 1     | Regression | 11613.209      | 3   | 3871.070    | 100.305 | .000 <sup>b</sup> |
|       | Residual   | 6985.329       | 181 | 38.593      |         |                   |
|       | Total      | 18598.539      | 184 |             |         |                   |

a. Dependent Variable: PBV

b. Predictors: (Constant), PxCR, PxROA, PxDER

Tabel 4

| Model |            | Unstandardized Coefficients<br>B | Std. Error | Standardized Coefficients<br>Beta | t      | Sig. |
|-------|------------|----------------------------------|------------|-----------------------------------|--------|------|
| 1     | (Constant) | -2.319                           | 1.355      |                                   | -1.711 | .089 |
|       | PxROA      | 387.076                          | 23.605     | .760                              | 16.398 | .000 |
|       | PxCR       | -5.535                           | 1.526      | -.202                             | -3.626 | .000 |
|       | PxDER      | 10.018                           | 3.589      | .153                              | 2.792  | .006 |

## V. DISCUSSION

From table 4 it can be seen that all hypotheses are accepted, but in different directions. Profitability (ROA) and solvency (DER) have a significant positive effect, while liquidity (CR) has a significant negative effect. Meanwhile, the PROPER rating does not change the direction of its influence on firm value. Although there is a slight change in terms of the significance of the effect on liquidity and solvency when PROPER becomes the moderating variable.

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## VI. CONCLUSION

The PROPER rating does not have a significant effect on the relationship between financial ratios and firm value. There are several possibilities, including the scoring system used in this study is the final ranking, not the assessment per category. Second, the PROPER rating is still not clearly heard in the community, while the value of the company used has a stock market value as one of the components of the assessment. It would be nice if the Ministry of Environment and Forestry were more aggressive in promoting the importance of this ranking, so that there would be a positive impact on both the company and the community.

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