PAPER • OPEN ACCESS

Environmental performance, profitability, asset utilization, debt monitoring and firm value

To cite this article: R Br Bukit *et al* 2018 *IOP Conf. Ser.: Earth Environ. Sci.* **122** 012137

View the article online for updates and enhancements.

Related content

IOP ebooks™

Bringing you innovative digital publishing with leading voices to create your essential collection of books in STEM research.

Start exploring the collection - download the first chapter of every title for free.

Environmental performance, profitability, asset utilization, debt monitoring and firm value

R Br Bukit[1], B Haryanto[2] and P Ginting[1*]

[1]Faculty of Economic and Business, Universitas Sumatera Utara, 20155, Medan, Indonesia
[2]Faculty of Engineering, Universitas Sumatera Utara, 20155, Medan, Indonesia
E-mail: rina.bukit@usu.ac.id; rinabukit_dba@yahoo.co.id

Abstract. The growing issue on firm value shows that firm value is not only determined by the firm ability to increase financial profit, but also by the company's concern in maintaining the environmental condition. The industrial development produces waste that pollutes the environment that has potential to serious impact on the next life. In addition to provide financial benefits, companies are increasingly facing pressure to be socially responsible for the survival of the company. However, past findings demonstrate that the effect of environmental performance, profitability, and asset utilization to the firm's value are still unclear. This study aims to test whether environmental performance, firm profitability and asset utilization can effectively enhance firm value in two different conditions: intensive debt monitoring and less intensive debt monitoring. Sample of companies is taken from the list of Indonesia Stock Exchange during the period of 2013 to 2015. Using multiple regression analysis, discloses that: in intensive monitoring, managers tend to have high firm value when company has high environmental performance and or high profitability and high asset utilization. Monitoring system needs to be intensified especially for companies with the above characteristics.

1. Introduction

Firm value, which describes the company's ability to manage its assets, is important information to all parties concerned with the company. Generally, a firm has a goal to increase its value through increasing the wealth of owners or shareholders [1]. The firm's ability to create and deliver value to stakeholders may influence the perception of investors on the company, and also the firm share price.

Accounting literature has discussed many important factors that affect firm value such as environmental performance, profitability, asset utilization, and debt monitoring. However, past studies found the inconsistent results on the influence of the factors on firm value. For example, past studies showed the inconsistent results of the importance of environmental performance. Past studies documented that firms that practice the environmental performance have higher financial performance and profitability [2]; and high firm value [3]. However, past researchers have found that disclosure of environmental performance does not improve the quality of financial performance [4] and has no significant effect on firm value [5].

This study aims to examine the influence of environmental performance, profitability, asset utilization, and debt monitoring on firm value. This study also tests the moderating effect of debt monitoring on the relationship between environmental performance, profitability, asset utilization and firm value.

1.1. Environmental performance

Environmental performance is the company's activities to create green practices and recover the environmental conservation. This study measures the environmental performance by using the PROPER rating value released by Ministry of Environment. The assessment of PROPER is based on the performance of the company in fulfilling the various requirements stipulated in the prevailing laws and regulations and the performance of the company in the implementation of various activities related to environmental management activities that have not become a compliance requirement.

Past studies documented that high environmental performance were related with financial performance and profitability [6]; and firm value [7]. This study argues the first hypothesis as follows:

H1: There is a positive relationship between environmental performance and firm value.

1.2. Profitability (return on assets, ROA)

Return on asset is used to measure firm profitability. ROA means the ability of the company as a whole in generating profits with the total amount of assets owned. Past literatures documented that earning power from assets owned by the company will increase profit margin and firm value [8]. Yang et al.[9] confirm that firm profitability will result in more revenue, firm efficiency and thus increases the expected firm value. Thus this study argues that firm profitability influence firm value positively.

H2: There is a positive relationship between profitability and firm value.

1.3. Asset utilization

Asset utilization means the total revenues earned divided by total assets owned by the company [10]. Past study showed that asset utilization influence firm value in a positive way. Firms with high asset utilization ratio tend to expand their current capacity to meet prospective demand in the market [11].This study argues that effective asset utilization will increase firm value, while ineffective asset utilization will decrease firm value. Thus, hypothesis 3 is stated as follows:

H3: There is a positive relationship between asset utilization and firm value

1.4. Debt monitoring (debt to total equity, DER)

A company with higher DER ratio will get additional supervision from creditor or banking [12]. The company must be operated profitably in order to be able to pay the instalments of debt and the interest payable. In other words, companies with high debt ratios have high motivation and good effort that contribute to the improvement of company performance and value [13].

H4: There is a positive relationship between debt monitoring and firm value.

1.5. Interactions effect

This study also argues that environmental performance, profitability, and asset utilization influence firm value more among firms with intensive debt monitoring compared to firms with low debt monitoring. Thus, it is hypothesized in the following manner.

H5A: There is a positive relationship between environmental performance/debt monitoring interaction with firm value.

H5B: There is a positive relationship between profitability/debt monitoring interaction with firm value.

H5C: There is a positive relationship between asset utilization/debt monitoring interaction with firm value.

2. Materials and Methods

This study constructs a model of multiple regression equation for the relationship between environmental performance, profitability, debt monitoring, asset utilization and firm value as follows:

$$Tobin\ Q = \alpha + \beta_1 PROPER + \beta_2 ROA + \beta_3 ASSETUT + \beta_4 DER + \beta_5 PROPER * DER + \beta_6 ROA * DER + \beta_7 ASSETUT * DER + \varepsilon \dots \tag{1}$$

Where:
Tobin Q   = Firm value
PROPER   = Environmental performance
ROA   = Profitability
DER   = Debt monitoring
ASSETUT   = Asset utilization
PROPER*DER   = the interaction between environmental performance and debt monitoring
ROA*DER   = the interaction between profitability and debt monitoring
ASSETUT*DER   = the interaction between asset utilization and debt monitoring

2.1. Operationalization of variables

2.1.1. Firm value as dependent variable. This study measures firm value using Tobin's Q that is the sum of market value of all outstanding stock and market value of all debt divided by the value of all capital placed in the production asset.

2.1.2. Independent variable. Environmental performance was measured by using the value of Corporate Performance Evaluation Rating Program in Environmental Management (PROPER) rating such as gold (5), green (4), blue (3), red (2), and black (1). Profitability is measured by using return on asset that is net income divided by total asset. Asset Utilization is the asset utilization ratio calculated from the total revenues earned for each Rupiah of assets owned by the company. Debt monitoring is measured using Debt to Total Equity ratio (DER). The operationalization of all variables is summarized in Table 1.

Table 1.Operationalization of variables

Variable	Definition	Parameter	Scale
Firm value	Firm value is an economic measure reflecting the market value of a business.	Tobin Q = (MVA + Debt) / Total Asset	Ratio
Environmental performance	The company's performance in creating a green environment	PROPER; (1 = Gold, Green) and (0 = Blue, Red, and Black)	Dummy
Profitability	The effectiveness of the company in generating profits by utilizing its assets	ROA = net income / total asset	Ratio
Asset utilization	asset utilization ratio calculated from the total revenues earned for each Rupiah of assets owned by the company	ASSETUT = sales / total asset	Ratio
Debt monitoring	Additional firm' controlling from lenders	DER = total liability / total equity	Ratio

2.2. Research model

The final study sample is 16 companies in the period of 2012-2015 with a total of 60 observations from various sectors of companies. Details of the sample selection process are reported in Table 2.

2.3. Data Collection

Data of environmental performance is obtained from the official website of the Indonesian Ministry of Environment. Data from profitability, asset utilization and debt monitoring variables are obtained from the annual report of firms listed in Indonesia Stock Exchange

Table 2. Sample selection criteria

Criteria	Number of firm-year
Manufacturing companies consistently get PROPER ratings during the period of 2012 – 2015	18
Total companies that are not delisted from Indonesia stock exchange	16
Total observation (16 x 4 tahun)	64

3. Results and Disscussions

3.1. Descriptive statistic

Table 3 presents the mean values of all variables. The mean score of the firm value is 3.38, the mean value of profitability is 11.62, the mean value of debt monitoring is 0.75, and the mean value of the asset utilization is 1.38. Table 4 shows that firm with high rating PROPER (1) is 37.5% vs low rating PROPER (0) is 62.5%.

Table 3. Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	64	-20.80	71.51	11.62	14.35
ASSETUT	64	0.35	10.21	1.38	1.31
DER	64	-7.72	7.17	0.75	1.76
TOBIN_Q	64	0.23	27.31	3.38	5.30

Table 4. Frequency of PROPER

	Frequency	Percent	Cumulative Percent
0	40	62.5	62.5
1	24	37.5	100.0
Total	64	100.0	

3.2. Correlation analysis

Correlations between independent variables were tested to see if there were any multicollinearity problems with the data. Table 5 indicates that only ROA have high correlation with DER with correlation level of 0.232 or about 23.2%. This study also tests the correlation between all independent variables includes the interaction variables (EP*DM, PRO*DM, and AU*DM). Because this correlation is still below 0.8 or 80%, it can be said that there is no serious multicollinearity problem. Past study states that the occurrence of multicollinearity when the correlation between independent variables is above 80% [14].

Table 5. Correlation coefficient

	ASSETUT	PROPER	DER	ROA
ASSETUT	1.000			
PROPER	-0.007	1.000		
DER	0.082	0.028	1.000	
ROA	0.207	0.227	0.232	1.000

3.3. Results of multiple regressions

Table 6. Regression results model 1-4

	Expected Sign	Model 1	Model 2	Model 3	Model 4
		Dependent Variable: Firm Value			
(Constant)	?	-2.526	-2.175	-2.769	-.0538
		(-4.845)***	(-4.234)***	(-6.025)***	(-0.939)
Environmental Performance (EP)	+	0.601	-1.039	0.777	0.109
		(0.938)	(-1.198)	(1.381)	(0.202)
Profitability (PRO)	+	0.183	0.170	0.119	0.136
		(8.003)***	(7.609)***	(4.796)***	(6.531)***
Asset Utilization (AU)	+	2.618	2.489	2.550	0.452
		(11.042)***	(10.787)***	(12.261)***	(0.994)
Debt Monitoring (DM)	+	-0.088	-0.163	0.336	-1.552
		(-0.496)	(-0.950)	(1.834)*	(-4.944)***
EP*DM			2.119		
			(2.662)**		
PRO*DM				0.048	
				(4.368)***	
AU*DM					2.304
					(5.279)***
F-value		61.113	55.353	67.687	76.733
Sig		0.000	0.000	0.000	0.000

Notes: */ **/ *** is statistically significant at the 10% level/ 5% level/ 1% level

This research uses multiple linear regressions to analyze company value with several variables such as environmental performance, profitability, asset utilization and debt monitoring. The first step is to examine the direct relationship between independent variables and firm value. Table 6, Model 1 shows a significant positive relationship between profitability and firm value ($\beta = 0.183$. sig = 0.00); and between asset utilization and firm value ($\beta = 2.618$. sig = 0.00). It means that the higher the level of corporate profitability and asset utilization, the higher the value of the company. Thus, H2 and H3 are accepted. However, this study finds that the coefficients of environmental performance and debt monitoring are insignificant; It means H1 and H4 are rejected. This study also documents the positive coefficients of EP*DM, PRO*DM and AU*DM. The effect of environmental performance, profitability and asset utilization on firm value is moderated by debt monitoring. This study supports H5A, H5B and H5C.

4. Conclusions

The result shows that firm profitability has a positive and significant influence to company value, which is consistent with past researches [15]. Asset utilization also has a positive and significant effect on firm value; the result is consistent with past studies [10-11]. Thus, the higher the profitability ratio the more income that can be distributed to shareholders and thus the value of the company will be higher. This study also suggests that the more effective the utilization of assets of a company, the better the company's value. This study also proves the interaction effects of environmental performance and debt monitoring, of profitability and debt monitoring and of asset utilization and debt monitoring on firm value.

This study has several limitations. First, the sample data only retrieves company data that is ranked proper consistently during the study period so the data in this study is too small and is considered fewer representatives. Future research is expected not too tight in the sample selection. Second. the period of research is too short to see the effect of independent variables on firm value in each period. Thus, the results may be used with caution. Future research is needed to investigate the issue with a long span of time.

References

[1]   Brigham E F and Gapenski L C 2006 *Financial Management: Theory and Practice* 9. ed (Florida: Harcourt College Publisher)
[2]   Al-Tuwaijri S A. Christensen T E and Hughes K 2004 The relations among environmental disclosure, environmental performance. and economic performance: A simultaneous equations approach. *Accounting, Organizations and Society* 29 issue 5-6
[3]   Yadav P L. Han S H and Rho J J 2016 Impact of environmental performance on firm value for sustainable investment: Evidence from large US firms. *Business strategy and the environment* 25 issue 6
[4]   Ofoegbu G N and Megbuluba A 2016 Corporate environmental accounting information disclosure in the Nigeria manufacturing firms *International journal of management sciences and business research* 5 issue 12
[5]   Misani N and Pogutz S 2015 Unraveling the effects of environmental outcomes and processes on financial performance: A non-linear approach *Ecological economics* 109. No. 1
[6]   Dasgupta S. Hettige H and Wheeler D 2000 What improves environmental compliance? Evidence from Mexican industry *Journal of environmental economics and management* 39 issue 1
[7]   Jacobs B W, Singhal V R and Subramanian R 2010 An empirical investigation of environmental performance and the market value of the firm *Journal of Operations Management* 28. issue 5
[8]   Modigliani F and Miller M 1963 Corporate income taxes and the cost of capital: A correction American *Economic Review* 53. Junepg. 433-443
[9]   Yang CC. Lee CF. Gu Y X and Lee Y W 2010Co-determination of capital structure and stock returns – A LISREL approach: An empirical test of Taiwan stock market *The Quarterly Review of Economics and Finance* 50
[10] Ang J S, Cole R A and Lin W J 2000 Agency cost and ownership structure *Journal of Finance* 55
[11] Iskandar T M, Bukit R B and Sanusi Z M 2012 The moderating effect of ownership structure on the relationship between free cash flow and asset utilization *Asian Academy of Management Journal of Accounting & Finance* 8 (1)
[12] Gul F A and Tsui J S L 1998 A test of the free cash flow and debt monitoring hypotheses: Evidence from audit pricing *Journal of Accounting and Economics* 24
[13] Bukit R B and Nasution F N 2016 Voluntary disclosure, monitoring mechanism and firm value *IJABER* 14. no 11
[14] Gujarati D N 2003 *Basic Econometrics* 4 ed. (New York. USA: McGraw Hill).
[15] Agrawal A and Knoeber C R 1996 Firm performance and mechanisms to control agency problems between managers and shareholders *Journal of Financial and Quantitative Analysis* 31

Acknowledgements