THE IMPACT OF ENVIRONMENTAL PERFORMANCE AS REALIZATION OF ENVIRONMENTAL REGULATION ON FINANCIAL PERFORMANCE

Ika Prayanthi
Deske Mandagi

University of Klabat, Airmadidi, North Sulawesi,
Indonesia

Abstract:

The purpose of this study is to assert the impact of environmental performance as realization of environtmental regulation on financial performance for the span of one to three years (2010-2013) after the publication of environmental performance ratings. Environmental performance was measured by the ratings given by PROPER program, and financial performance was measured based on ROA and ROE. This study also examined if there is significant difference on financial performance among the group of companies on each rating. The research finding shows that there was no significant impact of environmental performance on financial performance on the first year announcement of the financial ratings, however there was a significant impact on the second and third year. Different tests using ONE WAY ANOVA indicated that there was significant difference on financial performance of companies in different rating, in each year. The result suggested that companies with green rating had the highest financial performance followed by gold rating.

Keywords: environmental performance, return on asset, return on equity.

INTRODUCTION

Along with the increasing of globalization, the awareness of issues related to management risk, continuity as well as the growth of a business compels a company or organization to remain stable yet still responsible for the social and environmental matters (Owen, 2005). In connection with its responsibilities toward the environment, Cramer (2006) said that a company will not be able to be well-publicized if the working conditions are poor, scandals involving the environment exist, as well as violations of human rights. Further, it was mentioned that these things will ruin a company's reputation, which in turn will result in the declining of sales up to the declining of employee's motivation.

The concepts that the purpose to gain profit is simply by increasing shareholder profits in the form of distribution of dividends and the increasing of stock price are narrow perspectives if they ignore the contribution of other things, which are also affected the success of a business (Sharma, 2009). That is the reason why there are companies that look at issues concerning social and the environment as an opportunity to position themselves in public as companies that are responsible for the social and environment. This is intended to increase the value of their shares, to motivate their employees to work innovatively for the company (Cramer, 2006). Ravi and Anupam (2011) stated a similar case, where in a company or organization with a good image in the social and environmental fields will increase its reputation and reduce government intervention as well as other stakeholders. Moreover, it is said that with the increasing of a company's reputation, hence it will attract more consumers, which later on will increase sales, and the company will eventually enjoy more profits, and also good relations with the stakeholders could be established.

To achieve these goals, some companies apply the Corporate Social Responsibility (CSR) concept. CSR is a concept in which a company integrates social and environmental matters in its operational activities and interactions with stakeholders (Aras and Crowther, 2010). Ravi and Anupam (2011) stated that if a company implements CSR, the company will find more new business partner and that it will give many new opportunities.

Companies that implement CSR do not wait until the government sets some rules or laws. Instead, they will find and decide for themselves the social and environment measurements for them to apply. Furthermore, it is said that the measurements would not only be adjusted according to their vision and strategy but also be adjusted to the concerns observed from other parties outside the company (Cramer, 2006). However, there are

companies that will only react after they are being required by the laws or regulations set by the government.

In Indonesia, the government has issued a regulation, which is the law No. 32 of 2009, concerning the protection and management of the living environment. In order to realize the implementation of this law, the Office of the Ministry of Living Environment has a program, namely the PROPER Program, which aims to assess the environmental performance of each company. Although the PROPER Program was developed by the Ministry of Environment as early as 1995, but in relation to the law No. 32 of 2009 the Ministry of Environtment has updated the environmental performance assessment that is adjusted with law No. 32 of 2009. In other words, the PROPER Program is also an implementation of Legislation No. 32 of 2009 about environmental protection and management. The Ministry for Environment Decree Number 97 of 2005 stated that in order to maintain the credibility of the PROPER Program, there should be an advisory, consisting of representatives from universities, environmental NGOs, mass media, banks, international institutions, and other institutions with environmental interest. Therefore, the assessment for environmental performance of companies would be appropriately comprehensive. This is also in accordance with what was mentioned by Gomez (2008), that the multidimensional factors are considered simultaneously when formulating and assessing environmental performance of a company.

In connection with the laws made by the government, Walley and Whitehead (1994) stated that most managers perform environmental management as a result of obedience to the effective laws and regulations. Environmental management is a company's strategy that will be reflected in the environmental performance based on a certain evaluation standard. Further, it is said that a good environmental management strategy will produce a good environmental performance, and a good environmental performance will have a good impact towards a company's financial performance (Klassen & McLaughlin, 1996).

The result of a research conducted by Arafat, Warokka and Goddess (2012) proved that there was a positive relationship between environmental performance and financial performance. In other words, superior environmental performance will obtain better financial performance. Other studies also proved that there is a positive relationship between environmental performance and financial performance are the following studies conducted by (Orlitzky, 2001),(Subroto, 2003), (Allouche & Laroche, 2005), (Van Beurden & Gossling, 2008), (Andersen & Olsen, 2011), (Quazi & Richardson, 2012), (Sun, 2012) and (Rodriguez, Gallego, & Perez, 2014).

The purpose of this study is to assert the impact of environmental performance on financial performance for the span of one to three years after the publication of environmental performance ratings. The study period was from 2010 – 2013, with the consideration that the management changes their environmental management strategy to obtain rating in the PROPER Program, whose assessment is adjusted with the mentioned legislation. In 2010, the announcement of PROPER rating a year after the law No. 32 of 2009 was made. Moreover, the impact of environmental performance on a company's financial performance a year after the announcement of the environmental performance, which is in 2011, the impact for two years after that, which is in 2012, and the impact of three years after, which is in 2013, will also be analysed.

The purpose of this study is to prove whether environmental performance as a realization of compliance to environmental laws have significant impact on financial performance (ROA and ROE) after first to three years environmental performance rating was announced by the Ministry of Environment through the PROPER Program. Further, this study also examine if there is any significant difference of company's financial performance among a group of companies in environmental performance rating.

RESEARCH METHOD

Purposive Sampling Method was used in this study. A linear regression analysis was used in order to examine the impact of environmental performance on a company's financial performance. Environmental performance is the independent variable, which was measured by the rating given by the PROPER Program. The dependent variable is the company's financial performance, measured by ROA and ROE. The samples of this study consist of companies that are listed and had received rating according to the PROPER Program year 2010.

FINDINGS AND DISCUSSION

The regression test result revealed that there was no significant impact of environmental performance on ROA and ROE first year after the announcement of the envirountment performance rating. However,a significant impact shown in the second and third year after announcement. Different testz results using the ONE WAY ANOVA reveal that there was a significant difference from the year 2011 to 2013 on financial performance of both ROA and ROE based on each category of environmental performance rating. Moreover, we found that companies with green rating category had the highest financial performance followed

by gold rating category. The details of the result are presented on the table 1 below and on the appendix .

Table 1: Regression Test Result

Independent Variable	Dependent Variable	Sig.	Correlation	Significant/Not Significant
Ranking Environmental Performance	Return on Asset One Year After (2011)	0.283	Positive	Not Significant
Ranking Environmental Performance	Return on Asset Two Year After (2012)	0.002	Positive	Significant
Ranking Environmental Performance	Return on Asset Three Year After (2013)	0.012	Positive	Significant
Ranking Environmental Performance	Return on Equity One Year After (2011)	0.508	Positive	Not Significant
Ranking Environmental Performance	Return on Equity Two Year After (2012)	0.002	Positive	Significant
Ranking Environmental Performance	Return on Equity Two Year After (2013)	0.011	Positive	Significant

Table 2: Different Test Result

Financial Performance	Difference Sig.	Significant/Not Significant
ROA 2011	0.104	Not Significant
ROA 2012	0.001	Significant
ROA 2013	0.000	Significant
ROE 2011	0.001	Significant
ROE 2012	0.002	Significant
ROE 2013	0.000	Significant

Findings of this study support the theory by Klassen and McLaughlin (1996) wich stated that a good environmental performance will have a good impact towards a company's financial performance. This findings also supports previous studies conducted by Arafat, Warokka & Goddess (2012) ;Van Beurden & Gossling (2008); Rodriguez , Gallego, and Perez (2014), Allouche and Laroche (2005); Orlitzky (2001); Quazi & Richardson (2012); Subroto (2003); Andersen and Olsen (2011); Sun (2012); Stanwick and Stanwick (1998). Nevertheless, the results of research this shows that it takes more than one year for companies with good environmental performance, to enjoy favorable financial performance.

Different tests results shown in Table 2 were all significant except ROA 2011, this study found that there was a significant difference to the company's financial performance both ROA and ROE each year from 2010 to 2013 in each environmental performance rating category, where the green rating class had a higher financial performance compared with other environmental performance rating class (For more details see appendix)

CONCLUSIONS

The result of this study shows that in the case of Indonesian companies, compliance to environtmental regulation (PROPER program) significantly impact the financial performance. The impact was significantly shown after 2 years after the announcement of environtmental performance rating. Furthermore, companies that implement compliance toward environtmental regulation, had a significant effect on finacial performance.

Theoretically, this study provides empirical evidence support the impact of compliance to environmental legislation that became the basis for determining environmental performance and its relationship to the company's financial performance. This research provide a reference for development of environmental regulation, accounting practices, and company's environmental management and strategy.

Practically, the results of this study provide information for the financial company or fun provider in analyzing company's credit applications. In addition, this study provides information to investors about all factors related to the environment as a consideration in determining investment decisions.

REFERENCES

Allouche, J., & Laroche, P. (2005). A Meta-Analytical Investigation Of The Relationship Between Corporate Social And Financial Performance. *Revue de Gestion Des Ressources Humaines*(57), 18-41.

Andersen, M. L., & Olsen, L. (2011). Corporate Social And Financial Performance: A Canonical Correlation Analysis. *Academy Of Accounting And Financial Studies Journal, 15*(2), 17-37.

Arafat, M. Y., Warokka, A., & Dewi, S. R. (2012). Does Environmental Performance Really Matter? A Lesson From The Debate Of Environmental Disclosure And Firm Performance. *Journal Of Organizational Management Studies, 2012*, 1-15.

Aras, G., & Crowther, D. (2010). *A Handbook Of Corporate Governance And Social Responsibility.* Farnham: Ashgate Publishing Ltd.

Cramer, J. (2006). *Corporate Social Responsibility And Globalization: An Action Plan For Business.* Sheffield: Greenleaf Publishing.

Klassen, R., & McLaughlin, C. (1996). The Impact Of Environmental Management On Firm Performance. *Management Science, 42*(1), 1199-1214.

Orlitzky, M. (2001). Does Firm Size Confound The Relationship Between Corporate Social Performance And Firm Financial Performance? *Journal of Business Ethics, 33*(2), 167-180.

Owen, D. (2005). CSR After Enron: A Role For The Academic Accounting Profession? *European Accounting Review, 14*(2), 395-404.

Quazi, A., & Richardson, A. (2012). Sources Of Variation In Linking Corporate Social Responsibility And Financial Performance. *Social Responsibility Journal, 8*(2), 242-256.

Ravi, K., & Anupam, S. (2011). Corporate Social Responsibility: A Corporate Strategy For New Business Opportunities. *Journal Of International Business Ethics, 4*(1), 10-17.

Rodriguez, m. d., Gallego, A. C., & Perez, B. E. (2014). Corporate Social Responsibility And Financial Performance: A Meta-Analysis. *Revista Espanola De Financiacion y Contabilidad, 43*(2), 193-215.

Sharma, S. G. (2009). Corporate Social Responsibility In India: An Overiview. *The International Lawyer, 43*(4), 1515-1533.

Stanwick, P. A., & Stanwick, S. D. (1998). The Relationship Between Corporate Social Performance And Organizational Size, Financial Performance, And Environmental Performance: An Empirical Examination. *Journal of Business Ethics, 17*(2), 195-204.

Subroto, P. H. (2003). *A Correlation Study Of Corporate Social Responsibility And Financial Performance: An Empirical Survey Toward Ethical Business Practices In Indonesia.* Cappela University. Ann Arbor: UMI Dissertation Publishing.

Sun, L. (2012). Further Evidence On The Association Between Corporate Social Responsibility And Financial Performance. *International Journal Of Law And Management, 54*(6), 472-484.

Van Beurden, P., & Gossling, T. (2008). The Worth of Values - A Literature Review On The Relation Between Corporate Social And Financial Performance. *Journal of Business Ethics, 82*(2), 407-424.

Walley, N., & Whitehead, B. (1994). It's Not Easy Being Green. *Harvard Business Review, 72*(3), 46-52.

APPENDIX

Environmental Performance → ROA 2011

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.142[a]	.020	.003	12.80310

a. Predictors: (Constant), Ranking Environmental Performance

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	192.243	1	192.243	1.173	.283[b]
	Residual	9343.410	57	163.919		
	Total	9535.653	58			

a. Dependent Variable: Return on Asset 2011
b. Predictors: (Constant), Ranking Environmental Performance

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.483	8.615		.172	.864
Ranking Environmental Performance	3.122	2.882	.142	1.083	.283

a. Dependent Variable: Return on Asset 2011

Environmental Performance → ROA 2012

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.402[a]	.162	.147	9.08535

a. Predictors: (Constant), Ranking Environmental Performance

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	909.526	1	909.526	11.019	.002[b]
	Residual	4704.982	57	82.544		
	Total	5614.508	58			

a. Dependent Variable: Return on Asset 2012
b. Predictors: (Constant), Ranking Environmental Performance

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-12.378	6.113		-2.025	.048
1 Ranking Environmental Performance	6.790	2.045	.402	3.319	.002

a. Dependent Variable: Return on Asset 2012

Environmental Performance → ROA 2013

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.326[a]	.106	.090	12.95105

a. Predictors: (Constant), Ranking Environmental Performance

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	1134.744	1	1134.744	6.765	.012[b]
1	Residual	9560.592	57	167.730		
	Total	10695.336	58			

a. Dependent Variable: Return on Asset 2013
b. Predictors: (Constant), Ranking Environmental Performance

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-15.257	8.714		-1.751	.085
1 Ranking Environmental Performance	7.584	2.916	.326	2.601	.012

a. Dependent Variable: Return on Asset 2013

Environmental Performance → ROE 2011

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.088[a]	.008	-.010	23.84177

a. Predictors: (Constant), Ranking Environmental Performance

ANOVAᵃ

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	252.027	1	252.027	.443	.508ᵇ
	Residual	32400.500	57	568.430		
	Total	32652.526	58			

a. Dependent Variable: Return on Equity 2011

b. Predictors: (Constant), Ranking Environmental Performance

Coefficientsᵃ

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	11.046	16.042		.689	.494
1 Ranking Environmental Performance	3.574	5.368	.088	.666	.508

a. Dependent Variable: Return on Equity 2011

Environmental Performance → ROE 2012

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.394ᵃ	.155	.140	31.04959

a. Predictors: (Constant), Ranking Environmental Performance

ANOVAᵃ

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	10097.852	1	10097.852	10.474	.002ᵇ
	Residual	54952.381	57	964.077		
	Total	65050.233	58			

a. Dependent Variable: Return on Equity 2012

b. Predictors: (Constant), Ranking Environmental Performance

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-55.820	20.892		-2.672	.010
Ranking Environmental Performance	22.624	6.990	.394	3.236	.002

a. Dependent Variable: Return on Equity 2012

Environmental Performance → ROE 2013

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.328[a]	.108	.092	24.49210

a. Predictors: (Constant), Ranking Environmental Performance

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4129.812	1	4129.812	6.885	.011[b]
	Residual	34192.180	57	599.863		
	Total	38321.991	58			

a. Dependent Variable: Return on Equity 2013
b. Predictors: (Constant), Ranking Environmental Performance

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-32.506	16.480		-1.972	.053
	Ranking Environmental Performance	14.468	5.514	.328	2.624	.011

a. Dependent Variable: Return on Equity 2013

Different Test Result ROA 2011

Descriptives

Return on Asset 2011

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
					Lower Bound	Upper Bound		
Red	11	10.9209	8.77506	2.64578	5.0257	16.8161	-5.09	19.84
Blue	42	8.9988	12.68214	1.95690	5.0468	12.9508	-59.00	29.42
Green	5	23.9500	17.10770	7.65080	2.7080	45.1920	.77	39.73
Gold	1	9.7100	.	.	.	.	9.71	9.71
Total	59	10.6363	12.82216	1.66930	7.2948	13.9777	-59.00	39.73

ANOVA

Return on Asset 2011

	Sum of Squares	df	Mean Square	F
Between Groups	1000.640	3	333.547	2.149
Within Groups	8535.013	55	155.182	
Total	9535.653	58		

Different Test Result ROE 2011

Descriptives

Return on Equity 2011

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max
					Lower Bound	Upper Bound		
Red	11	29.8000	23.53054	7.09473	13.9920	45.6080	4.40	62.57
Blue	42	15.3369	13.30270	2.05265	11.1915	19.4823	-38.97	49.86
Green	5	56.7900	52.97621	23.69168	-8.9887	122.5687	1.97	113.13
Gold	1	14.1300	.	.	.	.	14.13	14.13
Total	59	21.5259	23.72709	3.08900	15.3426	27.7092	-38.97	113.13

ANOVA

Return on Equity 2011

	Sum of Squares	df	Mean Square	F
Between Groups	8634.305	3	2878.102	6.591
Within Groups	24018.221	55	436.695	
Total	32652.526	58		

Different Test Result ROA 2012

Descriptives

Return on Asset 2012

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Red	11	3.2900	10.42391	3.14293	-3.7129	10.2929	-11.69	20.93
Blue	42	6.6483	6.55234	1.01105	4.6065	8.6902	-8.21	18.85
Green	5	23.5640	17.60024	7.87107	1.7104	45.4176	-.99	40.38
Gold	1	11.1000	.	.	.	.	11.10	11.10
Total	59	7.5312	9.83879	1.28090	4.9672	10.0952	-11.69	40.38

ANOVA

Return on Asset 2012

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1528.592	3	509.531	6.859	.001
Within Groups	4085.916	55	74.289		
Total	5614.508	58			

Different Test Result ROE Tahun 2012

Descriptives

Return on Equity 2012

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
					Lower Bound	Upper Bound		
Red	11	-6.6636	52.52864	15.83798	-41.9529	28.6256	-161.46	24.53
Blue	42	9.0214	14.27965	2.20340	4.5716	13.4713	-53.72	33.13
Green	5	59.7740	58.29809	26.07170	-12.6126	132.1606	-2.54	121.94
Gold	1	16.0500	.	.	.	.	16.05	16.05
Total	59	10.5173	33.48964	4.35998	1.7898	19.2447	-161.46	121.94

ANOVA

Return on Equity 2012

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15502.734	3	5167.578	s5.736	.002
Within Groups	49547.499	55	900.864		
Total	65050.233	58			

Different Test Result ROA 2013

Descriptives

Return on Asset 2013

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max
					Lower Bound	Upper Bound		
Red	11	4.7718	7.20874	2.17352	-.0711	9.6147	-.37	18.84
Blue	42	4.5614	5.84819	.90239	2.7390	6.3839	-15.36	17.41
Green	5	32.2820	36.30704	16.23700	-12.7991	77.3631	.64	71.51
Gold	1	6.3900	.	.	.	.	6.39	6.39
Total	59	6.9808	13.57948	1.76790	3.4420	10.5197	-15.36	71.51

ANOVA

Return on Asset 2013

	Sum of Squares	df	Mean Square	F
Between Groups	3500.619	3	1166.873	8.920
Within Groups	7194.717	55	130.813	
Total	10695.336	58		

Different Test Result ROE 2013

Descriptives

Return on Equity 2013

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
					Lower Bound	Upper Bound		
Red	11	5.1855	9.45256	2.85005	-1.1649	11.5358	-5.46	21.81
Blue	42	5.6226	14.99428	2.31367	.9501	10.2952	-56.84	25.59
Green	5	56.2180	64.16755	28.69660	-23.4565	135.8925	1.72	125.81
Gold	1	10.8600	.	.	.	.	10.86	10.86
Total	59	9.9176	25.70455	3.34645	3.2190	16.6163	-56.84	125.81

ANOVA

Return on Equity 2013

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11740.617	3	3913.539	8.098	.000
Within Groups	26581.375	55	483.298		
Total	38321.991	58			