

**A DEVELOPING COUNTRY'S NATURAL
ENVIRONMENT DISCLOSURE INDEX**

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NATURAL ENVIRONMENT DISCLOSURES OF INDONESIAN LISTED COMPANIES

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ABSTRACT

This paper is an empirical study of the relationship between firm specific characteristics (size of company, type of industry and economic performance) and corporate governance characteristics (ownership structure and board composition) and the extent of natural environment disclosures (NED) practices of Indonesian listed entities.

100 annual reports for the year ending 2003 were analyzed using an environment disclosure index that was adapted for a developing country context. The descriptive statistics analysis reveals a very low level of NED practices (9%) and a relatively small number of the Indonesian listed entities that made any NED (37 out of 100 entities). This finding indicates that natural environmental disclosures are not regarded as a primary consideration in the information context of Indonesian companies.

The multiple regression analysis reveals that size of company and type of industry are highly significant predictors of NED practices by Indonesian listed entities. Larger entities and those operating in high profile industries disclosed more NED than smaller entities in low profile industries. Further analysis reveals that *Environmental Policy* and *Environmental Sustainability* were the most disclosed categories in the annual reports while not one Indonesian listed entity disclosed any information on *Environmental Audit*.

This study suggests that the *bourgeois* political economy framework partially explains the variability of NED practices of Indonesian listed entities. The important discovery of size and industry type determinants adds to body of knowledge of natural environmental disclosures in this developing country region.

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SECTION ONE INTRODUCTION

There has been considerable interest in natural environmental disclosures (NED) across many countries in the accounting literature (Choi, 1999; Belal, 2000; Gray, Javed, Power and Sinclair, 2001; Solomon and Lewis, 2002; Cormier and Magnan, 2003; Lodhia, 2004). Most of the NED studies have been conducted in the context of developed countries such as the United Kingdom, the United States, Australia and the countries of Western Europe (Gray, Kouhy and Laver, 1995a; Hackston and Milne, 1996; Choi, 1999; Williams, 1999). However, a few studies have been carried out in a developing country context (Belal, 2001, 2000; Ahmad and Sulaiman, 2004; Brown, 2005). This study contributes to the developing accounting literature by focusing on the NED practices of Indonesian listed entities.

Indonesia faces numerous important environmental problems,: (1) mining and industrial pollution affecting all levels of the food chain on oceans and water systems; (2) chronic air pollution, especially in industrial areas and large cities, causing respiratory problems for millions of people; (3) inadequate waste management contributing to poor hygiene conditions and health problems; (4) smoke hazards frequently spreading to neighboring countries, such as Malaysia and Singapore, that causing acid rain and diplomatic problems; and (5) deforestation, at the rate of 3.4 million hectares per year (WALHI, 2004). Despite these environmental problems, Indonesia possesses rich and exotic habitats (Geocities, 2005). It has more than 18,100 islands (of which about 6,000 are inhabited) that are scattered around the equator (Geocities, 2005). Indonesia is categorized as an economically developing country with a population of 238.4 million people and a per capita income of US\$

3,200 (Wikipedia, 2005); it has a culturally diverse population with hundreds of languages spoken and many different ethnic backgrounds³ (Wikipedia, 2005).

Indonesian accounting system is governed by Indonesian Institute of Accountants (IAI). Through its Financial Accounting Standard Board (DSAK), IAI develops Statement of Financial Accounting Standards (PSAK) guiding entities in preparing financial statements (IAIGlobal, 2005). Indonesia adopted International Accounting Standards (IAS) in 1995. Eventhough there are standards for regulating 'sensitive' industries such as forestry (PSAK No. 32) and mining (PSAK No. 33), there are no specific requirements to disclose natural environmental information. In fact, no NED requirements are mandated by the Securities Supervisory Agency (BAPEPAM) as a prerequisite for entities publicly listing on the Jakarta Stock Exchange (JSX). Consequently, environmental disclosure practices in Indonesia are voluntary. Nevertheless, Indonesia has a ministry (Kementrian Lingkungan Hidup) that specifically manages environmental issues (Menlh, 2005). Since 1993, this government institution has produced many environmental laws and regulations although their lack of breadth and overall efficiency are problematic.

The three inter-related research questions of the study are:

1. To what extent do Indonesian listed companies of the Jakarta Stock Exchange (JSX) provide natural environment information in their annual reports?
2. Are there any relationship between the quantity of natural environment information disclosed and the corporation's specific characteristics, such as size of company, type of industry and economic performance?
3. Are there any relationship between the quantity of natural environment information disclosed and the corporate governance characteristics, such as ownership structure and board composition?

³ Therefore, Indonesia has a national motto "Bhinneka Tunggal Ika" (means unity in diversity).

This study makes important contributions¹ to the research literature. Firstly, it increases the knowledge of NED practices in Indonesia and developing countries in general. Secondly, by adopting political economy framework, this study views NED practices from the economic, social and political perspectives (Gray et al, 1995a). Such a wide-ranging perspective helps in explaining corporate social (and environmental) practices carried out on a voluntarily disclosures (Gray et al, 1996). Thirdly, this study incorporates corporate governance characteristics to assess the quantitative NED made in annual reports. Studying corporate governance is useful since unique characteristics (e.g. weak disclosure and concentrated ownership) of corporate governance in Indonesia may differ from those of the western world (Rosser, 2003).

This study is organized as follows. Section Two discusses natural environment disclosures and the theoretical framework adopted in the study. It also reviews past NED studies in developed and developing country backgrounds, as well as the conceptual schema and hypotheses development of the study. Section Three presents the research methodology and statistical tools used in this thesis. The results of the descriptive statistics of this study are presented in Section Four and the results of

¹ There are several assumptions and limitations in this study. First, it assumes that many stakeholders of Indonesian entities use the annual report as the main source of information (Roberts, 1992; Hossain, Perera and Rahman, 1995; Neu, Warsame and Pedwell, 1998) since it is both accessible to the stakeholder and regularly produced by the entities. Second, the complexity of Indonesia's business environment inherently limits the ability of empirical research to capture all possible dimensions influencing corporations' decision to disclose information (Roberts, 1992). However, firm-specific and corporate governance variables have been widely used in the area of voluntary disclosure studies (see for example, Haniffa and Cooke, 2002) and, thus, may be able to present a useful explanation of the variability of NED practices of Indonesian listed entities. Third, although sophisticated NED indices are used in developed country environmental accounting studies, this study only considers a simplified NED index that captures eight NED categories (Brown, 2005). This simplified NED index is arguably more suitable for measuring the extent of voluntary NED since it has been employed in previous developing country environmental accounting contexts (for example see Brown, 2005).

inferential statistics are covered in Section Five. The final section discusses the implications of the results and recommendations for future research.

SECTION TWO LITERATURE REVIEW AND HYPOTHESES

According to political economy theory, business activities take place in a social, political and economic framework (Gray, Owen and Adams, 1996). Political economy theory has two perspectives: classical or bourgeois. This study adopts bourgeois political economy perspective because it helps in explaining much of corporate social (and environmental) practices of Indonesia and deals with voluntarily disclosures. Bourgeois political economy theory perceives the interactions between the groups in pluralistic way, where the corporations are shaped by social and environment in which they operate in pursuing their own self-interest (Gray et al, 1996).

Under bourgeois political economy framework, there are two sub-theories that are considered in the analysis: stakeholder and legitimacy theory. Gray et al (1995a) argue that both theories (that are set within a framework of political economy assumptions) are overlapping and thus may offer different levels of explanation rather than competing ones. Stakeholder theory focuses on the economic motivations whereas legitimacy theory focuses primarily on the social motivations of the corporation in disclosing information (Gray et al, 1995a).

Stakeholder theory identifies the key stakeholders from the entity's point of view. It analyses the extent of the entity-stakeholders relationship which has to be maintained for achieving the interest of the entity (Gray, Dey, Owen, Evans and Zadek, 1997). Stakeholders of an entity are considered as any party (group or individual) that can

influence or is influenced by the entity's activities in achieving its objectives (Roberts, 1992; Henderson, Peirson and Harris, 2004).

Legitimacy theory focuses on societal recognition of the adequacy of corporate social behaviour (Nasi, Nasi, Philips and Zyglidopoulos, 1997). It means that the society judge entities based on the image they create for themselves. According to legitimacy theory, the only way for entities to survive is "if the society in which they are based perceive the organization to be operating to a value system which is commensurate with the society" (Gray et al 1996, p. 46). Thus, entities can establish their legitimacy by matching the corporations' performance with public's expectations or perceptions (Henderson et al, 2004). When there is a gap between societal expectations and society's perception of entity's social behavior, then, legitimacy problems occur (Nasi et al, 1997).

In line with previous studies (see for example Brown, Tower and Taplin, 2004; Brown, 2005), it is argued that corporate specific factors help in explaining entities' disclosure practices. Past studies on corporate governance-disclosure relationship (see for example Haniffa and Cooke, 2002; Eng and Mak, 2003) also suggest that corporate governance characteristics, such as ownership structure and board composition, influence the voluntary disclosure made by entities. These can be sub-categorised into six independent variables (size, economic performance, industry type, managerial ownership, block-holder ownership and board composition). The dependent variable is the extent of natural environmental disclosures (NED).

The advocates of stakeholder theory argue that larger companies tend to disclose more information in order to raise capital in financial market. Moreover, larger corporations are also viewed as important economic entities; therefore, they have greater responsibility to provide information to customers, suppliers, analysts and government (Cooke, 1991). Legitimacy theory states that larger companies are more open to public scrutiny than the smaller ones; therefore, they receive greater pressure to disclose more information to gain public supports for their continuing existence (Guthrie and Parker, 1989). Previous studies suggest a positive relationship between size of entity and the level of environmental disclosure (Hackston and Milne, 1996; Choi, 1999; Williams, 1999; Cormier and Gordon, 2001; Cormier and Magnan, 2003). As a result, size of company is perceived as a strong indicator for the level of environmental disclosure (Lodhia, 2004). Therefore, this study poses the following hypothesis:

H1: *There is a positive association between the size of company and the extent of natural environmental disclosure in annual reports.*

Stakeholder theory argues that a company's decision to disclose information is affected by its economic performance. Higher profitability motivates the management to disclose greater information since it increases investors' loyalty to the corporation that eventually increases management's compensation (Singhvi and Desai, 1971). Conversely, entities with poor economic performance are less likely to have financial ability to disclose more information (Ullman, 1985; Meek, Roberts and Gray, 1995). Legitimacy theory suggests higher profitability increases entity visibility (Zmijewski and Hagerman, 1981); consequently, the entities receive greater demand from the society to disclose more information to obtain approval for their continuing activities.

Past studies results are mixed. Some studies support a positive association between corporate profitability and the level of disclosure (Singhvi and Desai, 1971; Roberts, 1992) whereas others found no significant correlation (Patten, 1991; Hackston and Milne, 1996; Williams, 1999). This study proposes the following hypothesis:

H2: *There is a positive association between the economic performance of an entity and the extent of natural environmental disclosure in annual reports.*

Type of industry influences political visibility and drives disclosure in order to minimize pressure and criticism from society (Patten, 1991). Legitimacy theory indicates certain industries gain more social scrutiny, government regulation and more social responsibility (Ness and Mirza, 1991). Past research findings are mixed. Some studies indicate a significant relationship between the type of industry and the volume of voluntary disclosure (Ness and Mirza, 1991; Deegan and Gordon, 1996; Hackston and Milne, 1996, Choi, 1999; Williams, 1999; Brown et al, 2004). Consequently, type of industry is also perceived as a strong predictor for the level of environmental disclosure (Lodhia, 2004). However, Gray et al (1995b) and Brown (2005) found insignificant relationship between type of industry and the level of corporate disclosure. Therefore, it is hypothesized that:

H3: *There is an association between type of industry and the extent of natural environmental disclosure in annual reports.*

Three more hypotheses are derived based on the composition of ownership structures for Indonesian companies. Ownership structure² arguably determines the level of

² Corporations with diffuse (less concentrated) share ownership tend to disclose greater information due to the owners' attention to monitor the management's behavior for acting at their best interest (Craswell and Taylor, 1992; McKinnon and Dalimunthe; 1993; Hossain, Tan and Adams, 1994). Kusumo (1999) points out that from the stakeholder theory's point of view, a less concentrated share-ownership corporation would disclose more information to provide information needed by various

monitoring and consequently the level of disclosure (Eng and Mak, 2003). Diffusion and type of equity owners have also been noted as essential determinants in clarifying the variability of disclosure practices (Haniffa and Cooke, 2002).

Intuitively, less concentrated managerial ownership³ encourages the management to disclose more relevant information to the various stakeholders. Past empirical studies (Ruland, Tung and George, 1990; Eng and Mak, 2003) shows a negative association between managerial ownership and the level of information disclosed. Lower managerial ownership triggers greater information disclosed in annual reports. For that reason, it is hypothesized that:

H4: *There is a negative association between the managerial ownership and the extent of natural environmental disclosure in annual reports.*

It can be argued that less concentrated block-holder (institutional investors) may also encourage the corporation to disclose greater information to serve various stakeholders. Past studies indicate a negative association between block-holder ownership and disclosure (McKinnon and Dalimunthe, 1993; Schadewitz and Blevins, 1998) while Eng and Mak (2003) found that block-holder ownership was not

shareholders. Similar arguments are drawn for legitimacy theory. Outstanding shares of more diffused companies might be owned by the government, individual or groups who are strongly concerned with environmental issues. This arguably leads the entities to disclose more environmental information as they become more visible to the public scrutiny. According to Eng and Mak (2003), ownership structure can be assessed by managerial ownership and block-holder ownership. Managerial ownership and block-holder ownership are considered as two key governance mechanisms in controlling agency problems (Eng and Mak, 2003).

³ Managerial ownership is defined as “the percentage of ordinary shares held by the CEO and executive directors” (Eng and Mak 2003, p. 330). Block-holder ownership is defined as “the percentage of ordinary shares held by substantial shareholders” (Eng and Mak 2003, p. 330). Board composition is defined as “the proportion of outside directors²⁸ to the number of directors on the board” (Eng and Mak 2003, p. 331).

associated with the voluntary disclosure. Accordingly, this study proposes the following hypothesis:

H5: There is a negative association between the block-holder ownership and the extent of natural environmental disclosure in annual reports.

The board of directors is perceived as an essential component of good corporate governance (Mallin, 2004). Non-executive directors who generally are more independent to the management may have more power to encourage the management to disclose more voluntary information such as environmental information to the stakeholders. Consequently, the dominant number of independent directors in the board arguably results in greater voluntary disclosures (Haniffa and Cooke, 2002; Eng and Mak, 2003). From the point of view of legitimacy theory, the presence of independent directors in the board composition may strengthen the public perception of corporate legitimacy. The public may value an entity highly if it has a balance or many independent directors on the board because such a condition might signify a more effective board in supervising the management activities. Past studies suggest inconsistent findings on the relationship between board composition and the extent of disclosure. Some studies found a negative relationship (Haniffa and Cooke, 2002; Eng and Mak, 2003) with other found a positive association (Chen and Jaggi, 2000). However, since corporate governance literature signals a positive association between the presences of independent directors on the board and the extent of disclosure, this study hypothesizes that:

H6: *There is a positive association between the board composition and the extent of natural environmental disclosure in annual reports.*

Overall, these six hypotheses are tested as possible predictors for natural environmental disclosures by Indonesian companies.

SECTION THREE RESEARCH METHODOLOGY

A sample of 100 publicly listed entities was chosen out the population of 347 companies of the Jakarta Stock Exchange (JSX) for the year ending 2003 (Fact Book, 2004). Stratified random sampling was adopted to achieve sufficient sample size for each group (high and low profile industries) to make a valid statistical comparison between groups (Cooke, 1989).

This study utilizes a disclosure indices technique to measure quantitative NED.. The main advantage of utilizing disclosure indices is that the measurement allows the researcher to adjust disclosures that are not responsive to other more direct measure (Marston and Shrives, 1991). It means that disclosure indices avoid penalizing companies for non-disclosure of items when it is not relevant for them (Cooke, 1991; 1992). This measurement technique is more suitable for developing countries that generally have poor quality and quantity of environmental information disclosed in annual reports.

This study adapts a checklist developed by Brown et al (2004) and Brown (2005). The checklist considers simplified NED index to observe disclosure/nondisclosure of environmental information by selecting eight categories of NED, namely *General Environment Conditions*, *Environmental Policy*, *Environmental Audit*, *Environmental-Product and Process Related*, *Environmentally Financial Related Data*, *Sustainability*, *Environmental Aesthetics*, and *Environmental Other*. This

simplified NED index is argued to be more appropriate for an emerging region due to different reporting practices of developed and developing nations (Brown, 2005).

In measuring corporations' quantitative NED practices, this study counts up and treats the eight NED elements without differential weights. The unweighted approach arguably reduces subjectivity in assigning weights on each NED elements. This study utilizes ANOVA and multiple regression to test hypotheses on possible predictors of natural environmental disclosures (NED).

SECTION FOUR DESCRIPTIVE ANALYSIS

The results of the descriptive statistics are shown in Table 1. The range of company size of company, as measured by market capitalization, is wide ranging from less than four billion Rupiahs to over twenty thousand billion Rupiahs, with a mean market value of almost 1,500 billion Rupiahs.

Table 1: Descriptive Characteristics of Continuous Variables

Continuous Variables	Minimum	Maximum	Mean	Standard Deviation
Size of Company (in Million Rupiahs)	3,696	20,188,859	1,495,308	3,939,732.5
Economic Performance (ROA)	-0.49	0.45	0.02	0.09
Block-holder Ownership Structure	0.13	0.97	0.65	0.18
Board Composition	0.00	0.75	0.30	0.18

In terms of economic performance 17% of companies in the sample had negative return on assets (ROA). The very low mean of ROA (2%) show that many entities have not fully recovered from the tremendous effects of economic crisis that hit the country in mid 1997. As a comparison, economic performance of Indonesian listed entities before the economic crisis in 1996 was 8% (Kusumo, 1998). The striking feature of the sample is a high level of block-holder ownership structure (65%). A similar finding is documented by Kusumo (1998) and the tendency of heavy ownership concentration is widely found in developing world settings (La Porta, Lopez-de-Silanes and Shleifer, 1999). Only 17% of the companies have less than 50% of ownership concentration. Indonesian economic conditions might preclude more individual shareholders owning the companies. Raheja (2005) suggests that the ideal composition of independent directors on the boards should be equal or more than 50%. However, less than 20% of the sample has 50% or more independent directors on the board. Conversely, more than 30% of the sample has less than 30% of independent director on the board. This suggests weak listing rules' enforcement by BAPEPAM as the securities supervisory agency. Moreover, 20% (twenty entities) of the sample has zero independent directors on the board.

Descriptive analysis of 100 listed entities indicates that only 37 companies disclosed natural environmental information in their annual reports. Table 2 provides information on the minimum, maximum, mean and standard deviation of NED from the sample of all 100 entities and the 37 NED disclosing entities.

Table 2: Quantitative NED by Sample

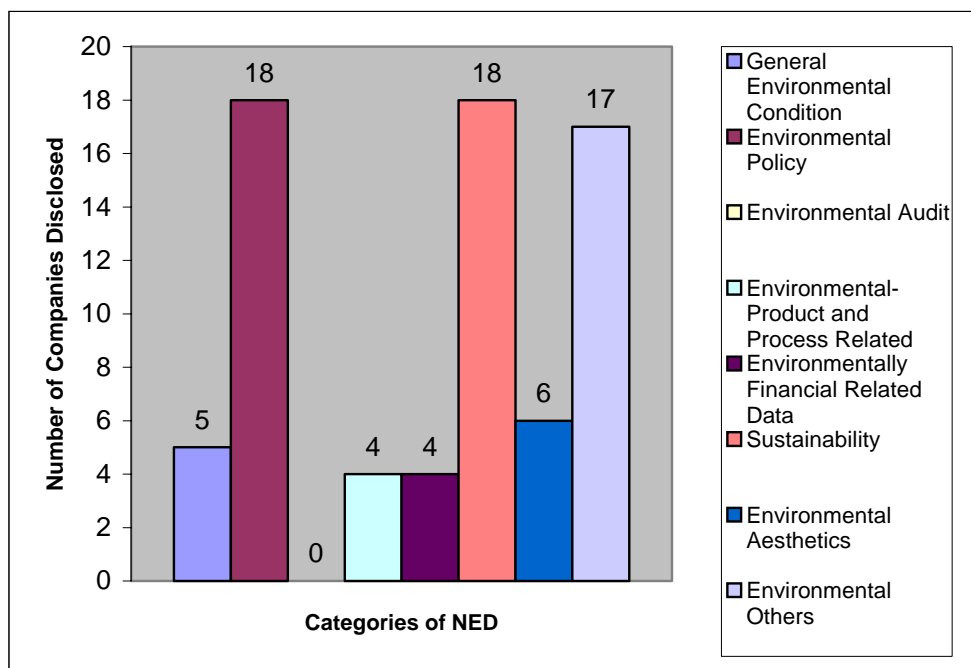
Sample	Minimum	Maximum	Mean	Standard Deviation
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NED practices of all 100 entities	0	0.75	0.09	0.16
NED practices of 37 disclosing entities	0.125	0.75	0.24	0.18

Table 2 suggests that NED practices of Indonesian listed entities are very low (9%). The lowest NED disclosure made by the 37 disclosed entities was 12.5% while the highest score was 75% with a mean NED of 24%. Closer analysis of the 37 disclosing companies reveals that the majority of disclosing entities only disclosed one category from the possible eight categories of NED. Only six entities disclosed half or more than the possible eight categories of NED.

Figure 1 shows that *Environmental Policy* and *Sustainability* were the most disclosed categories with 18% of companies making these disclosures in their annual reports. Entities disclosed (17%) on *Environmental Others* that covers environmental issues such as environmental protection, environmental education and awards received that are not captured by the other seven categories. The other three categories namely *General Environmental Conditions*, *Environmental Product and Process* related, *Environmentally Financial* related data and *Environmental Aesthetics* were almost equally disclosed with only 5% of the companies disclosing such categories. Interestingly, none of the sample companies disclosed *Environmental Audits* although these are highly recommended by the Government especially for industries that potentially damage the environmental.

Figure 1: Natural Environmental Disclosures (NED) by Category



SECTION FIVE INFERENTIAL STATISTICS

One-Way ANOVA tests were constructed to evaluate whether any statistical differences on the means of the quantity of NED practices and NED categories across the categorical variables, namely type of industry and managerial ownership structure. The ANOVA results are summarized in Table 3.

Table 3: ANOVA Results of Overall NED and Specific NED Categories³⁹

	Type of Industry (Sig.)	Managerial Ownership Structure (Sig.)
Overall NED	0.000*	0.837
NED Categories		
▪ General Environmental Condition	0.172	0.191

³⁹ *Environmental Audit* was excluded from the analysis due to none of the entities disclosed such issue.

▪ Environmental Policy	0.000*	0.562
▪ Environmental Product and Process Related	0.042**	0.732
▪ Environmentally Financial Related Data	0.042**	0.069***
▪ Environmental Sustainability	0.121	0.607
▪ Environmental Aesthetics	0.011**	0.385
▪ Environmental Others	0.000*	0.733

*Significant at 1% level; **Significant at 5% level; ***Significant at 10% level

As indicated in Table 3, there was a highly significant difference for the mean of NED practices between high and low profile industries. Further analysis reveals that significant differences between those types of industry also existed across the mean of all NED's categories except for *General Environmental Condition* and *Environmental Sustainability* categories. Interestingly, managerial ownership structure was not a predictor of overall NED.

Table 4 presents the results of multiple regression⁴ by incorporating firm specific characteristics variables (size of company, economic performance and type of industry) and corporate governance variables (managerial ownership structure, blockholder ownership structure and board composition) as possible explanatory factors⁵ of

⁴ The results of correlation matrix (not shown for brevity) of all continuous variables suggest that multicollinearity is not a problem in this study as the highest correlation is between size of company and block-holder ownership structure that is 0.116.

⁵ Logistic regression is conducted to assess the relationship between the independent variables (firm specific factors and corporate governance characteristics) and the three most disclosed NED categories in the Indonesian annual reports. This further analysis reveals that size of company appears to be statistically significant to all of the three most disclosed NED categories. Type of industry is also highly significant to *Environmental Policy* and *Environmental Others* while economic performance does not appear to be statistically significant for all of those categories. Again, none of the corporate governance variables are significant for the three most disclosed NED categories, except for board composition that is moderately significant for *Environmental Other*.

NED practices. Table 4 shows that the regression model is highly significant and has an over 21% of predictive power (Adjusted R-square). Two firm specific variables, namely size of company and type of industry, are found to be statistically significant at 1% level of confidence. Economic performance is not an explanatory variable for NED practices of Indonesian listed entities. Surprisingly, none of the corporate governance variables are found to be predictors in explaining the variation of NED practices of publicly listed entities in Indonesia.

Table 4: Multiple Regression Results for Tests of Hypotheses

Variables	NED Complete Regression (Sig.)
Overall Model Significance	0.000*
R-Square	0.264
Adjusted R-Square	0.216
Size of Company	0.001*
Economic Performance	0.519
Type of Industry	0.000*
Managerial Ownership Structure	0.712
Block-holder Ownership Structure	0.553
Board Composition	0.839

*Significant at 1% level

SECTION SIX IMPLICATIONS AND CONCLUSION

In summary, there is a very low level of NED practices of Indonesian listed entities and relatively small number of the entities that made NED signals that environmental issues were not regarded as a main consideration and important enough to be extensively disclosed in their annual reports.

The two variables of firm specific characteristics (i.e. size of company and type of industry) were significant predictors of the level of NED practices, while economic performance of an entity did not appear to be statistically significant variable in explaining the variability of NED practices of Indonesian listed entities. Intriguingly, none of the proposed corporate governance variables (i.e. board composition, managerial and block-holder ownership structures) had predictive power in explaining the variability of NED practices in Indonesia.

Size of company was a determinant of NED. One possible reason is larger entities receive greater scrutiny and pressures from the public particularly from independent environmental organizations such as Indonesian Forum for Environment (WALHI). As the larger environment organization in Indonesia (Aiken, 2004), WALHI openly criticizes the larger companies (e.g. resource and manufacture companies) for their operations which potentially, or already damage, the natural environment. Additionally, the tendency for larger entities to voluntarily disclosed more environmental information could stem from their intrinsic interest in winning over the public's perceptions in order to raise capital in financial market. The financial market of JSX is newly emerging and increasingly more globalize. Larger entities, therefore, may disclose more NED in order to impress both domestic and international stakeholders, particularly potential investors seeking relatively environmentally risk-free investments.

This study found insignificant relationship between the economic performance and the level of NED practices. This finding is consistent with a number of NED past studies such as Hackston and Milne (1996), Kusumo (1998), Choi (1999) and

Williams (1999). One possible explanation could be entities, regardless of their profit or loss situation, entities devote their efforts to generate other information that can be used to justify their current financial circumstances. For example, a considerable number of Indonesian listed entities (more than 75%) disclosed the effects of economic crisis on their businesses that impeded them to generate significant profits, to grow faster and to deliver higher value to the shareholders. In other words, it would appear entities concentrate more on explaining their financial results rather than on their environmental records.

Similar to size of company, type of industry was found to be a strong predictor for the level of NED. Entities in high profile industry disclosed more environmental information than entities in lower profile industry. This finding is consistent with Hackston and Milne (1996) and Choi (1999) who used similar measurement of industry type. One possible reason is that high profile industry entities (mining and forestry entities) receive greater scrutiny from government regulations and receive greater pressures from the public to fulfil certain environment expectations. Such pressures, arguably, encourage entities in higher profile industries to voluntarily more disclose environmental information than that provided by entities belonging to lower profile industries in order to minimize such tensions and gain public and government approval for continuing their activities. This is consistent with the tenets of two strands of political economy theory, stakeholder and legitimacy theories, which suggest social, political and economic pressures may come to bear on key entities. For instance, specific accounting recommendations directed towards “sensitive” industries such as forestry (PSAK No. 32) and mining (PSAK No. 33) may prompt high profile entities operate more environmentally consciously and thus disclose more

environmental information than other entities. In addition, public attention, particularly from environment lobby groups (e.g. WALHI) may contribute to the entities in the high profile industries to disclose more environment information in their annual reports.

Past studies have found a significant negative relationship between managerial ownership structure and the level on voluntary disclosure (e.g. Ruland et al, 1990; Eng and Mak, 2003). This study did not. Managerial ownership structure's lack of prediction could stem from the inherent managerial ownership structure of Indonesian listed entities that tend to be very small in size (less than 0.3% of ordinary shares owned by the management) and only 33% of the entities that have such kind of structure. Consequently, such figures might not have enough predictive power to explain the variability of NED practices of Indonesian listed entities. In addition, such ownership structure that essentially represents corporate governance characteristics might not be considered as an important element in encouraging management to disclose environmental information in the annual reports. In other words, types of ownership structures, whether the management acts as the shareholder of its company or not, did not motivate the management in providing more voluntary information, including environmental issues, to the stakeholders.

This study further found a negative but insignificant result for the association between block-holder ownership structure and the level of NED practices. The negative relationship might represent the heavy ownership concentration (65% in average) of Indonesian listed entities. This finding was consistent with Eng and Mak's (2003) study that found no association between those two variables. Such finding might

signal insignificant roles of block-holder institutions or individual owners in directing and dictating the entities to disclose more environmental information to the public. Another possible reason could be that Indonesian owners in general do not consider environmental matters as critical issues that have to be extensively disclosed in the annual reports.

Past studies suggest the presence of independent directors on the board of directors encourages the management to provide more voluntary information to the stakeholders. More dominant independent directors in term of number on the board arguably result in greater voluntary disclosures (Haniffa and Cooke, 2002; Eng and Mak, 2003). However, this study found negative insignificant result for the relationship between board composition and the level of NED. This finding is consistent with Haniffa and Cooke (2002) and Eng and Mak (2003). The possible reason for this finding could stem from the traditional less activist supervisory role of the Indonesian board of directors that is said to have less power than in the Anglo-American system (ICMD, 2004). This unique characteristic of Indonesian entities' board of directors arguably makes ineffective roles of the board in directing and encouraging the management in providing more environmental information to the stakeholders. Moreover, Rosser (2003) points out serious problems with the implementation and enforcement of corporate governance reform in Indonesia. Another possible explanation for such finding could be because the board does not have enough capacity to be environmentally sensitive. As a result, such critical issues are not taken into account and extensively disclosed in the annual reports.

Overall, a low level of natural environmental disclosures is communicated by Indonesian listed companies. This study finds that the bourgeois political economy framework partially explains the variability of NED practices of Indonesian listed entities. The important discovery of size and industry type determinants adds to body of knowledge of natural environmental disclosures in this developing country region.

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