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THE IMPACT OF FINANCIAL, NON-FINANCIAL, AND CORPORATE GOVERNANCE ATTRIBUTES ON THE PRACTICE OF GLOBAL REPORTING INITIATIVE (GRI) BASED ENVIRONMENTAL DISCLOSURE

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ABSTRACT

Business entities are able to exert their influence to particular stakeholders for their benefit by managing the information they disseminate to public, particularly if there is no regulation on such issue in place. Accordingly, the extent of accounting information disclosed to public, specifically voluntary environmental information, is determined by the internal characteristics of the business entities. This research asserts that the internal attributes of listed company in Indonesia: financial, non-financial and corporate governance characteristics, influence the extent of voluntary environmental disclosure information provided in the public companies' annual report. The objective of this research is to test the financial, non-financial, and corporate governance attributes of Indonesian public companies which contribute to the extent of environmental information disclosure in Indonesia.

This research measured the extent of Indonesian public companies' environmental disclosure using Environmental Disclosure Index (EDI) as a dependant variable. The index is developed from the parameters under environmental protocols of the Global Reporting Initiative (GRI) G3 framework. The predictor variables in this research are internal attributes of Indonesian public companies which comprise of financial attributes (company size, financial leverage, and economic performance), non-financial attributes (business complexity, extent of international operation, and industry sensitivity), and corporate governance attributes (stock block-holder structure and board of commissioners structure). Samples of 35 companies are chosen for each period during the year 2005-2008 to form a total of 140 observations. This research adopts multiple linear regression model after considering panel data fixed effect.

The results show that size of company, economic performance, and industry sensitivity positively affect the disclosure. However, the structure of the board of commissioners only moderately affects the disclosure. Financial leverage, business complexity, and stock-block holder variables show negative relationship with the disclosure. The extent of international operation does not show any relationship with disclosure. This research is limited by the use of annual report as the only means for public companies to publicize their financial and non-financial information to the public.
Keywords: *environmental disclosure, global reporting initiative, annual report, financial, non-financial, corporate governance, Indonesian public company.*

INTRODUCTION

Accountability is defined as the responsibility of management to report the achievement of company's objectives for the utilization of company's resources in an effective and efficient way (Ijiri, 1983). One approach to improve the accountability of financial information is the inclusion of social and environment elements into the practice of financial accounting disclosure (Grey et al., 1996).

In recent years, public companies worldwide have increasingly associated themselves as socially and environment sustainable entities, as half than Global Fortune 250 were both registered in stock market and socially responsible index such as FTSE4GOOD or Dow Jones Sustainability Index (KPMG, 2008). In order to further encourage the inclusion of social and environmental elements in the presentation of accounting information, the preparer and user of financial report will need to have better understanding of the management motivation to disclose non-financial information in the annual report and its relationship with the internal characteristics of the company itself.

The financial information disclosed to the public which is presented in the annual financial report has inherent limitation regarding the types of information that can be communicated. For examples, environmental issue has been regarded as an 'externality' which is irrelevant in the financial report. Such notion exists since it is difficult; to quantify all social and environmental consequences resulted from the operational activities of the company into monetary values. However, companies can reap the reward for disclosing the above mentioned non-financial information, as shown in the research by Cohen and Fenn (1997) who demonstrated positive correlation between the investments of environmentally friendly technology with the performance of the company's stock.

In the context of Indonesia, the Indonesian Institute of Accountants has not published any Statement of Financial Accounting Standards for publicly traded companies to disclose information concerning the impact of their business operation to the environment in the financial report. Moreover, the Capital Market Supervisory Agency (Bapepam) did not require the listed companies in Indonesia Stock Exchange (IDX) to provide any environment related information to the investor. Consequently, the practice of disclosing environment related information in the financial report or annual report for public company in Indonesia is performed voluntarily (Nurhayati et al., 2006). Therefore, this research is motivated to investigate characteristics of public companies which contribute to the extent of environmental information disclosed.

The purpose of this research is to assess which financial, non-financial, and corporate governance variables of Indonesian public companies that influence the extent of environmental information disclosure in Indonesia. The research comes into a conclusion that size of company, economic performance, and industry sensitivity show considerable and positively association with the extent of environmental disclosure. However; financial leverage, business complexity, and stock-block holder exhibit substantial inverse relationship with the observed variable.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Stakeholder is defined as all human agents who can affect or be affected by the activity of an entity (Gray et al., 1996). This definition implies that the entity and its environment form a complex system which can influence each other. In relevance with the practice non-financial disclosure, *stakeholder theory* describes that the extent of social information voluntarily disclosed by an entity can be utilized to identify the principal stakeholder for the entity as being the subject for being influenced by the entity (Gray et al., 1996). In other words, the act of organization to disclose information is seen as a form of ‘proactive’ action by the entity in managing the relationship with the intended stakeholders.

Environmental disclosure as a subset of social disclosure, plays a significant part in the decision making process of investor. This conclusion is obtained by Spicer (1978) who stated that there is a significant relationship between the value of investment (economy and financial indicator from the investment such as: profitability, the size of company, systematic and total risk, and price earnings ratio) and the environmental management performance of the company. The expanded research done by Shane and Spicer (1983) indicate that the movement of stock price is consistent with the change of investor perception after the information concerning the environmental performance of the company is released to the market.

Statement of Financial Accounting Standards (SFAS) No. 1 about Presentation of Financial Report does not require public companies in Indonesia to disclose environmental information. The pronouncement allowed the companies to choose whether or not to disclose such information based on their judgment. As the nature of environmental disclosure practice in Indonesia is voluntarily based, the *stakeholder theory* is appropriate in describing the motivation and driving force behind the decision of Indonesian public listed companies to disclose such information. This is regarded as one of the evidence in which the entity can proactively assert its influence to the intended stakeholders.

Previous research which investigated the relationship between the characteristics of public companies with the extent of disclosures reveals that the level of social disclosure of sampled public companies in Britain is positively correlated with the level of the companies' activity (Brammer and Pavelin, 2004). In addition, research done by Cohen and Fenn (1997) conclude that companies with additional investment in environmentally friendly technology exhibits positive and neutral stock return performance.

Research done in developing countries has led to various conclusions. Cahaya et al. (2008) infer that company size and the extent of international operation are significant predictors for social disclosure. While Nurhayati et al. (2006) conclude that the size of company and the industry type of the entity have positive and significant relationship with the extent of environmental disclosure.

A. Company Size

Stakeholder theory asserts that large companies are inclined to disclose more information in order to attract more resources from the capital market (Nurhayati et al., 2006). In its relation with political cost, the company size is very influential in determining the size of political cost which has to be paid out by the companies (Watts and Zimmerman, 1978). In addition, they argue that the disclosure of non-financial information is considered more effective compared to the disclosure of financial information in affecting the political cost. Large company will increase the level of voluntarily information disclosure in order to avert excessive government scrutiny.

Previous research conclude the existence of positive relationship between the size of the company with the extent of social and environmental disclosure (Spicer, 1978; Cooke, 1989; Meek et al., 1995; Brammer and Pavelin, 2004; Nurhayati et al., 2006; Cahaya et al., 2008; Gurdip and Joshi, 2009). Accordingly, this study proposes the following hypothesis:

H_1: There is a positive association between company size and the extent of GRI based environmental disclosure in Indonesian publicly listed company annual report.

B. Financial Leverage

Cornell and Shapiro (1987) argue that financing policy of corporate (the extent of leverage) is influenced by non-investing and investing shareholders in its relation with the explicit and implicit claims from the management. Explicit claims from the management in the form of financial disclosure are affected by capital investors and creditors. The accounting information disclosure can increase the value of such claim by the management (Watts and Zimmerman, 1990).

Result of the research on the association between financial leverage and the extent of disclosure done by Meek et al. (1995) show negative and significant relationship. Different finding is obtained by Craig and Diga (1998) who argue that there is no significant relationship between leverage with the extent of disclosure. Accordingly, this study proposes the following hypothesis:

H_2: There is a positive association between financial leverage and the extent of GRI based environmental disclosure in Indonesian publicly listed company annual report.

C. Economic Performance

Companies with more than average economic performance (profitability) have more incentives to differentiate themselves with companies with lower profitability with the intention to access lower cost capital (Meek et al., 1995). One way in which the differentiation can be achieved is by disclosing more information voluntary (Foster, 1986). Singhvi and Desai (1971) who examined the quality of financial information disclosure and Roberts (1992) who analyzed the determinant of corporate social responsibility information disclosure conclude that profitability has positive and significant relationship with the level of disclosure. Accordingly, this study proposes the following hypothesis:

H_3: There is a positive association between economic performance and the extent of GRI based environmental disclosure in Indonesian publicly listed company annual report.

D. Business Complexity

The increase of business complexity requires the management of business entity to establish sophisticated and efficient information system to gather information needed for the purpose of decision making (Cooke, 1989). In line with the growing business complexity, the number stakeholders (suppliers, customers, analyst, and public) linked with the business will increase as well. This research defines complexity of business as the existence of subsidiary within the structure of the business entity (Cahaya et al., 2008).

Company with subsidiary tends to have more sophisticated and efficient business information system to support their business operation as well as the increased demand of information from the stakeholders. This condition may encourage the company to voluntary disclose more information. However, the increased complexity also allows the company to engage in various environmentally sensitive matters indirectly with the use of the subsidiary. Previous research show insignificant relationship between the business complexities with the extent of financial report disclosure (Cooke, 1989; Haniffa and Cooke, 2000).

Accordingly, this study proposes the following hypothesis:

H_4: There is a negative association between business complexity and the extent of GRI based environmental disclosure in Indonesian publicly listed company annual report.

E. Extent of International Operation

The expansion of business operation into international market will bring increased interest from foreign stakeholders. As a result the demand for more diverse information will induce the company to disclose more information (Meek et al., 1995). Research done by Zarzeski (1996) concludes that companies with higher international sales tend to disclose more information.

Accordingly, this study proposes the following hypothesis:

H_5: There is a positive association between the extent of international operation and the extent of GRI based environmental disclosure in Indonesian publicly listed company annual report.

F. Industry Sensitivity

Companies operating in environmentally sensitive sectors such as forestry and mining are facing more scrutiny and pressure from interested stakeholders due to the direct impact of their business operations to the environment. Therefore, the type of industry in which the company operates significantly affects the extent of company's voluntarily disclosure (Meek et al., 1995). For the purpose of this research, nine categories of JASICA (*Jakarta Industrial Classification*) are classified into two groups: environmentally insensitive industries (Property and Real Estate, Infrastructure, Finance, Trade, Services and Investment industries) and environmentally sensitive industries (Agriculture, Mining, Chemical, Consumer Goods and Miscellaneous industries).

A number of researchers who investigate the influence of industry sector to the extent of financial report disclosure exhibit significant relationship (Craig and Diga, 1998; Nurhayati et al., 2006; Gurdip and Joshi, 2009).

Accordingly, this study proposes the following hypothesis:

H_6: There is a positive association between industry sensitivity and the extent of GRI based environmental disclosure in Indonesian publicly listed company annual report.

G. Stock Block-Holder Structure

Stock block-holder is defined as the percentage of common stock owned by the majority stockholder, which is used to measure the power of majority stockholder in the company's equity structure (Nurhayati et al., 2006). The management of company in which the stockholder equity is possessed by diversified and more widely dispersed owner will have greater incentive to voluntarily disclose information (McKinnon and Dalimunthe, 1993).

Schadewitz and Blevins (1998) shows the inverse relationship between the size institutional investor stock ownership and the extent of interim disclosure. However, Nurhayati et al. (2006) did not find significant relationship between the sizes of stock block-holder with the level of environmental disclosure. Accordingly, this study proposes the following hypothesis:

H_7: There is a negative association between stock block-holder structure and the extent of GRI based environmental disclosure in Indonesian publicly listed company annual report.

H. Board of Commissioners Structure

Board of commissioner's structure in this research is defined as the proportion of independent (non-executive) commissioners from the total number of commissioners (Nurhayati et al., 2006). The argument that the existence of independent commissioners can increase the extent of voluntarily disclosure is based on agency and resource dependency theory, in which independent commissioners have more power to drive the management to disclose more voluntary information compared to non-independent commissioners (Haniffa and Cooke, 2000).

Previous research which investigated the relationship between the proportion of independent commissioners with the extent of financial disclosure, exhibit a positive and significant relationship (Chen and Jaggi, 2000; Haniffa and Cooke, 2000). Different conclusion obtained by Nurhayati et al. (2006) shows insignificant relationship between the boards of commissioner's structure with the extent of environmental disclosure. Accordingly, this study proposes the following hypothesis:

H_8: There is a positive association between the board of commissioner's structure and the extent of GRI based environmental disclosure in Indonesian publicly listed company annual report.

RESEARCH METHOD

The population of this research is the annual report of all publicly listed companies in Indonesia Stock Exchange (IDX) for the period of 2005-2008. The sampling method used is purposive sampling, in which the samples had to be listed in IDX since 2005 and the annual reports had to be published continuously for the period of observation. In addition to published annual reports, this research also includes sustainability reports separately published from the annual reports to measure the Environmental Disclosure Index (EDI). Data panel model which consists of constant cross-sectional units observed for a specific period of time is applied in this research (Gujarati and Porter, 2009).

The Environmental Disclosure Index used in this research is based on the Global Reporting Initiative (GRI) G3 environment performance indicators. The EDI score is unweighted to maintain objective and consistent results across samples. The use of unweighted index is more suitable in the context of disclosure practice in developing countries considering the generally lower quality and quantity of information disclosed (Nurhayati et al., 2006) and distinct social, economic, and politic conditions compared to developed economies (Cahaya et al., 2008).

Dichotomous procedure is implemented to measure the total disclosure score for each companies sample, in which disclosed EDI attribute is rated with one (1) point and undisclosed EDI attribute is rated with zero (0) point. The Total Environmental Disclosure (TED) score for each sample is measured as follows (Cooke, 1989):

$$TED_i = \sum_{i=1}^{m} d_i$$

where: d = 1 if EDI disclosure attribute is disclosed

d = 0 if EDI disclosure attribute is undisclosed, where m ≤ n (discussed below)

Maximum Environmental Disclosure (MED) score for each samples is then computed by comparing TED score with the expected maximum environmental score expected to be disclosed by considering the industry sector background of each samples, whether the industry is environmentally sensitive or not. This treatment is done to prevent the company for being penalized for irrelevant environmental disclosure attributes not relevant to the industry sector (Cooke, 1989). Accordingly, the Maximum Environmental Disclosure (MED) score for each sample is measured as follows:

$$MED_i = \sum_{i=1}^{n} d_i$$

where: d = expected EDI disclosure attributes to be disclosed

n = the maximum number of EDI disclosure attributes that the company expects to disclose, where n = 9 for environmentally insensitive industry sector and n = 13 for environmentally industry sector.

The Environmental Disclosure Index (EDI) score which measures the extent of relative disclosure for each sample is obtained as follows (Cooke, 1989):

$$EDI_i = {}^{TED_i}/_{MED_i}$$

Measurement techniques used to calculate the independent variables are based on previous studies (Craig and Diga, 1998; Haniffa and Cooke, 2000; Nurhayati et al., 2006; Cahaya et al., 2008). The following table summarizes the measurement procedures for independent variables used in this research:

Table 1: Independent Variables Measurement Method

No.	Independent Variable	Measurement Method	Scale
1.	Company size (LAST)	ln (Total Assets)	Ratio
2.	Financial leverage (LEV)	Leverage (Total Liabilities / Total Assets)	Ratio
3.	Economic performance (ROA)	Return on Assets	Ratio
4.	Business complexity (SUB)	0 = No subsidiary 1 = Subsidiary exists	*Dummy*
5.	Extent of international operation (INT)	0 = No international sales, subsidiary or branch 1 = International sales, subsidiary or branch	*Dummy*

		exists	
6.	Industry sensitivity (SEN)	0 = Environmentally insensitive industry sector 1 = Environmentally sensitive industry sector	*Dummy*
7.	Stock block-holder structure (SHM)	Percentage of stocks owned by the majority stockholders	Ratio
8.	Board of commissioners structure (KOM)	Percentage of independent commissioners in board of commissioners	Ratio

The following multiple linear regression equation applies panel data fixed effect estimation model:

$$EDI_{it} = \alpha_0 + \alpha_1\ LAST_{it} + \alpha_2 LEV_{it} + \alpha_3 ROA_{it} + \alpha_4 SUB_{it} + \alpha_5 INT_{it} + \alpha_6 SEN_{it} + \alpha_7 SHM_{it} + \alpha_8 KOM_{it} + u_{it}$$

where:

EDI = environmental disclosure index score

LAST = company size

LEV = financial leverage

ROA = economic performance

SUB = business complexity (dummy)

INT = international operation (dummy)

SEN = industry sensitivity (dummy)

SHM = stock block-holder structure

KOM = board of commissioners structure

u = residual error

it = i-th observation on t period

α = constants

RESULTS

From the total of 316 companies registered in Indonesia Stock Exchange for the year 2008 (IDX, 2008), 35 companies are obtained for each period of observation. Consequently, the total number of observation for this research is 140 observations (for the period 2005-2008).

The summary of descriptive statistics results for independent variables used in this research are depicted in Table 2 and Table 3 respectively.

Table 2: Descriptive Statistics Summary of Non-Dummy Independent Variables

No.	Non-Dummy Variable	Minimum	Maximum	Mean	Standard Deviation
1.	Total Assets (in billion IDR)	118	358,439	27,255	60,290
2.	LEV	0.1706	0.9807	0.5819	0.2111
3.	ROA	-0.1972	0.6216	0.0627	0.0937
4.	SHM	0.1308	0.9900	0.5085	0.2013
5.	KOM	0.1667	0.8000	0.4243	0.1179

Standard deviation value of Total Assets (IDR 60,290 billion) is much larger compared to the mean value (IDR 27,255 billion). This indicates a significant variance of company size for the samples. Similar reasoning also applies for ROA variable as well, in which standard deviation value of 9.37% is larger than its mean value of 6.27%. However; LEV, SHM, and KOM variables exhibit a more uniform value characteristic across the samples as indicated by their larger mean value compared to the standard deviation. The mean value of 50.85% for SHM variable suggests that the ownership of public companies in Indonesia is still dominated by a single majority stakeholder.

Table 3: Descriptive Statistics Summary of Dummy Independent Variables

No.	Dummy Variable	Observed Frequency	Percentage (%)
1.	SUB		
	- No subsidiary	18	12.86%
	- Subsidiary exists	122	87.14%
2.	INT		
	- No international operation	59	42.14%
	- International operation exists	81	57.86%
3.	SEN		
	- Environmentally insensitive	80	57.14%
	- Environmentally sensitive	60	42.86%

The result of the above table for SUB variable suggests that the majority (87.14%) of sampled public companies have at least one subsidiary. While more than half of the samples (57.86%) are engaged in international business operations. In addition, 57.14% of the sampled companies are operating in business with no direct impact to the environment.

The results of dependant variable (EDI / Environmental Disclosure Index) mean value ranked by industry sectors are illustrated at the following Table 4:

Table 4: Dependant Variable Mean Value Ranking based on Industry Sector

Rank	Industry Sector	EDI Mean Value
I	Mining	0.6538
II	Miscellaneous Industry	0.3462
III	Consumer Goods Industry	0.2788
IV	Infrastructure, Utility, and Transportation	0.2222
V	Basic and Chemical Industry	0.1795
VI	Agriculture	0.1731
VII	Property, Real Estate, and Building Construction	0.1722
VIII	Finance	0.1296
IX	Trade, Service, and Investment	0.1019

Indonesian public companies operating in the mining sector exhibits the highest level of environmental disclosure, with a mean value of 0.6538. The second and third industries with high EDI mean value are miscellaneous and consumer goods industry with EDI mean value of 0.3462 and 0.2788 respectively. It should be noted that difference of EDI mean value between the first and second rank is significant (88.9%). This result indicates significant difference of environmental disclosure level for samples across different industries.

In order to ensure that the panel data equation estimation result faithfully represents the tested samples; assumption tests such as normality, multicollinearity, and heterocedasticity test have been done before conducting the multiple linear regression. The estimation result of multiple liner regression for hypotheses 1-8 which applies panel data fixed effect estimation model is as follows:

Table 5: Multiple Linear Regression Estimation Result with Panel Data Fixed Effect Model

Variable	Coefficient	Standard Error	t-Statistics	p-value	
α	-0.172	0.113	-1.513	0.133	
Company size	0.034	0.008	4.376	0.000	*
Financial leverage	-0.283	0.061	-4.630	0.000	*
Economic performance	0.525	0.137	3.832	0.000	*
Business complexity	-0.089	0.036	-2.508	0.013	**
Extent of international operation	-0.019	0.034	-0.555	0.580	
Industry sensitivity	0.093	0.035	2.637	0.009	*
Stock block-holder structure	-0.121	0.058	-2.075	0.040	**
Board of commissioners structure	0.198	0.110	1.792	0.076	***

* Significant at α = 1% (two-tailed probability)

** Significant at α = 5% (two-tailed probability)

*** Significant at α = 10% (two-tailed probability)

DISCUSSION AND CONCLUSION

The following discussion is based on multiple regression estimation result as depicted in Table 5:

1. Financial attributes are represented by company size, financial leverage, and economic performance (profitability). The company size has linear relationship with the extent of voluntary GRI based environmental disclosure of Indonesian public companies. Larger companies are more vulnerable to high political cost (Watts and Zimmerman, 1978), which in turn compel them to provide greater voluntarily disclosure to the public in order to evade excessive oversight and regulations from the public and government. This conclusion is consistent with previous research performed by Spicer (1978), Cooke (1989), Meek et al. (1995), Brammer and Pavelin (2004), Nurhayati et al. (2006), Cahaya et al. (2008), and Gurdip and Joshi (2009).

   Economic performance has in-line relationship with the extent of voluntary GRI based environmental disclosure of Indonesian public companies. Singhvi and Desai (1971) argue that if the company has better rate of return (profitability), the management will have more incentives to disclose more complete information in order to support the sustainability of their station and compensation. This result corresponds with the findings obtained in Singhvi and Desai (1971) and Roberts (1992) research.

   However, the estimation result for financial leverage shows inverse relationship with the extent of environmental disclosure; which is different with the proposed hypothesis. This result can be interpreted as the indifference of creditors of public companies in Indonesia in responding of the additional environmental information disclosed by the management. This conclusion is consistent with the result obtained by Meek et al. (1995).

2. Non-financial attributes are represented by business complexity, extent of international operation, and industry sensitivity. The industry sensitivity have positive relationship with the extent of voluntary GRI based environmental disclosure of Indonesian publicly listed companies, in which companies operating in more ecologically sensitive industry sector tend to disclose more environmentally related information. This is consistent with the findings obtained by Craig and Diga (1998), Nurhayati et al. (2006), and Gurdip and Joshi (2009).

   Inverse relationship exists between business complexity and the extent of environmental disclosure. One line of reasoning for such finding is there is the tendency for Indonesian publicly listed companies that operate the business through their subsidiary to conceal information through the use of aggregation/consolidation of annual report.

   In addition, this research cannot identify the association between the extent of international operation and the extent of environmental disclosure. This lack of relationship is caused by a minor contribution of the international operation (sales) for Indonesian public companies compared to the overall business operation. As a result, there is a lack of incentives for the management to provide additional and better quality disclosure information for foreign stakeholders. The argument This finding is consistent with the result obtained by Meek et al. (1995) and Craig and Diga (1998).

3. Corporate governance attributes are represented by stock block-holder structure and board of commissioners' structure. Inverse relationship exists between stock block-holder structure and the extent of voluntary GRI based environmental disclosure. This finding reveals that more centralized ownership of stock by institutional ownership will negatively impact the amount of disclosed information. The already low equity cost of agency, which is expected in entity with highly centralized stock ownership (McKinnon and Dalimunthe, 1993), will discourage the motivation of management to provide additional non-financial disclosure to the public.

The moderate association which exists between the proportions of independent commissioners with the degree of disclosed environmental information is partly caused by the regulations set by Bapepam (Capital Market Supervisory Agency) Regulation No. SE-03/PM/2000 and Indonesia Stock Exhange Regulation No. I-A which mandated that a minimum of 30% of the board of commissioners' members have to be independent. This finding is consistent with the studies of Chen and Jaggi (2000) and Haniffa and Cooke (2000).

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