FIRM SIZE, BOARD OF DIRECTORS' QUALITY, MANAGERIAL OWNERSHIP AND LEVEL OF VOLUNTARY DISCLOSURE IN THAILAND

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Abstract

Despite intensive efforts to determine the nature of the relationship between the firm size and the level of voluntary disclosure (VDI), empirical studies of this issue have produced mixed results. This paper attempts to delve deeper into this complex phenomenon by employing a resource dependency perspective to hypothesize a model of mediation as board of directors' quality index (BOQI) is moderated by a high concentration of CEO's ownership (HCEO). The findings suggest that the larger firm size, the higher is the BOQI and this in turn will lead to the higher VDI. These relationships appear to be weaker when there is moderation as HCEO, produced by the mediation process of the BOQI, and when this process is controlled, the residual moderation of the treatment effect is reduced. Further, board size as control variable is found to have a positive significant influence on BOQI and VDI.

Keywords: Firm Size; Board of Directors; Managerial Ownership; Voluntary Disclosure; Thailand

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1. Introduction

Transparency and adequate disclosure are also important in order to ensure the protection of minority shareholders' rights. Outsiders can use relevant company's information, such as company objectives and policies, financial results, majority share holders' ownership structure and executive directors' remuneration to make decisions. The adoption of internationally accepted disclosures (sometimes voluntary in Thailand) represents free choices on the part of company managements to provide accounting and other information deemed relevant to decision needs of users of their annual reports (Meek et al., 1995). In addition, a study by Toplin et al. (2002) extended sixty annual reports from companies in Australia, Hong Kong, Malaysia, Philippines, Singapore and Thailand are analyzed to create several compliance indices based on all universally applicable IAS rules at the time. Companies in the four Asian countries with British colonial links had lower levels of non-disclosure than Philippines or Thailand entities. However, the problem of voluntary disclosure in Thailand comes from a study by the Center for International Financial Analysis & Research (CIFAR, 1995). There is a perception that the adequacy in voluntary disclosure in emerging capital market (ECMs) including Thai public listed companies was in the bottom half in terms of disclosure levels and lags behind that in developed capital markets. Companies in Asia appear to have fewer incentives for transparent disclosure than their Anglo-American counterparts (Ball et al., 2003). This is probably due to the fact that the disclosure orientation of companies in Asian countries is significantly influenced by the cultural environment in which they operate (Gray, 1988).

There are several studies which have been found that a significant association between the size of the company and the extent of disclosure in the corporate annual report in both developed and developing countries. However, the study of Wallace and Naser (1995) argued that the relationship (positive or negative) between the size of a firm and the comprehensiveness of its disclosure is unclear (Wallace et al., 1994).

The study of Alsaeed (2005) argued that large companies tend to disclose greater amount of information for a number of reasons. Firstly, they are more exposed to public scrutiny than small firms therefore they are most likely to disclose more information. Secondly, revealing more information allows the large firms to obtain new funds at lower cost (Botosan, 1997). Thirdly, large firms possess sufficient resources for collecting, analyzing, and presenting extensive amount of data at minimal cost. Finally, the agency cost is higher for large firms because shareholders are widespread therefore additional disclosure helps reduce the potential agency cost (Watts & Zimmerman, 1983). However, the argument above is not without flaws.

The disclosure orientation of companies in Thailand is also greatly influenced by the form of ownership and management structure (Limpaphayom, 2000). Thai listed companies are usually controlled by a family group whose staffs are in the senior positions and also function as the largest shareholder. Thai ownership is highly concentrated and most of the shares are owned by executive directors. As a result, managers and owners are of the same person (Wiwattanakantung, 2000).

An important mechanism in protecting shareholders is the board of directors and its fiduciary responsibilities. This is because the board of directors is supposed to monitor managers and control companies on behalf of the shareholders. The board is expected to formulate corporate policy, approve strategic plans, and, if necessary, remove management. However, the board of directors of most listed companies in Thailand is mostly controlled by the large shareholders (Limpaphayom, 2000).

The objective of this study such as: (1) To examine the relationship between firm size and the level of board of directors' quality; (2) To examine the relationship between the level of board of directors' quality and the level of voluntary disclosure; (3) To examine whether the level of board of directors' quality mediate the relationship between firm size and the level of voluntary disclosure; and (4) To examine whether CEO's ownership moderate the relationship between board of directors' quality and the level of voluntary disclosure. Under the implicit assumption of agency theory, this study hypothesized that improved board of directors' quality and CEO's ownership structure of Thai public listed companies leads to more voluntary disclosure practices, and the voluntary disclosure practices is used as a means to reduce information asymmetry and agency problems.

The rest of this paper is organized as follows. Section 2 reviews the related literature and proposes hypotheses being tested in Section 3. In Section 4, research design, discusses the sample and data design. Section 5 presents the empirical results and discussion is presented in Section 6. Finally, Section 7 draws some conclusions on the issue.

2. Theoretical background

2.1 Agency Theory, Firm Characteristics and Corporate Disclosures

There has been extensive empirical work relating firm-specific characteristics to the extent of voluntary disclosure based on a number of theoretical arguments for structure-related characteristics which include agency theory, information and political costs, proprietary costs, and capital need such as firm size (e.g., Cooke, 1989; Haniffa & Cooke, 2002; and Hossain et al., 1995). The study of Haniffa and Cooke (2002) argued that size may be important because the need to raise capital at the lowest cost (Choi, 1973), pressure from shareholders themselves and investment analyst for greater disclosure (Schipper, 1981), closer monitoring by regulatory authorities (Firth, 1979), the complexity of the business structure (Buzby, 1975), and greater demands to provide information to various user groups for entities of economic significance.

2.2 Agency Theory, Board of Directors and Corporate Disclosures

Jensen and Meckling (1976) found that the primary function of the board of directors is monitoring the actions of agents (managers) to protect the interests of the principals (owners). They have argued for a high level of corporate disclosure based upon the agency theory. Board of directors as corporate governance mechanisms are introduced to control the agency problem and ensure that managers act in the best interest of the shareholders. In theory, the impact of internal governance mechanisms on corporate disclosures may be complementary or substitutive. If it is complementary, agency theory predicts that a greater extent of disclosure is expected since the adoption of more governance mechanisms will lead to better governance practice and strengthen the internal control of companies and provide an intensive monitoring package of a firm in order to reduce opportunistic behaviors and information asymmetry (Leftwich et al., 1981).

2.3 Agency Theory, Board of Directors, Ownership Structure and Corporate Disclosure

The most recent research posits that ownership structure and/or board composition affect corporate disclosure and they argued that a high level of corporate disclosure is based upon the agency theory (e.g., Balachandran & Bliss, 2004; Chau & Gray, 2002; Chen & Jaggi, 2000; Evans, 2004; Forker, 1992; Gul & Leung, 2004; Haniffa & Cooke, 2002; Ho & Wong, 2001; Hope, 2003; Liu, 2004; Mangena & Pike, 2005; McKinnon & Dalimunthe, 1993; Mohd-Nasir & Abdullah, 2005; and Willekens et al., 2004). However, empirical studies of this issue have produced mixed results. Thus, contribution of this study is to treat ownership structure as moderator variables. This is because specific factors are often assumed to reduce or enhance the influence that specific independent variables have on specific responses in question (dependent variable). Ownership structure as percentage of shares held by CEO is variable that affect the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable. Specifically within a correlation analysis framework, a moderator is a third variable that affects the zero-order correlation between two other variables. In the more familiar analysis of variance (ANOVA) terms, a basic moderator effect can be represented as an interaction between a focal

independent variable and a factor that specifies the appropriate conditions for its operation.

2.4 Firm Size, Board of Directors, Managerial Ownership and Voluntary Disclosure

The study will use board of directors as mediation is moderated by managerial ownership help explain the relationship (positive or negative) between firm size and the level of voluntary disclosure. The study of Cooke (1989) argued that size can also be an important variable in explaining the variability in the extent of voluntary disclosure. Fama and Jensen (1983) argued that outside directors, who tend to be major decision-makers at other organizations, have incentives to signal to the labor market that they are experts in decision control by acting in shareholder interests. This discussion leads the authors to hypothesize that larger firm size is more like to have number of outside directors than smaller firm size. However, this study defined managerial ownership as the percentage of ordinary shares held by the CEO. When managerial ownership is low, there is a greater agency problem. That is, the manager has greater incentives to consume perks and reduced incentives to maximize job performance. Hence, outside shareholders will increase monitoring of manager's behavior to reduce the agency problem (Jensen & Meckling, 1976). Monitoring by outside shareholders may be reduced if managers can provide voluntary disclosure. That is, voluntary disclosure is a substitute for monitoring (Eng & Mak, 2003).

2.5 Theoretical Framework

There is moderation as a high concentration of CEO's ownership, produced by the mediating process as the level of board of directors' quality to the extent that it accounts for the relationship (positive or negative) between firm size and the level of voluntary disclosure. Further, this study will use board size as control variable. The definitions of each attribute are presented in Figure 1 and which are then discussed in the following sections.

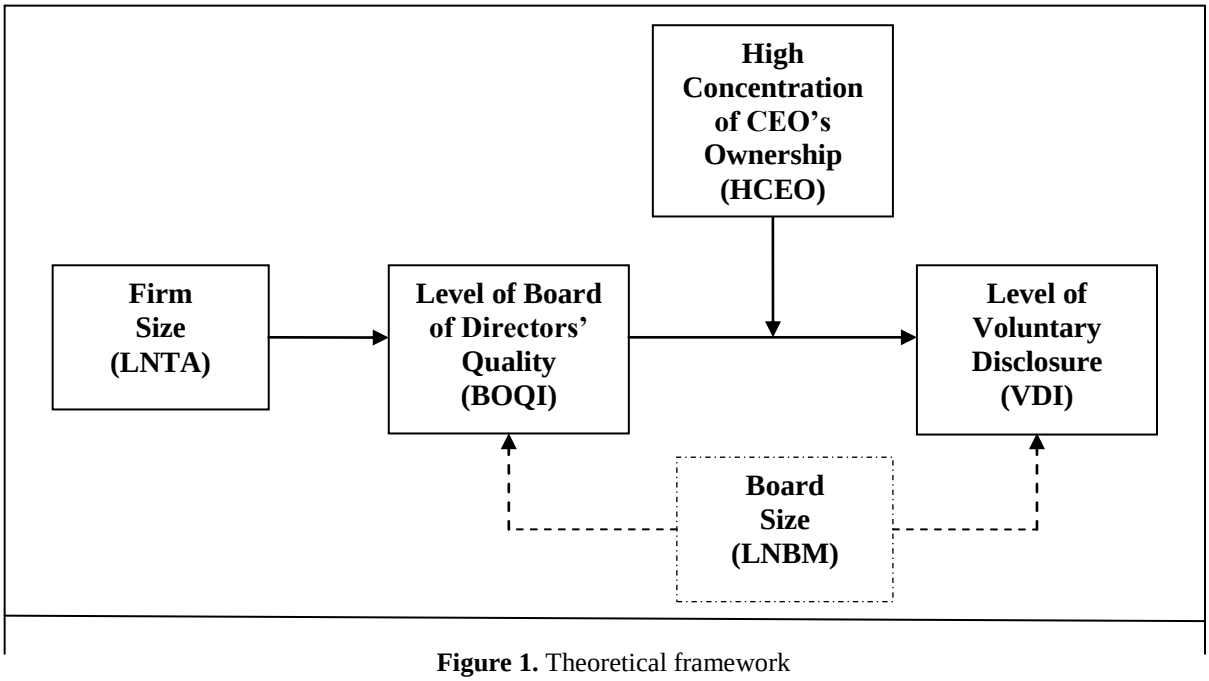

Figure 1. Theoretical framework

3. Hypotheses Development

3.1 Direct Effect of Firm Size on Board of Directors' Quality

The study expect firm size to be related to board of directors' quality as discussed in John and Senbet (1998), the effectiveness of a board in monitoring management is determined by its composition, independence and size. The Code of Best Practice for directors of listed companies of SET (SET, 1999b) defines that the board of directors should consist of firstly, executive directors who are involved in day-to-day operations or who are authorized directors; secondly, non-executive directors who are independent directors defined as directors who do not hold any position in the management and are not employees of the company. They must be independent of any major shareholders, management, and any other related persons and they must have the responsibility to determine if there is anything that may effect the equitable treatment of shareholders. They are also responsible for considering any transactions that may lead to a conflict of interest between a listed company and related persons; and thirdly, outside directors are defined as directors who do not hold any position in the management and/or are not

employees of the company. They must not represent any major shareholders but they may represent stakeholders, such as customers, suppliers, or creditors, etc. Generally, large companies tend to be multi-product business entities; operating over wider geographical areas with several divisional units. Consequently, central managements of such companies will require outside directors' expert who will enable them to make operational and strategic decisions concerning the divisions, and to ensure that the divisions are performing adequately in pursuit of overall corporate objectives (Owusu-Ansah, 1998).

The notion of composition and independence are closely related as board independence increases as the proportion of independent outside directors increases. Fama (1980) and Fama and Jensen (1983) suggested that boards that are composed of a higher proportion of outside directors (directors not involved in the direct operations of the firm) have greater monitoring ability over management. However, with regard to outside or non-executive directors, a distinction between those who are affiliated with management through family or business relations (grey directors) and those who are truly independent (no relationship with management) is necessary. Although there is no existing theory pertaining to the role of grey directors on the monitoring effectiveness of the board, Carcello and Neal (2000) found a negative relationship between the percentage of executive and grey directors members on the audit committee and the likelihood of receiving a qualified opinion. This result supports the intuition that the board's monitoring effectiveness should increase (decrease) with the proportion of independent (grey) outside directors.

Thus, this study defined quality of board of directors involves the appointment of independent non-executive directors (INDs). In the 1980s, inclusion of INDs on corporate boards started to receive increasing attention (e.g., Fama, 1980; and Williamson, 1985). Two main arguments have been advanced in support of INDs. First, INDs provide advice to corporate boards on strategic decisions, which may improve the firm's economic and financial performance (Fama, 1980). Several studies (e.g., Baysinger & Hoskisson, 1990; Brickley & James, 1987; Byrd & Hickman, 1992; and Rosenstein & Wyatt, 1990) empirically tested the association between INDs and economic and financial performance of firms, but found mixed evidence. Grace et al. (1995) provide a brief review of prior studies on the association between INDs and corporate economic and financial performance.

Company size can be measured by structural characteristic variables (total assets). A number of studies used assets as a measure of size (e.g., Ahmed & Nicholls, 1994; Cooke, 1993; Lang & Lundholm, 1993; Malone et al., 1993; Naser, 1998; and Wallace et al., 1994). Further, the level of board of directors' quality can be identified the quality of board of directors to comprise the following discussion section 3.2. This discussion leads the authors of this paper to hypothesize that:

H_1: There is a positive relationship between firm size and the level of board of directors' quality of companies listed on the SET.

3.2 Direct Effect of Board of Directors' Quality on Voluntary Disclosure

The relationship between the quality of board of directors and the level of voluntary disclosure of companies has been examined in previous research. Based on previous studies, this study identified the quality of board of directors to comprise the following:

3.2.1 Board's Leadership Structure

Studies by Balachandran and Bliss (2004), Gul and Leung (2004), and Williams (2002) have found that CEO duality could negatively affect the level of voluntary disclosure. This discussion leads the authors of this paper to hypothesize that if the titles and authority of the board's chairman and head of management team are clearly separated, it could positively affect the level of voluntary disclosure.

3.2.2 Board's Composition

The higher the proportion of independent non-executive directors, the higher is the quality of the information disclosed (Forker, 1992). Willekens et al. (2004) found that board's independence could positively affect the level of voluntary disclosure. This discussion leads the authors of this paper to hypothesize that if more than 50% of the directors on the board are INDs, they could positively affect the level of voluntary disclosure. This is supported by studies by Balachandran and Bliss (2004), Mohd-Nasir and Abdullah (2005), and Williams (2002).

3.2.3 Board of Directors' Meetings

With regards to the frequency of board meetings, Vafeas (1999) found that the annual number of board meetings (more than 11 times) is inversely related to firm value. This suggests that board activity, measured by board meeting frequency, is an important dimension of board operations. Lipton and Lorsch (1992) found that the most widely shared problem that the directors face is the lack of time to carry out their duties, and that (Conger et al., 1998) the amount of time spent in a board meeting is an important means to improve the effectiveness of a board. However, empirical studies on the frequency of board meetings have produced mixed results. Thus attendance at board meeting is only one indicator of a director's contribution to the company and does not show whether a director actually contributes actively to board discussions (S&P & CGFRC, 2004). This discussion leads the authors of this paper to hypothesize that if all directors were to attend every board meeting, this

would positively influence the level of voluntary disclosure.

3.2.4 Board's Controlling System and Internal Audit

With regards to the board's controlling system and internal audit, Rezaee (2003) found that the internal audit function is the first line of defense against fraud. Internal audit now focuses on a broad range of activities and is becoming an integral part of corporate governance. Willekens et al. (2004) found that internal audit department could positively affect the level of voluntary disclosure. This discussion leads the authors of this paper to hypothesize that the existence of internal audit department is in company could positively affect the level of voluntary disclosure.

3.2.5 Audit Committee's (AC's) Leadership Structure

With regards to the audit committee's leadership structure, Studies by Berg and Smith (1978), Donaldson and Davis (1991), and Rechner and Dalton (1991) found that independent non-executive chairpersons assist in improving the company's performance. They predicted that there is a positive association between a non-executive chairperson and the extent of voluntary disclosure of information. In contrast, they found that the chairperson as non-executive director is negatively associated with the extent of voluntary disclosure and has the highest regression coefficient. The findings suggested that a non-executive chairperson, as agent, obtains greater utility by keeping private information secret. However, Liu (2004) provided evidence that audit committees comprised of independent enhance disclosure quality. This discussion leads the authors of this paper to hypothesize that if the chairman of AC is an independent non-executive director, he could positively affect the level of voluntary disclosure.

3.2.6 AC's Composition

With respect to the audit committee's composition, Klein (2002) suggested that the independence of AC may be affected by the independence of the board in general. Pincus et al. (1989) found a positive association between the establishment of ACs and the percentage of outside directors on the board. Balachandran and Bliss (2004), Ho and Wong (2001), and Liu (2004) found that members of AC who are INDs, could positively affect the level of voluntary disclosure. This discussion leads the authors of this paper to hypothesize that if at least three members of AC are INDs, they could positively affect the level of voluntary disclosure.

3.2.7 AC's Meetings

McMullen and Raghunandan (1996) found that companies with reporting problems had less frequent audit committee meetings. Scarbrough et al. (1998) surveyed chief internal auditors (CIA) and found a positive association between AC's independence and the frequencies of meetings with internal auditors (IAs) as well as review of IA's work. Abbott and Parker (2000) studied auditor selection for 500 companies and found that firms with audit committees that met at least twice per year were more likely to use specialist auditors. Nevertheless, Liu (2004) found that AC's meeting frequency positively affect the level of voluntary disclosure. This discussion leads the authors of this paper to hypothesize that if all AC members were to attend every AC meetings, it could positively affect the level of voluntary disclosure.

3.2.8 AC's Knowledge and Expertise

AC's knowledge and expertise will improve AC's effectiveness as they would be able to probe management with the right questions and assist auditors in their investigations (Levitt, 2000). Felo et al. (2003) found that the quality of financial reporting was positively related to the existence of financial expertise in the audit committee. Mangena and Pike (2005) found that there exist a significant positive association between the quality of interim financial reporting and the presence of financial expertise on the AC. This discussion leads the authors of this paper to hypothesize that if at least one AC member has a financial or an accounting background, he could positively affect the level of voluntary disclosure of the company.

3.2.9 Remuneration Committee (RC)'s Leadership Structure

Haniffa and Cooke (2002) argued that the position of the chairperson is also thought to be important in improving the effectiveness of the board. Studies by Berg and Smith (1978), Donaldson and Davis (1991), and Rechner and Dalton (1991) found that independent non-executive chairpersons do help to improve the company's performance. They predicted that there is a positive association between a non-executive chairperson and the extent of voluntary disclosure of information. This discussion leads the authors of this paper to hypothesize that if the chairman of RC is an IND, he could positively affect the level of voluntary disclosure.

3.2.10 RC's Composition

RC is one of the most important recommendations of the Cadbury Committee (Cadbury Committee Report, 1992). The RC would be able to assist in enhancing accountability through appropriate information disclosure, and, hence, instill greater confidence in the company's corporate governance system. Remuneration committees were recommended to include only non-executive directors, as there is a clear conflict of interest when executive directors participate in their own compensation decisions (Diacon and O'Sullivan, 1996). Vafeas and Afxentiou (1998) examined changes in the composition of remuneration committees following the adoption of SEC compensation disclosure rule 33-6962 (US SEC, 1992 as cited in Vafeas and Theodorou, 1998). They found that firms remove a significant

number of corporate executives from remuneration committees following the rule, and replace them with non-executives holding a relatively high number of outside directorships. This discussion leads the authors of this paper to hypothesize that if more than half of the RC members are non-executive directors, they could positively affect the level of voluntary disclosure.

This study assigns a score of 1 for compliance and 0 for non-compliance and is scaled by the total number of items (i.e., 10 scores). Higher scores indicate stronger board of directors' quality and predict a positive coefficient on level of voluntary disclosure. It is hypothesized that:

H_2: There is a positive relationship between the level of board of directors' quality and the level of voluntary disclosure of companies listed on the SET.

3.3 Mediation between Firm Size and Voluntary Disclosure

Kistruck (2006) argued that the reason for the lack of consistency within results of studies examining the impact of the board on financial performance is that there are other factors which mediate the relationship which are seldom included within the theoretical models (Wiseman & Gomez-Mejia, 1998). Therefore, it is expected that the relationship is in fact more of an indirect than direct nature (Daily et al., 2003). Thus, the firm size has been hypothesized to have an indirect effect on voluntary disclosure by the board.

Because large companies tend to be multi-product business entities; operating over wider geographical areas with several divisional units. Thus, central managements of such companies will require outside directors' expert (Owusu-Ansah, 1998). Hence, outside shareholders will increase monitoring of manager's behavior to reduce the agency problem (Jensen & Meckling, 1976). Monitoring by outside shareholders may be reduced if managers can provide voluntary disclosure. Therefore, rather than simple mediation, it is expected that one mediated relation between firm size and voluntary disclosure. This mediating model is outlined more clearly in figure 1. This discussion leads the authors of this paper to hypothesize that:

H_3: The relationship between firm size and level of voluntary disclosure of companies listed on the SET will be mediated by the level of board of directors' quality.

3.4 Moderating Effect of CEO's Ownership on the Relationship between Board of Directors' Quality and Voluntary Disclosure

This study would like to examine the effect of ownership structure on the relationship of board's quality to voluntary disclosure. Ownership structure is measured by managerial ownership is the percentage of ordinary shares held by a CEO and includes their deemed interests (McClelland & Barker III, 2004). When managerial ownership is low, there is a greater agency problem. That is, the manager has greater incentives to consume perks and reduced incentives to maximize job performance. Hence, outside shareholders will increase monitoring of manager's behavior to reduce the agency problem (Jensen & Meckling, 1976). Monitoring by outside shareholders increases costs of the firm. However, monitoring by outside shareholders may be reduced if managers can provide voluntary disclosure. That is, voluntary disclosure is a substitute for monitoring.

Bathala and Rao (1995) found a negative relationship between board ownership and the proportion of outside directors on the board. Beatty and Zajac (1994) found that companies with a lower level of board's ownership are associated with a higher level of firm monitoring. Higher level of monitoring is represented by a larger percentage of outside directors or separate CEO and board chairman positions. Thus, an increase in board ownership will result in less monitoring, i.e., a lower proportion of outside directors and a more unitary leadership structure.

The study of Whidbee (1997) as sited in SET (2001a) argued that the relation between determinants of the board composition in the US. He found that board composition reflects the ownership structure of the firm. In particular, he found that managers with high equity stakes use their voting rights to exclude outside director from the board membership.

There are countervailing incentives for managers to reduce the quality of accounting information. The voting rights included in equity ownership make managers less subject to career concerns, the discipline of the product market, monitoring by outside shareholders, and value-enhancing takeovers (Gompers et al., 2003 as cited in Brown & Caylor, 2006).

Thai ownership is highly concentrated and most of the shares are owned by executive directors. As a result, managers and owners are of the same person (Wiwattanakantang, 2000). Therefore, disclosure will be greater for companies with diffuse ownership because it helps owners to monitor the behavior of the management as predicted by agency theory (e.g., Craswell & Taylor, 1992; Haniffa & Cooke, 2002; Hossain et al., 1994; Leftwich et al., 1981; McKinnon & Dalimunthe, 1993; Naser, 1998; and Raffounier, 1995). This discussion leads the authors of this paper to hypothesize that:

H_4: A high concentration of CEO's ownership will negatively moderate the relationship between the level of board of directors' quality and the level

of voluntary disclosure of companies listed on the SET.

3.5 Mediated Moderation between Firm Size and Voluntary Disclosure

From discussion above under hypothesis development section, firm size has been hypothesized to have an indirect effect on voluntary disclosure by moderation as a high concentration of CEO controlling ownership, produced by the mediating process of board of directors' quality index (BOQI).

Thus, mediated moderation model is outlined more clearly in figure 1. This discussion leads the authors of this paper to hypothesize that:

H_5: The relationship between firm size and level of voluntary disclosure of companies listed on the SET will be mediated by the level of board of directors' quality, as moderated by a high concentration of CEO controlling ownership.

3.6 Board Size as Control Variable

There has been extensive empirical work relating firm size, board composition, independence and size, and managerial ownership to the extent of voluntary disclosure based on agency theory (e.g., Balachandran & Bliss, 2004; Enk & Mak (2003); Evans (2004); Gul & Leung, 2004; Ho & Wong, 2001; and Willekens et al., 2004). Thus, this study will use board size as control variables. Board size is defined as size of board of directors which measured by natural logarithm of board size. The study prefers the natural logarithm to control for non-linearity in the relationship between of board size and other variable (e.g., Willekens et al., 2004). Mintzberg (1983) stated larger boards also increase the opportunity for manipulation by corporate management.

Similarly, Jensen (1993) suggested that when boards get beyond seven or eight directors they are less likely to function effectively and are easier for the CEO to control. Nevertheless, some agency theory advocated suggest larger size leads to less participation and cohesion amongst members, diminishing the ability to achieve a consensus on control decisions (e.g., Lipton & Lorsch, 1992). Evans (2004) pointed out board size can play an important role in the monitoring of management. There has been significant evidence and conjectures suggesting that smaller boards are more effective monitors than larger boards (e.g., Jensen, 1993). Although this is the dominant view in the literature, a case can also be made that firms have more individual monitors more board members are more effective than those that have less. Because it is unclear whether small or large boards are more effective monitors. This discussion leads the authors of this paper to do not predict the direction.

4. Research Design

4.1 Sample

This survey covers all non-financial companies listed on the Stock Exchange of Thailand (SET) as at 2004. Since the research involves secondary data, annual reports of the companies were obtained.

4.2 Voluntary Disclosure Checklist

Previous research has investigated the determinants of voluntary disclosure and has developed disclosure indices to assign disclosure scores. The voluntary disclosure checklist of this study is adopted from both Meek et al. (1995) and Chau and Gray (2002). The checklist by Meek et al. (1995) was based on an analysis of US, UK, and Continental Europe. Further, the checklist by Chau and Gray (2002) was based on an analysis of two important Asian markets, namely, Hong Kong and Singapore. It also provides a useful benchmark for comparison with earlier research. Meek et al. and Chau and Gray categorized the voluntary disclosure information into three types: (1) strategic, (2) non-financial, and (3) financial.

The study initially combines both the checklist of Meek et al. and Chau and Gray. Whenever an item appears in either of the study, it will be included in the study's checklist. Upon completion of this, the study ended up with a total of 115 items in its voluntary disclosure checklist. After this stage, the study then eliminated the items that were mandated by SET. The mandatory items were determined through interview with the regulators and also through examination of the regulatory requirements of Thailand, namely, the Accounting Act 2000, the Stock Exchange of Thailand (SET), the Stock Exchange Commission of Thailand (SEC), and Public Companies Act 1992. This resulted in a voluntary disclosure checklist comprising of 70 items.

To validate that the checklist did include only voluntary disclosure items, the checklist was subjected to the evaluation of a few Certified Public Accountants in Thailand. They confirmed that the 70 item checklist can be used for the purpose of the study.

4.2.1 Categories of Voluntary Disclosure

Strategic information includes general corporate information, corporate strategy, research and development, future prospects. Non-financial information includes employee information, social policy and value added information. Financial information includes segmental information, financial review, foreign currency information, and stock price information. Strategic and financial types of information have decision relevance to investors while non-financial information is directed towards a corporation's social accountability and

targeted at a wider spectrum of stakeholders than owners/investors.

Some items in the employee information, for example amount spent in training, nature of training, policy on training, categories of employees trained, and number of employees trained are directed towards the principles of good corporate governance of the SET (SET, 2001) No.15. This guideline suggested that the board of directors should ensure that the company disclose important information correctly, timely and transparency. It is also recommended that the board provide an Investor Relations Unit to represent the company in communication with institutional and individual investors, stock analysts in general and state agencies concerned. Other recommendations included that the board should provide for adequate resources to help develop knowledge and ability of company personnel in their communication and presenting information. As a result, the variables affecting voluntary disclosure choices may also vary by information type. The 70 items voluntary disclosure checklist comprise of 16 items of strategic information, 27 items of non-financial information, and 27 items of financial information.

4.2.2 Scoring the Voluntary Disclosure Items and Disclosure Index

Voluntary Disclosure Index is based on the 70 disclosure items. Scoring the voluntary disclosure items under the unweighted voluntary disclosure index was adopted from Cooke (1989). The scores for each item were than added and equally weighted to derive a final score for each company. The voluntary disclosure index (VDI_j) for each company is calculated as follows:

$$VDI_j = \frac{\sum_{i=1}^{70} d_{ij}}{MVD_j}$$

where,
MVD_j = the maximum possible number of voluntary disclosure items expected to be disclosed by a company j;
VDI_j = the voluntary disclosure index for company j;
d_{ij} = 1 if the voluntary disclosure item d_i is disclosed and
0 if the voluntary disclosure item d_i is not disclosed for company j;
MVD_j ≤ 70 (when not applicable that particular item is not included in the annual report);
So that $0 \leq VDI_j \leq 1$.

4.3 Firm Size

Firm size is defined as the natural logarithm of total assets. A number of studies used total assets as a measure of firm size (e.g. Gul and Leung, 2004; Haniffa and Cooke, 2002; Ho and Wong, 2002; and Willekens et al., 2004).

4.4 Quality of Board of Directors Index

The 10 characteristics of board of directors are used to measure the board of directors' quality index (BOQI). This study assigns a score of "1" if the characteristic is present and "0" if the characteristic is absent. The study assumes that the higher the score (or the BOQI), the higher is the quality of BOD. The measurement of each of the characteristic is as shown in Table 1.

4.5 CEO Controlling Ownership

A CEO controlling ownership is defined as the percentage of a firm's total outstanding common shares owned by CEO. Measurement used by McClelland and Barker III (2004). Controlling ownership is divided into high level and low level based on median of the sampled companies.

4.6 Control Variables

Control variables used are similar to those used by Willekens et al. (2004) such as size of board of directors which measured by natural logarithm of board size.

4.7 Source of Information

Study uses secondary data from various sources namely, annual reports (Form 56-2); report on the disclosure of additional information (Form 56-1) for the year of 2004; Fact Book of the SET (2005); and listed company information from www.setsmart.com of SET.

4.7 Data Analysis

4.7.1 To demonstrate mediation for test Hypotheses 1, 2, and 3, Model 1 estimate three different models and four conditions (must be met) was adopted from Muller et al. (2005) can be stated as follows:

$$Y = \beta_{10} + \beta_{11}X + \beta_{12}CV + \varepsilon_1 \quad (1.1)$$

$$ME = \beta_{20} + \beta_{21}X + \beta_{22}CV + \varepsilon_2 \quad (1.2)$$

$$Y = \beta_{30} + \beta_{31}X + \beta_{32}ME + \beta_{33}CV + \varepsilon_3 \quad (1.3)$$

$$\beta_{11} - \beta_{31} = \beta_{21} * \beta_{32} \quad (1.4)$$

In Equation 1.1, there must be an overall treatment (X) effect on the outcome variable (Y); that is, β_{11} is significant. In Equation 1.2, there must be a treatment effect on the mediator (ME); that is, β_{21} is significant. In Equation 1.3, there must be an effect of the mediator on the outcome controlling for the treatment; that is, β_{32} is significant. In Equation 1.3, the residual effect of the treatment variable on the outcome (β_{31}) should be smaller (in absolute value) than the overall treatment effect in Equation 1 (β_{11}). All of equations have control variable (CV). The following equality relationship exists among the parameters of these models meaning that the difference between the overall treatment effect and

the residual direct effect is equal to what is called the indirect effect via the mediator (i.e., β_{21}* β_{32}).

Table 1. Measurement of Mediator Variable

Quality of Board of Directors	Measurement of Board of directors' quality index (BOQI) and code and principle is used.	Examples of prior studies are used.
1. Quality of Board's Leadership Structure The titles and authority of the board's chairman and head of management team are clearly separated (BCEO)	Comply with No.9 of the Principles of Good Corporate Governance score 1	(e.g., Evans, 2004)
2. Quality of Board's Composition More than half of the directors on the board are INDs (BI51)	Comply with No.8 of the Principles of Good Corporate Governance score 1	(e.g., Vafeas, 1999; and Willekens et al., 2004)
3. Quality of Board's Meetings All directors to attend every board meetings (BMAL)	Comply with No.11 of the Principles of Good Corporate Governance score 1	(e.g., Evans, 2004; and Vafeas, 1999)
4. Quality of Board's Controlling System and Internal Audit Internal audit department is in company (BIAD)	Comply with No.13 of the Principles of Good Corporate Governance score 1	(e.g., Willekens et al., 2004)
5. Quality of AC's Leadership Structure The chairman of AC is an IND (ACCI)	Comply with No.12 of the Principles of Good Corporate Governance score 1	(e.g., Haniffa & Cooke, 2002)
6. Quality of AC's Composition At least three AC members are INDs (IDAC)	Comply with No. 3.1 of Best Practice Guidelines for Audit Committee score 1	(e.g., Ho & Wong, 2001; and Willekens et al., 2004)
7. Quality of AC's Meetings All AC members to attend every AC meetings (ACMA)	Comply with No.11 of the Principles of Good Corporate Governance score 1	(e.g., Evans, 2004; and Liu, 2004)
8. Quality of AC's Knowledge and Expertise At least one AC member is a financial reporting expert as CPA (ACEX)	Comply with No. 3.3 of Best Practice Guidelines for Audit Committee score 1	(e.g., Mangena & Pike, 2005)
9. Quality of RC's Leadership Structure The chairman of RC is an IND (RCCI)	Comply with No.12 of the Principles of Good Corporate Governance score 1	(e.g., Haniffa & Cooke, 2002)
10. Quality of RC's Composition More than half of the RC members are non-executive directors (RCPR)	Comply with No.12 of the Principles of Good Corporate Governance score 1	(e.g., Vafeas & Theodorou, 1998)

4.7.2 To demonstrate moderation for test Hypothesis 4, one estimate was adopted from Muller et al. (2005) can be stated as following Model 2:

$$Y = \beta_{40} + \beta_{41}ME + \beta_{42}MO + \beta_{43}MEMO + \beta_{44}CV + \varepsilon_4 \quad (2)$$

Where, *MEMO* is computed as the product of the mediator (*ME*) and the moderator (*MO*). A test of the effect of the partially product (i.e., the significance of β_{43}) is a test of the Mediator x Moderator interaction, asking whether the mediator effect varies in magnitude as a function of the value of the moderator. This equation has control variable (*CV*).

4.7.3 Model 3 estimate there are three fundamental models for test Hypothesis 5 that underlie mediated moderation and moderated mediation was adopted from Muller et al. (2005). The first of these as Equation 3.1, to assess moderation of the overall treatment effect:

$$Y = \beta_{10} + \beta_{11}X + \beta_{12}MO + \beta_{13}XMO + \beta_{14}CV + \varepsilon_1 \quad (3.1)$$

This model allows the overall treatment effect of Equation 3.1 to be moderated by *MO*. The second model allows the treatment effect on the mediator, in Equation 3.2, to be moderated:

$$ME = \beta_{20} + \beta_{21}X + \beta_{22}MO + \beta_{23}XMO + \beta_{24}CV + \varepsilon_2 \quad (3.2)$$

And the third model is a moderated version of Equation 3.3, in which both the mediator's (partial) effect on the outcome and the residual effect of the treatment on the outcome, controlling for the mediator, are allowed to be moderated:

$$Y = \beta_{30} + \beta_{31}X + \beta_{32}MO + \beta_{33}XMO + \beta_{34}ME + \beta_{35}MEMO + \beta_{36}CV + \varepsilon_3 \quad (3.3)$$

The above Equation 3.1 through 3.3 is used to establish mediated moderation. Equation 3.4 and 3.5 establishes an equality condition on the parameters from these models.

$$(\beta_{11} + \beta_{13}SD_{MO}) - (\beta_{31} + \beta_{33}SD_{MO}) = (\beta_{21} + \beta_{23}SD_{MO}) \times (\beta_{34} + \beta_{35}SD_{MO}) \quad (3.4)$$

$$B_{13} - \beta_{33} = \beta_{34}\beta_{23} + \beta_{35}\beta_{21} \quad (3.5)$$

Interpretation of the slope parameters in Equations 3.1, 3.2, and 3.3 such as: In Equation 3.1, β_{11} as overall treatment effect on *Y* at the average level of *MO*, β_{12} as moderator effect on *Y* on average across the two treatment levels, β_{13} as change in overall treatment effect on *Y* and *MO* increases, β_{14} as control variable effect on *Y*. In Equation 3.2, β_{21} as treatment effect on *ME* at the average level of *MO*, β_{22} as moderator effect on *ME* on average across the two treatment levels, β_{23} as change in treatment effect on *ME* as *MO* increases, and β_{24} as control variable effect on *ME*. In Equation 3.3, β_{31} as residual direct treatment effect on *Y* at the average level of *MO*, β_{32} as moderator effect on *Y* on average within the two treatment levels and at the average level of *ME*, β_{33} as change in residual direct treatment effect on *Y* as *MO* increases, β_{34} as mediator effect on *Y* on average within the two treatment levels and at the average level of *MO*, β_{35} as change in mediator effect on *Y* as *MO* increases, and β_{36} as control variable effect on *Y*. In Equation 3.4, the overall (moderated) treatment effect is $\beta_{11} + \beta_{13}SD_{MO}$, the (moderated) indirect effect, via the mediator, equals $(\beta_{21} + \beta_{23}SD_{MO}) \times (\beta_{34} + \beta_{35}SD_{MO})$, and the residual (moderated) treatment effect equals $\beta_{31} + \beta_{33}SD_{MO}$. In Equation 3.5, this equality will not exactly hold in terms of parameter estimates, from a sample of data, unless the moderator is dichotomous and contrast coded. Nevertheless, the total indirect effect is equal to $\beta_{34}\beta_{23} + \beta_{35}\beta_{21}$.

5. Results

5.1 Level of Board of Directors Quality

Table 2 presents the frequency of board of directors' quality is first measurement in compliance with the SET's Code of Best Practice for Directors of Listed Companies, Best Practice Guidelines for Audit Committee, and The Fifteen Principles of Good Corporate Governance of non-financial listed companies in the Stock Exchange of Thailand (SET) 317 companies for the year 2004.

Table 2. Descriptive Statistics of Measurement in Step of the level of board of directors' quality (N=317)

Acronym	Mediator Variables	Companies Comply	
		Frequency	Percentage
BCEO	The titles and authority of the board's chairman and head of management team are clearly separated	186	58.7%
BI51	More than half of the directors on the board are independent non-executive directors (INDs)	10	3.2%
BMAL	All directors on board to attend every board meetings	18	5.7%
BIAD	Internal audit department is in company	238	75.1%
ACCI	The chairman of AC is an IND	283	89.3%
IDAC	At least three AC members are INDs	242	76.3%
ACMA	All AC members to attend every AC meetings	79	24.9%
ACEX	At least one AC member must be a financial reporting expert as CPA	54	17.0%
RCCI	The chairman of RC is an IND	31	9.8%
RCPR	More than half of the RC members are non-executive directors	69	21.8%
Overall Compliance (Sum of Frequency = 10 BOD x 317 companies = 3,170)		1,210	38.2% (1,210 / 3,170)

5.2 Statistics for Major Variables

Table 3 contains the univariate statistics and bivariate correlations for all five variables.

Table 3. Univariate and Bivariate Statistics for Major Variable

Variables	VDI (Dependent)	LNTA (Independent)	BOQI (Mediator)	HCEO (Moderator)	LNBM (Control)
Mean	0.37	3.44	0.38	0.15	2.38
SD	.11	1.36	.12	.19	.25
Correlations					
VDI	1.00	.54**	.54**	-.38**	.14*
LNTA		1.00	.37**	-.25**	.25**
BOQI			1.00	-.22**	.14*
HCEO				1.00	-.19**
LNBM					1.00

Note. Multicollinearity between independent variables becomes a problem when the correlation between the variables exceeds .80 or .90 (Field, 2000 as cited in Mangena and Pike, 2005).
** Correlation is significant at the .01 level (2-tailed), * Correlation is significant at the .05 level (2-tailed).

5.3 Goodness of Measures

In this section describe the study's voluntary disclosure checklist and provide evidence supporting its reliability. The reliability of measurement in this study was tested using the Cronbach's alpha (Cronbach, 1951). The instruments as voluntary disclosure checklist items used in the study were reliable, with coefficients ranging from .85 to .87, which exceeded the minimum acceptance level of .70 (according to Nunnally, 1978; and Sureshchandar et al., 2002, a Cronbach's alpha of .70 and above testifies strong scale reliability).

Furthermore, in this hierarchical regressions have Tolerance more than .10, indicating that multicollinearity did not exist in the hierarchical regression analysis (Hair et al., 1998). In addition, another more formal method for detecting multicollinearity involves the calculation of Durbin-Watson. The Durbin-Watson test is used to test autocorrelation. As a focused test, the Durbin-Watson test does not address autocorrelation of 1.65 to 2.35 (Prasertratthasin, 2005).

5.4 The Hierarchical Regression Results and Discussion

5.4.1 Hierarchical Regression Results

Table 4.1 and 4.2 provides hierarchical regression results using control variable, independent variable, mediator variable, and moderator variable, in model 1 and 2 on the relationship between firm size and the level of voluntary disclosure adjusted for items that are not applicable to the firm.

Table 4.1. Hierarchical regression results of Hypotheses 1 and 3 (N=317)

Variables	Standardized Beta					
	Equation 1.1		Equation 1.2		Equation 1.3	
	Step 1 (Criterion VDI)	Step 2 (Criterion VDI)	Step 1 (Criterion BOQI)	Step 2 (Criterion BOQI)	Step 1 (Criterion VDI)	Step 2 (Criterion VDI)
CV: LNBM	.15**	.01	.15**	.06	.15**	-.01
X: LNTA		.54** (β_{11})		.36** (β_{21})		.40** (β_{31})
ME: BOQI						.39** (β_{32})
Statistics						
R Square	.02	.30	.02	.14	.02	.43
Adjusted R Square	.02	.29	.02	.14	.02	.42
R Square Change	.02	.28	.02	.12	.02	.41
F Change	6.82**	122.51**	7.42**	44.08**	6.82**	110.31**
Durbin-Watson		1.80		1.84		2.00
Tolerance Min / Max		.94/.94		.94/.94		.94/.98

Note. VDI = voluntary disclosure index; CV = control variable, LNBM = natural logarithm of board members; X = independent variable; LNTA = natural logarithm of total assets; ME = mediator; BOQI = board of directors' quality index.
* $p < .05$, ** $p < .01$.

Table 4.2. Hierarchical regression results of Hypothesis 2 and 4 (N=317)

Variables	Standardized Beta Model 2			
	Step 1	Step 2	Step 3	Step 4
	(Criterion VDI)			
CV: LNBM	.15**	.07	.03	.02
ME: BOQI		.53**	.47**	.62**
MO: HCEO			-.27** (β_{42})	.28
MEMO: BOQI x HCEO				-.55** (β_{43})
Statistics				
R Square	.02	.29	.36	.39
Adjusted R Square	.02	.29	.35	.38
R Square Change	.02	.27	.07	.03
F Change	6.82**	120.79**	31.64**	13.98**
Durbin-Watson				1.89
Tolerance Min / Max				.97/.98

Note. VDI = voluntary disclosure index; CV = control variable, LNBM = natural logarithm of board members; ME = mediator; BOQI = board of directors' quality index; MO = moderator; HCEO = a high concentration of CEO's ownership; MEMO = interaction term between mediator and moderator.
* p < .05, ** p < .01.

Table 4.3 provides hierarchical regression results using control variable, mediator variable, and moderator variable, in Equation 3.1 to 3.3 on the relationship between firm size as independent variable and the level of voluntary disclosure as dependent variable adjusted for items that are not applicable to the firm.

Table 4.3. Hierarchical regression results of Hypothesis 5 (N=317)

Variables	Standardized Beta									
	Equation 3.1				Equation 3.2				Equation 3.3	
	Step 1	Step 2	Step 3	Step 4	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
	(Criterion VDI)				(Criterion BOQI)				(Criterion VDI)	
CV: LNBM	.15**	.01	-.02	-.02	.15**	.06	.05	.04	-.04	-.04
X: LNTA		.54**	.48**	.53** (β_{11})		.36**	.33**	.40** (β_{21})	.40**	.36** (β_{31})
MO: HCEO			-.26**	-.06 (β_{12})			-.13*	.08 (β_{22})	-.09	.20 (β_{32})
XMO: LNTA x HCEO				-.20 (β_{13})				-.22 (β_{23})	-.12	-.02 (β_{33})
ME: BOQI									.36**	.47** (β_{34})
MEMO: BOQI x HCEO										-.40** (β_{35})
Statistics										
R Square	.02	.30	.36	.36	.02	.14	.16	.17	.47	.48
Adjusted R Square	.02	.29	.35	.35	.02	.14	.15	.16	.46	.47
R Square Change	.02	.28	.06	.01	.02	.12	.02	.01	.11	.01
F Change	6.82**	122.51**	29.37**	2.48	7.42**	44.08**	5.99*	2.26	61.66**	7.67**
Durbin-Watson				1.79				1.84		1.98
Tolerance Min / Max				.94/.98				.94/.98		.94/.98

Note: VDI = voluntary disclosure index; CV = control variable, LNBM = natural logarithm of board members; X = independent variable; LNTA = natural logarithm of total assets; ME = mediator; BOQI = board of directors' quality index; MO = moderator; HCEO = a high concentration of CEO's ownership; XMO = interaction term between independent variable and moderator; MEMO = interaction term between mediator and moderator, * p < .05, ** p < .01.

5.4.1.1 Effects of Control Variable

As shown in Table 4.1 and 4.2 when the natural logarithm of board size (LNBM) as control variable was entered into the regression equation in the first step of Model 1, 2, and 3, the coefficient of determination (R^2) was found to be .02 indicating that 2 percent of the level of voluntary disclosure (VDI) and board of directors' quality index (BOQI) are explained by the natural logarithm of board size. It can be observed that control variable of Model 1, 2, and 3 (Std. Beta = .15) showed a significant and positive relationship with VDI and BOQI at the .01 level. These results provided support for LNBM of the study.

5.5.1.2 Effect of Firm Size (LNTA) on BOQI

As shown in Table 4.1 when the natural logarithm of total assets (LNTA) as independent variable was entered into the regression equation 1.2 in the step 2, by adding the one independent variable, R^2 increased to 14 percent. This R^2 change (.12) is significant. This implies that the additional 12 percent of the variation in BOQI is explained by LNTA. LNTA (Std. Beta = .36) was found to have a significant and positive relationship with BOQI at the .01 level of significance. These results provided support for Hypothesis 1 of the study.

5.4.1.3 Effect of Board of Directors' quality index (BOQI) on VDI

As shown in Table 4.2 when the board of directors' quality index (BOQI) as mediator was entered into the regression equation 2 in the step 2, by adding the one mediator, R^2 increased to 29 percent. This R^2 change (.27) is significant. This implies that the additional 27 percent of the variation in VDI is explained by BOQI. BOQI (Std. Beta = .53) was found to have a significant and positive relationship with VDI at the .01 level of significance. These results provided support for Hypothesis 2 of the study.

5.4.1.4 Mediating Effects of BOQI between Firm Size and VDI

A variable functions as a mediator when it meets the following figure 2.

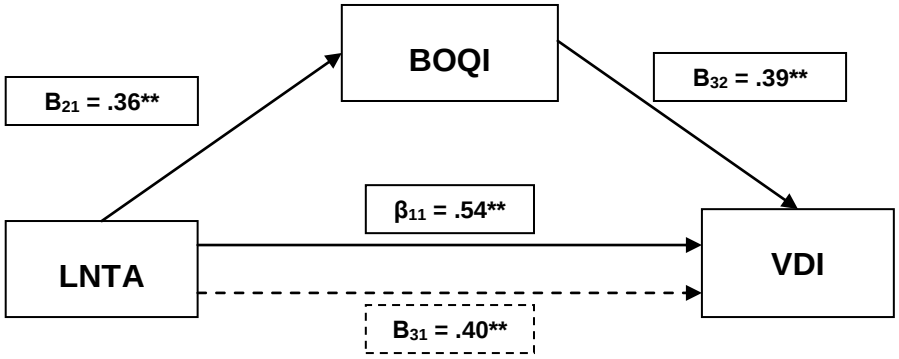

Figure 2. Mediating effects of BOQI between firm size and the level of voluntary disclosure (VDI).

As shown in Table 4.1 when (1) Variations in the natural logarithm of total assets (LNTA) as independent variable (β_{11} = .54, p < .01) significantly account for variations in the dependent variable (VDI). (2) Variations in the LNTA (β_{21} = .36, p < .01) significantly account for variations in the mediating variable (BOQI). (3) When both LNTA and BOQI appear in the step 2 of Equation 1.3, a previously significant relationship between the BOQI (β_{32} = .39, p < .01) and the VDI, and between the LNTA (β_{31} = .40, p < .01) and the VDI. Further, the following equality relationship exists among the parameters of these models meaning that the difference between the overall treatment effect and the residual direct effect is equal to what is called the indirect effect via the mediator (i.e., $\beta_{11} - \beta_{31} = \beta_{21} * \beta_{32}$; .54 - .40 = .36 * .39 = .14). These results provided support for Hypothesis 3 of the study and the type of BOQI is a partial mediator[20].

5.4.1.5 Moderating Effects of HCEO between BOQI and VDI

As shown in Table 4.2 when the third step of Model 2, HCEO was entered into the equation in order to gauge its impact as an independent predictor. The R^2 increased from 29 percent to 36 percent indicating a change of 7 percent, which is significant ($p < .01$).

In the fourth and final step of Model 2, when the interaction term was entered into the Model 2, it can be seen that it yielded a significant F Change of 13.98, and the additional variance explained by the interaction terms are 3 percent. Further, a high concentration of CEO's ownership (HCEO) as independent is significant (β_{43} = -.55, p < .01) and interaction term between BOQI and HCEO is significant (β_{43} = -.55, p < .01), this indicates that a high concentration of CEO's ownership negative moderates the relationship of board of directors' quality index and voluntary disclosure index. These results provided support for Hypothesis 4 of the study and the type of HCEO is Quasi Moderators[21].

The result of the significant interaction is presented in Figure 1. Plotting the interactions of BOQI and HCEO for VDI (Figure 1) shows that at low levels of BOQI with respondents with a high concentration of CEO's ownership (High Concentration) lower level of voluntary disclosure (VDI), while those with a low concentration of CEO's ownership (Low Concentration) report higher level of voluntary disclosure (VDI). This effect is further exacerbated (i.e., distance between high and low

[20] A partial mediator is more likely, the relation between firm size and voluntary disclosure index will be significantly smaller when BOQI is included but will still be greater than zero (Frazier et al., 2004).

[21] A Quasi Moderator not only interacts with the predictor variable but is a predictor variable in itself (Sharma et al., 1981).

concentration increased) when board of directors' quality levels increase. At high BOQI, those with a high and low concentration of CEO's ownership report increased the level of voluntary disclosure (VDI).

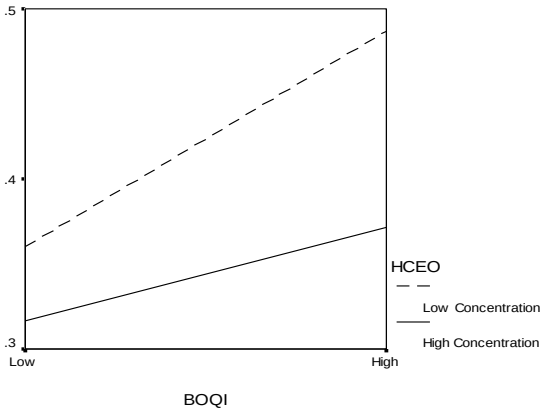

Figure 1. Interaction between the level of board of directors' quality (BOQI) and a CEO's ownership (HCEO) for the level of voluntary disclosure (VDI).

5.4.1.6 Mediated Moderation between Firm Size and VDI

As shown in Table 4.3, interpretation of the slope parameters in Equations 3.1, 3.2, and 3.3 such as β_{11} (Std. Beta = .53, $p < .01$) as overall treatment effect on VDI at the average level of HCEO is significant; β_{12} (Std. Beta = -.06) as moderator effect on VDI on average across the two treatment levels is not significant; β_{13} (Std. Beta = -.20) as change in overall treatment effect on VDI and HCEO increases is not significant; β_{21} (Std. Beta = .40, $p < .01$) as treatment effect on BOQI at the average level of HCEO is significant; β_{22} (Std. Beta = .08) as moderator effect on BOQI on average across the two treatment levels is not significant; β_{23} (Std. Beta = -.22) as change in treatment effect on BOQI as HCEO increases is not significant; β_{31} (Std. Beta = .36, $p < .01$) as residual direct treatment effect on VDI at the average level of HCEO is significant; β_{32} (Std. Beta = .20) as moderator effect on VDI on average within the two treatment levels and at the average level of BOQI is not significant; β_{33} (Std. Beta = -.02) as change in residual direct treatment effect on VDI as HCEO increases is not significant; β_{34} (Std. Beta = .47, $p < .01$) as mediator effect on Y on average within the two treatment levels and at the average level of HCEO is significant; and β_{35} (Std. Beta = -.40, $p < .01$) as change in mediator effect on VDI as HCEO increases is significant. Further, the total indirect effect is equal to -.26 (i.e. $\beta_{34}\beta_{23} + \beta_{35}\beta_{21}$; (.47*-.22) + (-.40*.40) = -.26).These results provided support for Hypothesis 5 of the study and type of moderation as a high concentration of CEO's ownership (HCEO), produced by the mediating process of board of directors' quality index (BOQI), and when this process is controlled, the residual moderation of the treatment effect is reduced as a full mediated moderation[22].

6. Discussion

6.1 Level of the Quality of Board of Directors

The study found that the level of the quality of board of directors is 38%. Using SET's Study (SET, 2003) on good corporate governance characteristics of public listed companies in Thailand's rating as a guideline, that is "very high" to be more than 80 percent, "high" to be between 70 to 80 percent, "medium" to be 60 to 70 percent, "low" to be between 50 to 60 percent and "very low" to be less than 50 percent, the level of BOD's quality found in this study can be said to be at a "very low level".

6.2 Level of Voluntary Disclosure

The study found that the level of voluntary disclosure was 37%. Wallace (1988) rate the levels of voluntary disclosure as " high" if score is more than 50%, "medium" if score is between 30% and 50% and " poor" if score is less than 30%. Using Wallace's study as a guideline, the level of voluntary disclosure in Thailand can be said to be at a "medium" level.

6.3 Mediating Effects of Board of Directors' Quality Index (BOQI)

The study found that the larger firm size, the higher is the level of board of directors' quality as a mediating link to the higher is the level of voluntary disclosure (VDI). The results are consistent with Owusu-Ansah, (1998) argued that central managements of such companies will require outside directors' expert. Because large companies tend to be multi-product business entities; operating over wider geographical areas with several divisional units. Hence, outside shareholders will increase monitoring of manager's behavior to reduce the agency problem (Jensen & Meckling, 1976). Monitoring by outside shareholders may be reduced if managers can provide voluntary disclosure. Therefore, rather than simple mediation, it is expected that one mediated relation between firm size and voluntary disclosure can use board of directors' quality. Further, Willekens et al. (2004) suggested that internal governance mechanisms as board of directors can aid in enhancing corporate voluntary disclosure, and that voluntary disclosure is used as a means to reduce information asymmetry and agency problems. Thus, the firm size has been

[22] In Equation 3.2 and 3.3, either (or both) of two patterns should exist; both β_{23} and β_{34} are significant or both β_{21} and β_{35} are significant. And as a result, the moderation of the residual treatment effect, β_{33} = -.02 is not significant, should be smaller in absolute value than the moderation of the overall treatment effect i.e. β_{13} = -.20 is not significant and these are non-significant in the case of "full" mediated moderation (Muller et al., 2005).

hypothesized to have an indirect effect on voluntary disclosure by the board of directors' quality index.

6.4 Moderating Effect of High Concentration of CEO's Ownership (HCEO)

This study found that HCEO will negatively moderate the relationship between BOQI and VDI. The result is consistent with McClelland and Barker III (2004) that the level of CEO ownership control negatively moderates the relationship between CEO age and firm performance. The traditional view of agency theory proposes that CEO and shareholder interests converge when CEO become shareholders (Jensen and Meckling, 1976). Further, it is expected that increase ownership in the hands of managers will lead to greater equity value for shareholders (Hubbard & Palia, 1995). This theory has been shown to be under-specified in explaining equity ownership effects. Indeed, higher levels of equity ownership also provide CEO with the power necessary to entrench themselves and increase their discretion. Thus, CEO with very high levels of ownership has a greater capacity to be free from the discipline of the firm's board, shareholders, or the market for corporate control namely, takeovers. Indeed, firms run by CEO with high ownership positions perform relatively poorly in the stock market (e.g., DeAngelo & DeAngelo, 1985; Morck et al, 1988; and Slovin & Sushka, 1993 as cited in McClelland & Barker III, 2004). Thus, CEO equity holdings can have differing effects on the alignment of CEO and shareholder interests, it becomes more difficult for shareholders to control the managers and thus will have a negative impact on the relationship of BOQI and VDI.

6.5 Mediated Moderation Effect on the relationship between Firm Size and Voluntary Disclosure Index

The study found that the larger firm size, the higher is the level of board of directors' quality (BOQI) as a mediating link to the higher is the level of voluntary disclosure (VDI). In contrast, when moderation as a high concentration of CEO's ownership (HCEO), produced by the mediating process of the BOQI, these associations appear to be weaker. This finding is supported by Limpaphayom (2000) that chairman, managers and members of the board of directors, as well as the ones who nominated outside non-executive directors. The role of outside non-executive directors per se is minimal as firm ownership was dominated by CEO, the outside non-executive directors (those who did not hold management positions in the firm) would find it difficult to garner sufficient votes to influence or oust incumbent management, hence restricting the role of the market in corporate control. Further, this finding is supported by Limpaphayom (2000) found that family members were often insiders for Thai public listed companies. Chen and Jaggi (2000) that the ratio of independent non-executive directors on corporate boards is positively associated with the comprehensiveness of financial disclosures, and this association appears to be weaker for family controlled firms compared to non-family controlled firms. Finally, Hill (1999) suggested that corporate governance is indeed a complex matter that its role relates not only to issues of efficiency but also accountability, and that since many mechanisms are flawed, it is desirable to have a system of overlapping checks and balance. Thus, CEO equity holdings can have differing effects on the alignment of CEO and shareholder interests, it becomes more difficult for shareholders to control the managers and thus will have a negative impact on the relationship of firm size and voluntary disclosure.

6.6 Control variable

Board size as control variable is found to have positive significant influence on the BOQI and the VDI. This finding is supported by Evans (2004), Lipton and Lorsch (1992), and Mintzberg (1983) that stated larger boards also increase the opportunity for manipulation by corporate management. Although this is the dominant view in the literature, a case can also be made that firms have more individual monitors more board members are more effective than those that have less.

7. Conclusions

This study extends the previous literature by examining voluntary disclosure in a developing country, namely Thailand. Despite intensive efforts to determine the nature of the relationship between the firm size and the level of voluntary disclosure (VDI), empirical studies of this issue have produced mixed results. This paper attempts to delve deeper into this complex phenomenon by mediator and moderator. The proposed framework was substantially validated. These are the study highlights of the overall contribution on the whole body of research in agency theory which this study contributes to practice in voluntary disclosure checklist for the extent of level of voluntary disclosure in non-financial listed companies on the Stock Exchange of Thailand. The voluntary disclosure checklist was based on developing country thus it also provides a useful benchmark for comparison with previous research. These results have a significant contribution to the agency theory as there is a positive relationship between firm size and the level of board of directors' quality. There is a positive relationship between the level of board of directors' quality and the level of voluntary disclosure. The relationship between firm size and level of voluntary disclosure of companies listed on the SET will be mediated by the level of board of directors' quality. A high concentration of CEO's ownership will negatively moderate the relationship between the level of board of directors' quality and the level of voluntary disclosure. These results provided support for type of moderation as a high concentration of CEO's ownership (HCEO), produced by the mediating process of board of

directors' quality index (BOQI), and when this process is controlled, the residual moderation of the treatment effect is reduced as a full mediated moderation. Finally, board size as control variable was found to have a positive significant influence on the BOQI and the VDI.

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Appendix 1. Voluntary Disclosure Checklist

A. Strategic Information

(1) General corporate information
- V1 Brief history of company
- V2 Organizational structure

(2) Corporate strategy
- V3 Statement of strategy and objectives – general
- V4 Statement of strategy and objectives – financial
- V5 Statement of strategy and objectives – marketing
- V6 Statement of strategy and objectives – social
- V7 Impact of strategy on current results
- V8 Impact of strategy on future results

(3) Research and development (R&D)
- V9 Corporate policy on R&D
- V10 Location of R&D activities
- V11 Number employed in R&D

(4) Future prospects
- V12 Statement of future prospects – qualitative
- V13 Qualitative forecast of sales

B. Non-financial Information (Continued)

(6) Social policy and value-added information
- V36 Safety of products
- V37 Environmental protection programs – qualitative
- V38 Environmental protection programs – quantitative
- V39 Community programs
- V40 Value-added statement
- V41 Value-added data
- V42 Value-added ratios
- V43 Qualitative value-added information

C. Financial Information

(7) Segmental information
- V44 Geographical production - quantitative
- V45 Line-of-business production – quantitative
- V46 Competitor analysis – qualitative
- V47 Competitor analysis – quantitative
- V48 Market share analysis – qualitative
- V49 Market share analysis – quantitative

V14 Qualitative forecast of profits
V15 Qualitative forecast of cash flows
V16 Order book or backlog information

B. Non-financial Information

(5) Employee information
V17 Geographical distribution of employees
V18 Line-of-business distribution of employees
V19 Categories of employees by sex
V20 Categories of employees by function
V21 Identification of senior management and their functions
V22 Number of employees for 2 or more years
V23 Reasons for changes in employee numbers or categories over time
V24 Amount spent in training
V25 Nature of training
V26 Policy on training
V27 Categories of employees trained
V28 Number of employees trained
V29 Safety policy
V30 Data on accidents
V31 Cost of safety measures
V32 Policy on communication
V33 Redundancy information
V34 Equal opportunity policy statement
V35 Recruitment problems and related policy

(8) Financial review
V50 Profitability ratios
V51 Qualitative comments on profitability
V52 Cash flow statement – direct
V53 Cash flow ratios
V54 Liquidity ratios
V55 Gearing ratios
V56 Disclosure of brand valuation
V57 Financial history or summary – 6 or more years
V58 Off balance sheet financial information
V59 Advertising information – qualitative
V60 Effects of inflation on future operations – qualitative
V61 Effects of inflation on results – qualitative
V62 Effects of inflation on assets – qualitative
V63 Effects of interest rates on results
V64 Effects of interest rates on future operations

(9) Foreign currency information
V65 Effects of foreign currency fluctuations on future operations – qualitative
V66 Effects of foreign currency fluctuations on current results – qualitative
V67 Foreign currency exposure management description

(10) Stock price information
V68 Share price trend
V69 Market capitalization trend
V70 Foreign stock market listing information