Does Corporate Governance Enhance Financial Distress Prediction?

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Abstract

This study validates some aspects of agency theory, resource dependency theory, and organization theory referring to the Sri Lankan context. The sample includes 205 non-financial listed firms prepared in a balanced panel for six years. Implications are provided for the insufficiency of financial variables in predicting corporate financial distress. Financial aspects together with corporate governance jointly enhance the predictive power of financial distress. Less likelihood of financial distress is explained by board size, board independence, institutional ownership, non-institutional ownership concentration, and board ownership. Boards with 5-9 members are likely to be optimal. Firms fail with the concentrated ownership structure. The expected monitoring role of large institutional shareholders and blockholders is inhibited by their expropriation. The expropriation could also occur with the unitary leadership. Contextually, results make a distinctive contribution to the literature owing to the lack of quality audits for governance compliances, family dominance, and board erraticism. Moreover, corporate control within business groups and economic and political instability are also portrayed.

Keywords: Board and Ownership Structure, Financial Distress, Sri Lanka

Introduction

The risk of business failure has long been an interest among many researchers. This is particularly caused by large corporate scandals that occurred worldwide (e.g. *Enron, WorldCom, Parmalat, Conrad Black, Royal Aholds, Kmart, Lehman Brothers*, etc.). To describe such occurrences, the terms; business failures, financial distress, insolvency, bankruptcy, and default, are interchangeably being used in the bankruptcy literature. As per Beaver (1966), a firm is said to be failed when it is filed for bankruptcy, bond default, an overdrawn bank account, or non-payment of preferred stock dividends. While

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bankruptcy and shutdown are treated as narrow definitions for business crises, broader definitions comprise failure, decline, and distress (Lin et al., 2014). A firm is said to be in distress when it has defaulted its financial commitments (Nigam & Boughanmi, 2017). Defaulting such current obligations is technically termed as insolvency which is one of the forms of financial distress. Financially distressed firms attempt to restructure their assets and liabilities to avoid bankruptcy, but the absence of a quick turnaround strategy results in bankruptcy filing (Asquith et al., 1994).

Bankruptcy is the outcome of financial distress. If financial distress is predictable in advance, it could be avoided through rational turnarounds. Attempts for developing early warning systems for financial distress go many decades back. Starting from Beaver (1966), many other scholars (Altman, 1968; Deakin, 1972; Edmister, 1972; Blum, 1974; Libby, 1975; Martin, 1977; Ohlson, 1980) applied univariate and multivariate models to predict corporate failures. Later, the empiricists have tested the above base models with some modifications. Within this evolution of models, the focus has only been directed towards the accounting and financial aspects of firms. Even if these models are widely used, corporate failures seem to be continuing. Thus, the applicability of accounting and financial data in prediction models is debatable. Providing evidence for Enron and WorldCom, Fich & Slezak (2008) emphasize the ability to manipulate financial and accounting data and to implement window-dressing. As financial factors are mostly past-oriented, prediction models that examine only financial aspects are naturally constrained (Lin et al., 2014). Whereas, models based only on financial data alone do not provide adequate predictive power for financial distress (Lee & Yeh, 2004).

Therefore, it is argued that qualitative aspects of businesses should also be considered in predicting financial distress. Nigam & Boughanmi (2017) claim that bad management, poor decision-making, or a temporary economic downturn promote financial distress. In falling firms, board members retire to avoid their association with failure (Gales & Kesner, 1994). In particular, the extant literature (van Essen et al., 2013; Bonn, 2004; Wang & Lin, 2010; Fich & Slezak, 2008; Bektas & Kaymak, 2009) interprets that recent corporate failures and crises reinforce the importance of good governance practices. Hence, corporate governance (CG) elements and financial ratios jointly produce sound distress prediction models (Li et al., 2015; Cheng et al., 2009). Some studies (Laitinen & Laitinen, 2009; Lajili & Zʹeghal, 2010; Brʹedart, 2014) prove that CG considerably improves the predictive power of existing distress prediction models. Accordingly, the number of board members, board composition, outside directorship and their tenure and ownership, and director turnover are contributory in the literature.

The notion of separation of ownership and control was first noticed by Berle & Means (1932). As per Shleifer & Vishny (1997), such ownership-control separation is the key to the agency problem. Jensen & Meckling (1976) provide implications for the agency theory and view that an agency cost arises due to the divergence between managers' interests and that of shareholders. CG is thought to be one of the mechanisms to mitigate agency costs. Despite the agency theory, other theories such as stakeholder theory, stewardship theory, resource dependency theory, and legitimacy theory are also supposed to align with

CG structures. Referring to the above theories, many studies (Platt & Platt, 2012; Manzaneque, Priego, & Merino, 2016; Cheng et al., 2009; Fich & Slezak, 2008; Elloumi & Gueyi´e, 2001; Wang & Deng, 2006; Lee & Yeh, 2004; Miglani et al., 2015; Donker et al., 2009) emphasize the role of CG in predicting business failures. The majority argues that the separation of ownership and control allows managers to behave in their self-interest. Particularly, agency cost is likely to be severe during a period of financial distress. This is caused by the possibility of enforcing short-term strategies that could maximize managers' benefits. Hence, I suggest that the presence of a good governance system mitigates agency costs in the form of decreased free cash flow, lower administrative expenses, and efficient asset utilization. And, it, in turn, would lead to less likelihood of financial distress.

The USA, Germany, Japan, and the UK are the benchmarks for good governance systems in the world. The focus of the literature is mostly western-oriented (e.g. USA, Canada, UK, Netherlands, Spain) and on some emerging economies (e.g., China, Malaysia, Taiwan, and Thailand). The legal system, legal protection of shareholders, regulatory and disclosure requirements, and economic and political stability determine the strength of a country's governance system. Thus, governance mechanisms are unique to a certain context, and they could affect firms' financial health differently. In Sri Lanka, apart from few studies (Nanayakkara & Azeez, 2015; Wijekoon & Azeez, 2015; Fernando et al. 2019) literature on CG and its effects on financial distress is still lacking. Besides, existing studies have tested governance mechanisms majorly during the ethnic conflict of the country. I believe that governance adoption of firms may have seriously been hampered during the war period. Whereas, the majority of studies cover the period before the major CG reform in 2013. Therefore, the present study moves with the Sri Lankan context for its inquiry during the post-war as well as post-reform period. This context is striking due to several motives. The lack of quality audits on CG compliances, family ownership and control, dynamic boards, and corporate control within the same business group are dominating. Sudden corporate deaths and the country's political and economic instability are also inspiring. Therefore, the study will provide contextually different implications for the literature. Accordingly, research questions to be addressed, are: (1) Do distressed and non-distressed firms vary in terms of CG and other financial indicators? (2) Do ownership concentration and board ownership influence financial distress firms? (3) Which of the board characteristics mostly explain corporate financial distress?

The sample comprised 205 non-financial firms representing 19 industrial sectors of Sri Lanka. Longitudinal data were gathered in a balanced panel covering six years. A matched-paired research design was applied to generate the final sample where, distressed firms were matched with non-distressed firms based on firm size, year, and the industry. Financial distress is the dependent variable (binary) which takes value 1 if a firm is in financial distress and 0 otherwise (non-distress). A firm was denoted as financially distressed when earnings before interest, taxes, depreciation, and amortization (EBITDA) are lower than net finance cost for two consecutive years. Results were generated through conditional logistic regression analysis along with a *t*-test and Wilcoxon signed ranks test.

The study's results are contributory and provide some policy implications. I observed that distressed and non-distressed firms differ in terms of financial aspects (i.e. profitability, net finance costs, and retained earnings) and CG (i.e. ownership of large shareholders, large institutional and non-institutional shareholders, number of board members, and directors' equity stake). Independent directors, large boards, directors' shareholding, large individual investors, and boards with 5-9 members decrease the financial distress likelihood. The occurrence of financial distress is greater possible with CEO duality, and the increased ownership of large shareholders, blockholders, large institutional shareholders, and the top-five shareholders. The expected monitoring role of large shareholders seems to be problematic as they expropriate corporate resources. The expropriation is also likely to occur through the CEO's free-riding with the unitary leadership structure.

The remaining sections of the paper comprise the following. In the succeeding section, I outline the theoretical framework together with hypothesis development. Sample selection, data, and test specifications are described in the Methodology section. Following this, results are presented and discussed with robustness tests. Finally, conclusions are drawn.

Theoretical Foundation and Hypothesis Development

Extant literature has conceptualized the direction and the degree of association between CG elements (i.e., ownership and board structure and board independence) and financial distress. Providing evidence for such proven relationships in the below, the study tends to develop its theoretical framework.

Corporate Ownership

This section discusses the literature on corporate ownership concentrated on institutional and non-institutional shareholders and the convergence of interest between managers and shareholders through managerial equity ownership.

Ownership Concentration

The monitoring process would be more successful if the ownership is concentrated. This argument is supported by the monitoring hypothesis (interest alignment hypothesis or supervision hypothesis) of ownership concentration proposed by Demsetz (1983) and Shleifer & Vishny (1986). In concentrated ownership firms, large shareholders are having a considerable amount of shares intending to enhance the value of their holdings (Li et al., 2008). Lepore et al. (2017) observe a high level of ownership concentration in European non-financial listed companies and emphasize that firm performance is poorly explained by ownership concentration in countries with high judicial efficiency. Nevertheless, concentrated ownership is interpreted as an internal governance system that can be substituted for board independence to lead managerial actions (Lajili & Z´eghal, 2010). Moreover, in line with the monitoring hypothesis, Shleifer & Vishny (1986) state that shareholders with large equity stakes tend to monitor incumbent management. Similarly, block holders execute more power on management while encouraging them to accept

costly and riskier new projects (Lajili & Z´eghal, 2010). Large shareholders of small firms are willing to align personal success and the working mission with the corporate's success and mission (Ciampi, 2015). Their personal reputation is also highly connected with the firm's longevity and success. Higher ownership concentration indicates that going-privates reduce agency costs (Renneboog & Simons, 2005). This is justified by improved monitoring through increased access to information and shareholder activism. As noted by Claessens et al. (2002), access to information by large shareholders enables reducing information asymmetry to overcome principle-agent conflicts. They further stress that large shareholders of non-US firms execute control over firms regardless of cash flow rights. Where there exists far more divergence between cash-flow rights and control rights. From the failure perspective, large shareholders or blockholders are reluctant to take part in financially distressed firms. Instead, they tend to establish proper monitoring towards opportunistic behavior of management and free-riding to avoid firm failure or distress (Elloumi & Gueyi´e, 2001; Donker et al., 2009; Wang & Deng, 2006).

In contrast, a separate and uneven ownership structure may create large shareholder expropriation (Wang & Deng, 2006). The cost of concentrated ownership is debatable concerning supervision and expropriation (entrenchment) hypotheses. The wealth expropriation hypothesis emphasizes that controlling shareholders are apt to expropriate minority interest resulting in a firm's value demise (Lee & Yeh, 2004). Thus, in a concentrated setting, it is advisable to reward controlling shareholders to reduce expropriation. When there are large shareholders in the form of families or banks and the rights of the minorities are not protected by the law, such minorities are unwilling to make investments (Shleifer & Vishny, 1997). Weaker minority protection accommodates dominant shareholders to extract corporate resources to a greater extent (Dahya et al., 2008). In a pyramidal ownership structure, controlling shareholders execute their power through voting rights which exceed their cash flow rights (La Porta et al., 1999). As a result, a large investor may attempt to maximize personal benefits rather than corporate's wealth creation (Shleifer & Vishny, 1997). Attainment of private goals by large shareholders can harm the minorities, which leads to the entrenchment hypothesis (Lepore et al., 2017). Where a negative association between firm performance and ownership concentration is expected. According to Fraile & Fradejas (2014), board representation by independent directors is one of the alternatives to solve the conflict between large shareholders and the minority, but it could be subject to the degree of ownership concentration. Ciampi (2015) imports the US slogan; *weak managers, strong block holders, and unprotected minority shareholders*, to the Italian context.

Asia is characterized by the concentrated ownership structure led by block holders (Manzaneque, Priego, & Merino, 2016). During the East Asian economic crisis, the presence of controlling shareholders and their representation in the board has decreased the probability of being financial distress of Thai firms (Polsiri & Sookhanaphibarn, 2009). Li et al. (2008) examine a significant mean difference between Chinese distressed and healthy firms concerning ownership of large shareholders. They conclude that ownership concentration is relatively higher in healthy firms. Such a negative relation between

ownership concentration and default likelihood is proven in the literature (Wang & Deng, 2006; Elloumi & Gueyi´e, 2001; Ciampi, 2015; Donker et al., 2009; Parker et al., 2002). Conversely, the risk of falling into financial distress is positively related to the presence of controlling shareholders in Taiwanese firms (Lee & Yeh, 2004). Nguyen (2011) also discovers a positive relationship between concentrated ownership and idiosyncratic risk. Experiencing eight East Asian economies, Claessens et al. (2002) observe a positive association between firm value and cash flow ownership of large shareholders. However, the firm value decreases when control rights are over cash flow rights. Major shareholders who are in the concentrated ownership structure create a higher corporate performance (Wei et al., 2017; Boubakri et al., 2005). Strong performance is examined in firms with female CEOs when ownership is concentrated on directors and other companies (Geiler & Renneboog, 2015). They have further elaborated that when the ownership is concentrated to outside shareholders, lower compensation is paid to CEOs. Conversely, some studies reveal an inverse relationship between concentrated ownership and firm performance; profit margin (Lepore et al., 2017), bank value (Busta et al., 2014), rate of return on the stock market (Mudambi & Nicosia, 1998). However, it is a quadratic relationship with firm value for Spanish firms (De Miguel et al., 2004).

No uniformity above for the effect of ownership concentration on financial distress likelihood. Yet, I hypothesize that the expropriation of minority shareholders and unnecessary interference by large shareholders may lead firms into financial distress.

H_1- Greater ownership concentration leads firms to financial distress

Institutional Ownership Concentration

Ownership concentration by institutional shareholders is vital in terms of both the monitoring and the expropriation hypotheses. Those institutions (e.g. mutual funds, pension funds, investment banks, insurance companies, etc.) are knowledgeable about the target firm and are having a strong voice to influence its decisions (Mathew et al., 2016). However, institutional shareholders shall not be controlled by the largest and the second-largest shareholder (Lee & Yeh, 2004). Their activism is demanding over the last few years owing to the conflict between managers and shareholders (Gillan & Starks, 2000). Nonetheless, the influence of institutional shareholder activism on performance is suspicious (Romano, 2001). The role of activist investors is also debatable in the literature. In evidence, Guercio & Hawkins (1999) have originated that activism objectives, strategies, and influence on the target firm vary with the pension fund. Hartzell & Starks (2003) express that institutional investors play a monitoring role to minimize agency conflict between owners and managers. Moreover, they tend to deteriorate opportunistic earnings management of managers (Chung et al., 2005), and to monitor the self-serving behavior of management (Guercio & Hawkins, 1999). With the increased monitoring by institutional investors, discretionary accruals are likely to decrease but, in turn, management may manipulate earnings to cater earnings goals of such investors (Cornett et al., 2008).

Effective oversight by institutional shareholders can be used as one of the mechanisms to mitigate the agency costs of unitary leadership structure (Brickley et al., 1997). However, Gillan & Starks (2000) highlight the lack of expertise of pension fund managers for advising management. Institutional ownership concentration in the UK is higher than that of the USA (Short & Keasey, 1999). The companies in the UK are monitored by institutions through *behind-the-scenes fashion* without disclosing facts to the general public. The extent of the challenge imposed on management by institutions is subject to potentials for their business relations with the firm. Based on this line argument, Hutchinson et al. (2015) distinguish pressure-resistant and pressure-sensitive institutional investors. The former is more challenging for the management since no economic bonds with the firm. Some studies focus on the role of institutional investors in monitoring corporate governance practices. Blockholding by pension funds, or mutual and trust funds is treated as an effective corporate governance mechanism to maintain the objectivity of managerial behavior (Lajili & Z´eghal, 2010). Engagement in corporate governance by institutional investors is in the form of negotiations with management and proxy proposal (Romano, 2001). Such corporate governance proposals of institutions are superior to that of individuals (Gillan & Starks, 2000).

The contribution of institutional investors to corporate risk and risk management policies is an emphasis in the literature. In consequence, firm-specific risk and comprehensive risk management policy are positively related to institutional share stake in the Australian context (Hutchinson et al., 2015). They further report that the size of institutional shareholding increases corresponding to a comprehensive measure of risk management regardless of shareholder type. Mathew et al. (2016) have found a positive and significant association between institutional ownership and both total risk and asset return risk. Institutional investors in financially distressed firms attempt to promote an immediate performance or to leave the firm (Hutchinson et al., 2015).

Some contextual studies (Hutchinson et al., 2015; Donker et al., 2009) have proven a positive association between institutional ownership and firm performance in Australia and Netherlands. When directors are appointed by the pressure-resistant institutional shareholders (e.g. investment funds, pension funds, venture capital, and holding firms), it leads to decrease corporate failure likelihood (Manzaneque, Merino, & Priego, 2016). The stock market suspension is one of the indicators of corporate default. Mangena & Chamisa (2008) have found that non-institutional shareholders positively and significantly impact such a suspension in South Africa.

Association between institutional ownership concentration and firm performance is also contradictory in the literature. Thus, two alternative hypotheses are developed in this connection.

H_{2a}- Greater institutional ownership concentration creates less likelihood of financial distress

H_{2b}- Greater institutional ownership concentration leads firms to financial distress

Managerial Ownership

Management is supposed to not always act effectively for the betterment of the principle (Jensen & Meckling, 1976). They are likely to extract firms' resources for their consumption. Therefore, it is suggested that the conflict of interest between managers and shareholders would be converged if insiders claim for more equity stake. This is the argument of the convergence of interest hypothesis which relates to aligning managers' interests with that of owners. Referring to this conflict of interest hypothesis, literature (De Miguel et al., 2004; Morck et al., 1988; Manzaneque, Priego, & Merino, 2016) suggests that firm value increases with increased managerial ownership. Board members with share ownership are motivated to make a more positive influence on managerial performance through monitoring and counseling (Jermias & Gani, 2014). Morck et al. (1988) have found that the effect of this convergence of interest is in action across every level of ownership. However, managerial ownership at a lower level aligns the interest between shareholders and management (Donker et al., 2009). Demsetz (1983) provides a balanced view (neutrality hypothesis) for ownership structure assuming it as an endogenous outcome of market forces. Fama & Jensen (1983) further extend this view highlighting the offsetting costs of significant insider ownership. They claim that even with small equity with management, market discipline pushes them towards value maximization.

In contrast, as per the entrenchment hypothesis (Morck et al., 1988), a high level of managerial ownership results in entrenchment which leads to poor firm performance. During a period of stock sales or option exercises, directors and executives with higher equity stakes tend to use discretionary accruals to improve firm performance apparently (Cornett et al., 2008). In this way, their higher equity ownership may delegate them enough voting power, and perhaps, their employment is guaranteed with an attractive salary (Morck et al., 1988). They further state that such an entrenchment is not merely due to the voting power. Even with a small stake, entrenchment can occur by means of management's tenure with the firm, and status as a founder or personality. As they found, such prerequisites of entrenchment are highly associated with managerial ownership over 5%. However, Jermias & Gani (2014) claim that managerial ownership is vital because of the necessity of their voting power for critical decisions.

Consisting of the above theoretical bases, worldwide empirical results are reported. Short & Keasey (1999) have found that management is aligned at both lower and higher levels of equity ownership in the USA. Conversely, management is entrenched at a higher level of ownership in the UK and an intermediate level in the USA. In Germany, SME's performance improves with increased managerial ownership of nearly 40% (Mueller & Spitz-Oener, 2006). De Miguel et al. (2004) and Short & Keasey (1999) refer to US and UK literature concerning a non-linear relationship between insider ownership and firm performance. This non-monotonic relationship between managerial ownership and firm performance has also been proven by the agency theorists (Morck et al., 1988; McConnell & Servaes, 1990). However, this relationship has been strongly positive at the lower level of inside ownership (McConnell & Servaes, 1990). Parker et al. (2002) report a positive

association between insider ownership and the likelihood of firm survival, and it is negative for business failure (Fich & Slezak, 2008). A lower downside risk appears to have high managerial ownership in Taiwanese firms (Wang et al., 2015). Donker et al. (2009) conclude that firms with higher managerial ownership are less likely to be financially distressed.

Discordant conclusions are reported above. Thus, I hypothesize on the convergence of interest hypothesis for board ownership.

H_3- Higher equity stake of directors decreases financial distress likelihood

Board Independence

Board independence is supposed to be achieved through dividing the roles of the chairman and the CEO (i.e. avoiding CEO duality) and the presence of independent non-executive directors in boards. Thus, this section reports tested relationships between board independent criteria and corporate performance.

CEO Duality

The board leadership structure is debatable in the literature supporting either agency theory or stewardship theory. Donaldson & Davis (1991) view that shareholders expect protection through the separation of board chair and CEO positions which provides a reference to the agency theory. The separation of duties is an indicator of good governance and increased supervision (Berger et al., 2016). Conversely, CEO duality undermines firm performance owing to the CEO's misconduct and lack of monitoring of his roles (Armeanu et al., 2017). Hambrick & D'Aveni (1992) propose to have a top management team rather than a single leader (CEO). A powerful CEO, in turn, could lead to the failure of top management teams Moreover, such a powerful CEO tends to hold the board chair position too (Mathew et al., 2016). He is willing to form a weaker board which would not be challenging to managerial decisions. This duality structure hampers effective monitoring with greater use of discretionary accruals (Cornett et al., 2008). However, an independent board chair enforces effective monitoring which will result in less likelihood of corporate failures (Armeanu et al., 2017).

Conversely, Donaldson (1990) supports the stewardship theory which holds that no conflict of interest between managers and owners. He further explains that under the duality structure, financial performance enhances through minimal role ambiguities and conflicts. Raising the organization theory, Finkelstein & D'Aveni (1994) point out that vigilant boards prefer CEO duality and suggest that influential profiles who set strategic direction should be headed in firms. The CEO as such a dominant character directs firms into success. An executive manager is not an opportunistic shirker who wants to be a good steward of firm assets and to maximize owners' interests (Donaldson & Davis, 1991). Brickley et al. (1997) have found that over 80% of 737 large US firms practice the unitary leadership structure.

Results are inconsistent among empiricists supporting either the agency theory or the stewardship theory. Dey et al. (2011) have found that firms that instantly adopt the dual leadership structure upon investors' pressure, generate poor announcement return and subsequent performance. CEO duality improves the performance of restaurants in the US, and it is a greater positive for full-service restaurants (Guillet et al., 2013). Conversely, Tang (2017) shows that duality affects firm performance negatively in the US computer industry. This is only applicable when the CEO is more powerful than other executives, and the board comprises a blockholding outside director. This unitary leadership structure would limit outside director attraction and blockholder ownership (Bekiris, 2013). Furthermore, it is positively associated with higher incentive compensation for the CEO (Broye et al., 2017). CEO dominance weakens bank risk-taking (Pathan, 2009). It also affects the asset return's risk positively (Mathew et al., 2016), and creates higher stock return volatility (Adams et al., 2005). Dominant CEOs with duality or ownership concentration may lead firms into bankruptcy (Darrat et al., 2016). On the contrary, a dual leadership structure does not significantly affect the probability of default of Chinese firms (Wang & Deng, 2006). Platt & Platt (2012) isolate duality structure from either solvency or bankruptcy. This pettiness of CEO duality in explaining financial distress is also appealed in the literature (Simpson & Gleason, 1999; Manzaneque, Priego, & Merino, 2016). The unitary leadership structure inspires the financial distress of manufacturing firms in Sri Lanka (Dissanayke et al., 2017).

The above assertions on duality structure are conflicting. Thus, standing with the agency theory, the hypothesis is originated below.

H_4- Firms with CEO duality have a high likelihood of financial distress

Independent Non-executive Directors

Board independence also interacts with some perspectives of the agency theory. This is caused by agency relationships are non-optimal, wasteful, or inefficient (Jensen & Meckling, 1976). Moreover, the board takes care of internal controls and other managerial actions which would be the monitoring device of shareholders' rights (Fama & Jensen, 1983). When board monitoring properly incurs, managers are less likely to benefit from greenmail and golden parachutes (Eisenhardt, 1989). Therefore, informed outsiders can be appointed to the board who would-be arbiters of the agency problems (Fama & Jensen, 1983). Besides, the agency theory prefers to have boards with outsider-domination (Dalton et al., 1998). Thus, it encourages having a reasonable proportion of non-executive directors (NEDs) on boards.

The structure of the monitoring process is agency theory-oriented. Alternatively, resource dependency theory (Pfeffer, 1972; Pfeffer & Salancik, 1978) interprets outside directors as a critical link to the external environment. This resource dependency perspective concerns the service, expertise, and counsel role of the board (Santen & Soppe, 2009). Though the NEDs are outsiders, all of them may not be independent. Independent directors belong to NEDs but they are not supposed to have personal or economic dealings with

the firm as well as management (Hsu & Wu, 2014). Their autonomous monitoring behavior in resolving agency problems is appreciated by the agency theorists (Jensen & Meckling, 1976; Fama & Jensen, 1983; Baysinger & Butler, 1985; Cornett et al., 2008; Hsu & Wu, 2014). Especially, this monitoring is directed towards management discretion to mitigate earnings management potentials (Cornett et al., 2008). Large independent boards enable to reduce the cost of debt financing by providing reliable information to lenders (Anderson et al., 2004). It is also contributory to avoiding distressed firms from falling into bankruptcy (Fich & Slezak, 2008). Board's commitment to addressing business problems is guaranteed by the appointment of an independent director (Romano, 2001). On the contrary, outside directors, who do not have access to subjective information, are out of track regarding day-to-day decision processes to evaluate the quality of managerial decisions (Baysinger & Butler, 1985). Lack of firm-specific knowledge with outsiders makes managers a platform to formulate strategies in their self-interest (Hsu & Wu, 2014). Adams & Ferreira (2007) suggest optimizing management-friendly boards. This is due to the CEO may hesitate to share information with an independent board which is supposed to be strict.

Empirical findings are contrary to the board diversity literature. Perry & Shivdasani (2005) conclude that restructuring firms with an outside-dominated board, show significant subsequent improvement in operating performance. In contrast, Bhagat & Bolton (2008) report that board independence is positively associated with poor performance. Some studies (Bhagat & Black, 2001; Vafeas & Theodorou, 1998) fail to find any significant association between board independence and firm performance. In Taiwanese firms, large independent boards with substantial power contribute to lower downside risk (Wang et al., 2015). US bankruptcies disclose an inverse relation between outside directorship and bankruptcy hazards (Fich & Slezak, 2008). Alike, Platt & Platt (2012) highlight the role of independent boards when avoiding bankruptcies. In the same context, Nguyen & Nielsen (2010) treat independent directors as valuable contributors to the shareholders. This is verified based on the stock market reactions to the sudden death of independent directors. In opposition, the probability of bankruptcy gets lower with a higher proportion of executive directors (Darrat et al., 2016). This is pertinent when certain knowledge is required to understand the firm's operations. The UK setting also highlights that the proportion of independent directors positively affect failures but gray directors are prominent to avoid downfalls (Hsu & Wu, 2014). Elloumi & Gueyi´e (2001) observe fewer outside directors in financially distressed firms compared to matched healthy firms. When explaining the distress status, the fraction of independent directors in Australian firms is also contributory (Miglani et al., 2015). This result is not confirmed by Br´edart (2014) for matched firms in the USA.

Heterogeneity of the aforesaid results leads to hypothesize the following.

H5- Firms with a greater fraction of independent directors have less likelihood
         of financial distress

Board Size

Deciding the absolute size of boards is one of the key concerns of the corporate governance literature. Zahra & Pearce (1989) propose four theoretical perspectives to examine the boards' functions. They comprise legalistic, resource dependence, class hegemony, and agency theories. However, agency and resource dependency theories provide greater empirical support to address the board size issue. Aligning with the agency theory, small boards are recommended by early theorists (Jensen, 1993; Lipton & Lorsch, 1992; Chaganti et al., 1985; Judge, William & Zeithaml, 1992; Yermack, 1996). Board effectiveness cannot be assured if the board size exceeds seven or eight (Jensen, 1993), or ten (Lipton & Lorsch, 1992). They further claim that small boards enable them to avoid CEO dominance and to express views within time constraints. Effective brainstorming sessions are also encouraged to reach unanimous decisions. Moreover, members of small boards become acquainted with each other. On the other hand, some studies highlight the shortcomings of large boards. Chaganti et al. (1985) view that top management may enforce greater control due to difficulty in managing large boards. Further referring to agency theorists, other drawbacks include social loafing and higher co-ordination costs (Coles et al., 2008), longer deliberations (Bektas & Kaymak, 2009), inhibition of effective participation in the strategic decision process (Judge, William & Zeithaml, 1992), directors' free-riding (Hermalin & Weisbach, 1998), and CEO free-riding (Mathew et al., 2016).

In favor of large boards, they provide disciplinary control over the CEO (Br´edart, 2014) and are advantageous for their extensive services (Chaganti et al., 1985). This emphasis on large boards is provided by the resource dependency theory. Accordingly, a board is a boundary spanner that provides timely information to the executives overlooking general and competitive environments (Zahra & Pearce, 1989). Denoting the resource dependency theory, literature (Gales & Kesner, 1994; Wang & Deng, 2006; Jermias & Gani, 2014) stresses the need for larger boards for effective links with the external environment and for getting connected with critical resources. Besides the external environment, board size is also subject to the firm's current strategy and prior financial performance (Hillman et al., 2009). People in large boards table their different perspectives, skills, and experiences (Platt & Platt, 2012), and board diversity better coordinates challenges and conflicts (Wilson et al., 2013). Dalton et al. (1999) cite that large boards lead to higher firm performance. Chaganti et al. (1985) have found that surviving retail firms tend to have large boards compared to failed ones.

The optimal board size is vague in the empirical literature. Chaganti et al. (1985) report the determinants of board size which contain the CEO's personal characteristics, his experiences of dealing with large boards, and the number of committees held with outside directors. According to Yermack (1996), other contributing factors include company size, performance, and the CEO's preferences. On occasion, board size is subject to the legal protection of firms (Br´edart, 2014). Core et al. (1999) examine a significant positive relationship between board size and total CEO compensation in the USA. However, the association with the cost of debt is inverse for SP 500 firms (Anderson et al., 2004). Small

boards relate to the higher firm risk of FTSE 350 firms in the UK (Mathew et al., 2016). van Essen et al., (2013) prove a positive relationship between board size and performance measures. Inverse relationships are also frequent in the literature (Yermack, 1996; Staikouras et al., 2007; Jermias & Gani, 2014). Coles et al. (2008) detect a U-shaped relation between board size and firm value and optimize very small and very large boards. Nonetheless, some studies (Bektas & Kaymak, 2009; Bonn, 2004; Bhagat & Black, 2001) failed to detect any significant connection in this respect.

Larger boards reduce the probability of bankruptcy of Compustat firms (Darrat et al., 2016), and the failure risk of Romanian firms (Armeanu et al., 2017). This less frequency of bankruptcy is stronger for family businesses in the UK (Wilson et al., 2013). Bankruptcies of US public and private firms are evidence of their small board size (Platt & Platt, 2012), but board size is not a significant determinant of the probability of default of Chinese firms (Wang & Deng, 2006). Complex firms with serious financial trouble are benefited from the increased advisory capacity of large boards (Darrat et al., 2016). Whereas, board size is negatively related to financial distress indicators (Manzaneque, Priego, & Merino, 2016; Wei et al., 2017). Nevertheless, once distress is perceived, small boards are more effective at avoiding bankruptcy (Fich & Slezak, 2008).

An optimal board size seems to be controversial. So, two alternative hypotheses are:

H_{6a}- Large board size decreases financial distress likelihood

H_{6b}- Large board size increases financial distress likelihood

Methodology

Data and Sample

The sample was drawn from the listed firms in the Colombo Stock Exchange (CSE). The sampling frame was accessed through the *Listed Company Directory* on the CSE website. The sample comprised 205 non-financial firms out of all listed firms of 285. The firms with missing data and listed after 2012 were ignored. The sectors such as Bank, diversified financial and insurance were excluded due to different regulatory requirements, compliance, and reporting practices. Longitudinal data were gathered for six years in a balanced panel setting. Financial information, corporate governance, and other board-specific facts are disclosed in annual reports which were accessed via the CSE database. While financial information was gathered from financial statements, measures of board structure were established through profiles of directors, and the corporate governance compliance report. Ownership structure and concentration were derived from the annual report of the board of directors, and the investors' information section.

Variables Construction

Financial distress (FD) is the dependent variable of the study. Ware (2015) defines *Financial Distress* as a financial danger or desperate financial need, and it is the inability

of meeting fixed payment obligations (Gilson, 1989). The study treats a firm as financially distressed when its *earnings before interest and tax depreciation and amortization (EBITDA)* are lower than net finance cost for two consecutive years. Approximations for this definition are also offered by the literature (Manzaneque, Merino, & Priego, 2016; Asquith et al., 1994; Pindado et al., 2008; Manzaneque, Priego, & Merino, 2016). Financial distress is a binary variable that takes value 1 if a firm satisfies the above condition and 0 otherwise (non-distress). Independent variables comprise corporate governance and financial variables. Denoting aspects of corporate governance, ownership variables are covered by *ownership concentration (OWCN)*, *institutional ownership concentration (IOWCN)*, *non-institutional ownership concentration (NIOWCN)*, and *board ownership (BDOW)*. Board characteristics are represented by *CEO duality (CEODL)*, *independent directors (INDDR)*, and *board size (BDSZ)*. Financial factors contain *profitability (PROF)*, *net finance cost (NFC)*, and *retained earnings (RE)*. The study employs two matching variables, that is, *firm size (SIZE)*, and *industry (INDRY)*. Table 1 illustrates the operationalization of these variables.

Methods

Referring to some associated literature (Gales & Kesner, 1994; Elloumi & Gueyi´e, 2001; Lajili & Z´eghal, 2010; Mangena & Chamisa, 2008; Hsu & Wu, 2014; Manzaneque, Priego, & Merino, 2016; Manzaneque, Merino, & Priego, 2016), the study employed the matched-paired research design to generate the final sample. In the first instance, it was identified 109 firm-year observations as financially distressed and afterward, they were matched with non-distress ones. Where firm size, industry, and the accounting year were the matching criteria. The matching procedure excluded 60 distressed observations due to the lack of appropriate matching. Finally, it generated 98 matched observations as 49 distressed and 49 non-distressed. When matching the firm size, a 10% deviation for the firm in either direction was allowed. The legitimacy of the matching process was ensured by the paired t-test except for independent directors.

The key research question is addressed in an explanatory study. Thus, it delineates how corporate governance contributes to financial distress prediction. This correlational setting applied conditional logistic regression analysis. Hosmer et al. (2013) recommend this analytical tool for matched case-control studies, and later empiricists (Hsu & Wu, 2014; Mangena & Chamisa, 2008; Manzaneque, Priego, & Merino, 2016; Manzaneque, Merino, & Priego, 2016) validate its applicability. Accordingly, equation (1) expresses the proposed econometric relationship.

$$FD = \beta_0 + \beta_1 PROF + \beta_2 NFC + \beta_3 RE + \beta_4 OWCN + \beta_5 BDOW + \beta_6 CEODL + \beta_7 INDDR + \beta_8 BDSZ + d_t + n_i + \varepsilon \tag{1}$$

Where, FD = Financial distress (dummy variable representing financial distress status, coded 1 if a firm is financially distressed and 0 otherwise); PROF = profitability (earnings before interest and taxes scaled by total assets at the beginning of the period); NFC = net finance cost (the difference between finance cost and finance income scaled by total assets

at the beginning of the period); RE = retained earnings (retained earnings or losses in proportion to total assets at the beginning of the period); OWCN = ownership concentration (percentage of share ownership of shareholders who owns 3% or more); BDOW = board ownership (percentage of shares held by the board of directors); CEODL = CEO duality (a dummy variable, coded 1 if the same person holds both titles of *Chairman* and *CEO* and 0 otherwise); INDDR = independent directors (proportion of independent non-executive directors in the board); BDSZ = board size (number of directors in the board); d_t = time effect; n_i = individual effect; ε = random disturbance.

Table 1: Variable Definitions[1]

Variable	Abbr.	Definition	Sign
Dependent Variable			
Financial distress	FD	A dummy variable equals 1 if a firm is in financial distress and 0 otherwise. A firm is treated as *financially distressed* when its earnings before interest and taxes depreciation and amortization (EBITDA) are lower than net finance cost for two consecutive years	
Independent Variables			
Financial Variables			
Profitability	PROF	Earnings before interest and taxes to total assets at the beginning of the period ($EBIT_t / TA_{t-1}$)	-
Net finance cost	NFC	Net finance cost to total assets at the beginning of the period (NFC_t / TA_{t-1})	+
Retained earnings	RE	Retained earnings or losses to total assets at the beginning of the period (RE_t / TA_{t-1})	-
Corporate Governance			
Ownership concentration	OWCN	Percentage of share ownership of shareholders who own 3% or more	+
Institutional ownership concentration	IOWCN	Percentage of share ownership of institutional shareholders who own 3% or more	+/-
Non- institutional ownership concentration	NIOWCN	Percentage of share ownership of non-institutional shareholders who own 3% or more	+/-
Board ownership	BDOW	Percentage of shares held by the board of directors	-

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[1] Table 1 operationalizes the study's variables with their expected signs. Financial distress (FD) is the dependent variable. Independent variables comprise financial and corporate governance variables. Matching variables are used to match distressed and non-distressed firms to generate the matched sample.

CEO duality	CEODL	A dummy variable equals 1 if the same person holds both titles Chairman and CEO and 0 otherwise	+
Independent directors	INDDR	The proportion of independent non-executive directors in the board	-
Board size	BDSZ	Number of directors on the board	+/-
Matching Variables			
Firm Size	SIZE	Book value of total assets	
Industry	INDRY	All industries at the CSE except for Banks, diversified financial, and insurance	

The study attempts to separately capture the impact of institutional shareholders and non-institutional shareholders on financial distress. Therefore, equation (2) and equation (3) are suggested by dividing the *OWCN* variable into institutional and non-institutional ownership concentration.

$$FD = \beta_0 + \beta_1 PROF + \beta_2 NFC + \beta_3 RE + \beta_4 IOWCN + \beta_5 BDOW + \beta_6 CEODL + \beta_7 INDDR + \beta_8 BDSZ + d_t + n_i + \varepsilon \quad (2)$$

$$FD = \beta_0 + \beta_1 PROF + \beta_2 NFC + \beta_3 RE + \beta_4 NIOWCN + \beta_5 BDOW + \beta_6 CEODL + \beta_7 INDDR + \beta_8 BDSZ + d_t + n_i + \varepsilon \quad (3)$$

Where, IOWCN = Institutional ownership concentration (percentage of share ownership of institutional shareholders who own 3% or more); NIOWCN = Non-institutional ownership concentration (percentage of shares held by non-institutional shareholders who own 3% or more).

Results and Discussion

Descriptive Analysis and Univariate Test

Data exploration for the full sample is offered by the descriptive statistics in Table 2. Though the average profitability stands at an 8% level, it varies from -606% to 339% across firms. Though the mean value of net finance cost (0.6%) is negligible, its maximum reaches 54% surprisingly. Overall, the average accumulated profits (23%) are notable. However, the standard deviation (45%) indicates that it disperses over firms significantly. The large shareholders claim for 79% of total shareholdings. Remarkably, the maximum value of ownership concentration is 100%. In terms of concentrated ownership, a more than 50% mean gap exists between institutional and non-institutional shareholders. The institutional ownership concentration ranges from zero to 100%. While board ownership ranges from 0% to 73%, it is 8% of an average firm. Board representation by independent directors is nearly 40% but, the sample includes at least one firm without independent directors. The mean and median of the board size are mostly identical (8 members). Its

quartiles indicate that within 50% of data, board size ranges from 6 to 9 members. Firms with CEO duality account for 24% of the sample.

Table 2: Summary Statistics[2]

Summary Statistics

Variable	Mean	Median	25th Quartile	75th Quartile	Min	Max	S.D.
Financial variables							
PROF	0.087	0.072	0.016	0.128	-6.057	3.392	0.257
NFC	0.006	0.003	-0.007	0.021	-0.183	0.537	0.033
RE	0.234	0.229	0.080	0.443	-8.158	3.402	0.454
Corporate Governance							
OWCN	0.787	0.799	0.713	0.881	0.083	1.000	0.117
IOWCN	0.664	0.725	0.580	0.833	0.000	0.999	0.242
NIOWCN	0.125	0.0000	0.0000	0.136	0.000	0.927	0.212
BDOW	0.081	0.003	0.000	0.060	0.000	0.731	0.171
INDDR	0.389	0.375	0.300	0.455	0.000	0.833	0.133
BDSZ	7.833	8.000	6.000	9.000	3.000	15.00	2.058
	Category			Frequency			%
CEDODL	1			298			24.23
	0			932			75.77

Table 3 initially compares descriptive statistics for matched distressed and non-distressed firms. The results reveal that means of profitability (5.4%) and retained earnings (29%) for non-distressed firms are greater than that of distressed firms. Medians and quartiles are also higher for non-distressed companies. However, many of these measures of distressed firms show negative values. Distressed firms have higher net finance costs for all of the summary measures. It reports the means of 2.7% and 0.2% for distressed and non-distressed firms respectively. The ownership concentration (distressed: 80%; non-distressed: 78%) is a common phenomenon regardless of distress status. Conversely, distressed firms are more concentrated on institutional shareholders. This is verified by

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[2] Table 2 provides summary statistics for the full sample consisting of 1230 firm-year observations. Financial variables include *profitability (PROF), net finance cost (NFC)*, and *related earnings (RE)*. Corporate governance is represented by *ownership concentration (OWCN), institutional ownership concentration (IOWCN), non-institutional ownership concentration (NOWCN), board ownership (BDOW), independent directors (INDDR), board size (BDSZ)*, and *CEO duality dummy (CEODL)*.

the lower non-institutional ownership concentration in distressed firms (2%) compared to counterparts (8%). On average, the board of directors of healthy firms is apt to own more shares (6%) than distressed firms (2%). It seems that board independence does not vary significantly among the two firm groups. Nonetheless, board independence accounts for nearly 40%. While healthy firms experience relatively large boards (8.2), it is 6.9 for distressed firms. CEO duality does not exist in the majority of firms. Yet, this duality is led more by distressed firms (35%) than non-distressed firms (12%). Additionally, table 3 makes a mean comparison between the two firm groups. Significance of mean differences are generated through the t-test and the Wilcoxon signed ranks test. Tests results present a significant mean difference in relation to profitability, net finance cost, retained earnings, institutional and non-institutional ownership concentration, and board size at the 1% significant level. Wilcoxon signed ranks test also provides significance only for board ownership and ownership concentration at 5% and 10% levels respectively. However, the t-test signifies board ownership only at the 10% level.

Coefficients of correlation of study's variables are presented in Table 4. Pearson's correlation coefficient measures the correlation among scale variables. Correlation between scale and nominal variables is presented as polychoric correlation coefficients. Tetrachoric correlation coefficients determine the correlation among nominal variables. Results show that financial distress reflects a positive correlation with net finance cost, and institutional ownership concentration at the 1% significant level. It is also positive with CEO duality at the 5% level. Though the association with ownership concentration and independent directors is positive, they are not significant. Conversely, financial distress has a significant (at 1%) negative relation with profitability, retained earnings, non-institutional ownership concentration, and board size. Board ownership is also negatively related at the 5% significant level. The correlation matrix also examines possible multi-collinearities. A strong positive correlation (r = 0.84) exists between ownership concentration and institutional ownership concentration. A strong negative association (r = -0.72) between institutional and non-institutional ownership concentration is apparent. These two concentration variables reflect a moderate relationship with board ownership negatively (r = -0.57) and positively (r = 0.62) respectively. Retained earnings also reveal a moderate correlation with profitability (r = 0.57) and net finance cost (r = -0.51). These multicollinearity issues are taken into account when fitting the proposed regression models.

Table 3: Mean Comparison for Matched-paired Firms[3]

Variable	Distress					Non-distress					t-test	Wilcoxon
	Mean	Median	25th Q	75th Q	S.D.	Mean	Median	25th Q	75th Q	S.D.	Z	Z
Financial Variables												
PROF	-0.030	-0.009	-0.040	-0.001	0.055	0.054	0.053	0.012	0.095	0.064	-6.416***	-5.207***
NFC	0.027	0.025	0.003	0.046	0.026	0.002	0.000	-0.009	0.015	0.022	5.556***	-4.760***
RE	-0.184	-0.170	-0.325	0.008	0.258	0.290	0.254	0.102	0.469	0.240	-10.58***	-5.953***
Corporate Governance												
OWCN	0.800	0.830	0.770	0.890	0.121	0.780	0.780	0.720	0.870	0.103	1.214	-1.756*
IOWCN	0.780	0.830	0.740	0.890	0.167	0.700	0.720	0.590	0.810	0.151	3.073***	-3.019***
NIOWCN	0.020	0.000	0.000	0.020	0.062	0.080	0.000	0.000	0.100	0.120	-3.310***	-3.220***
BDOW	0.020	0.000	0.000	0.010	0.062	0.060	0.000	0.000	0.100	0.109	-1.988*	-2.101**
INDDR	0.405	0.385	0.317	0.500	0.117	0.377	0.333	0.286	0.500	0.120	1.266	-0.942
BDSZ	6.900	7.000	5.500	8.000	2.013	8.200	8.000	7.000	9.000	2.061	-3.506***	-3.067***
	Distress					Non-distress					Chi²	
CEODL coded "1"	34.69%					12.24%					0.981	
CEODL coded "0"	65.31%					87.76%						

Mean Comparison Tests

[3] Table 3 compares the means and other descriptive statistics between matched distressed and non-distressed firms. Significance of mean differences are provided by the t-test and Wilcoxon signed ranks test. Financial variables consist of profitability (PROF), net finance cost (NFC), and retained earnings (RE). Corporate governance is measured by ownership concentration (OWCN), institutional ownership concentration (IOWCN), non-institutional ownership concentration, board ownership (BDOW), independent directors (INDDR), board size (BDSZ), and CEO duality dummy (CEODL). Significant statistics are in asterisks. *** denotes significance at 1% level, ** denotes significance at 5% level, and * denotes significance at 10% level.

Table 4: Correlation Matrix[4]

Variable	FD	PROF	NFC	RE	OWCN	IOWCN	NIOWCN	BDOW	INDDR	BDSZ	CEODL
FD	1										
PROF	-0.76***	1									
NFC	0.61***	-0.22**	1								
RE	-0.90***	0.57***	-0.51***	1							
OWCN	0.13	-0.06	0.23**	-0.24**	1						
IOWCN	0.29***	-0.13	0.39***	-0.40***	0.84***	1					
NIOWCN	-0.38***	0.06	-0.39***	0.32***	-0.32***	-0.72***	1				
BDOW	-0.27**	0.19*	-0.39***	0.31***	-0.35***	-0.57***	0.62***	1			
INDDR	0.15	-0.14	0.12	-0.12	0.05	0.10	-0.10	-0.05	1		
BDSZ	-0.39***	0.22**	-0.10	0.37***	-0.11	-0.18*	0.19*	0.28***	-0.11	1	
CEODL	0.45**	-0.36***	-0.02	-0.50***	-0.26**	-0.27**	0.17	0.11	-0.31**	-0.08	1

[4] Table 4 presents the correlation coefficients between dependent and independent variables. The dependent variable is the financial distress dummy (FD). Independent variables contain profitability (PROF), net finance cost (NFC), and retained earnings (RE), ownership concentrations (OWCN), institutional ownership concentration (IOWCN), non-institutional ownership concentration (NIOWCN), board ownership (BDOW), independent directors (INDDR), board size (BDSZ), and CEO duality dummy (CEODL). Pearson's correlation coefficient measures the correlation among scale variables. Correlation between scale and nominal variables is presented as polychoric correlation coefficients. The tetrachoric correlation coefficient determines the correlation among nominal variables. Significant coefficients are in asterisks. *** denotes significance at 1% level, ** denotes significance at 5% level, and * denotes significance at 10% level.

Multivariate Test

Results of conditional logistic regression analysis are produced in Table 5. I attempted to execute model 1 in full but, it was not fitted well due to some coefficients did not converge. Therefore, Backward Stepwise (Wald) method was applied in a step-by-step process. Especially, retained earnings (RE) did not converge with profitability (PROF) and net finance cost (NFC) because of multicollinearity. Consequently, RE was dropped from model 1. Over all steps in model 1, PROF shows a significant negative impact on financial distress at the 5% level. NFC positively and significantly influences the financial distress from step 2 onwards. Independent directors (INDDR) variable is significant at 10% level only in steps 3 and 4. It illustrates a negative impact in this connection. Results of INDDR are consistent with the expected sign and the hypothesis H5. This provides some implications for the monitoring perspective of the agency theory. Moreover, it assures the firm's critical link to the external environment as per the resource dependency theory. This inverse effect of INDDR is also proven in related studies (Fich & Slezak, 2008; Thorez, 2017; Miglani et al., 2015). Since RE did not converge with PROF and NFC, it was separately regressed with governance variables in model 2. Even if none of the variables are significant in step 1, it reports the highest McFadden's Pseudo R-square (0.8855) among other models. RE displays a significant negative influence from step 2 onwards. Remarkably, RE itself alone produces an R-square of 0.8089. In model 3, institutional ownership concentration (IOWCN) and non-institutional ownership concentration (NIOWCN) were replaced instead of ownership concentration. For its every step, CEO duality (CEODL) makes a significant positive influence on financial distress at 10% level. This supports the hypothesis H4 aligning with some early studies (Darrat et al., 2016; Berger et al., 2016; Dissanayke et al., 2017). As rooted in the agency theory, the findings confirm increased agency costs with the unitary leadership structure. This indicates that the duality condition may hamper the expected monitoring role of boards. Consequently, the CEO's free-riding could take place. From step 2 onwards, the effect of institutional ownership concentration (IOWCN) is also significantly positive at the 5% level. This accepts hypothesis H2b. Mathew et al. (2016) are also in the same standing with regards to total risk and asset return risk. The expropriation hypothesis ensures the validity of this finding. Where large institutional investors seek to maximize their personal benefits rather than corporate's value creation. Surprisingly, PROF, CEODL, and IOWCN significantly explain financial distress status in step 5. However, this model fails to support NIOWCN owing to multicollinearity between IOWCN and NIOWCN. Therefore, model 4 was adopted to separately show the effect of NIOWCN. Results reveal that NIOWCN negatively affect financial distress in step 3 at 10% level. This evidences the effectiveness of the monitoring function of non-institutional large shareholders. Nevertheless, NIOWCN along with PROF, NFC, and INDDR significantly explain the variation of financial distress (R^2 = 0.8578).

Ownership concentration (OWCN) affect financial distress positively at the 5% significant level (see Model 5). Regardless of the shareholder type, OWCN makes this positive influence. This provides enough evidence to accept hypothesis H1. Referring to the

expropriation hypothesis, large shareholders' self-interested behavior is confirmed. Especially, controlling shareholders may expropriate minorities' interests diminishing firm value. However, Fernando et al. (2019) establish that ownership variables do not better predict financial distress in Sri Lanka. Lee & Yeh (2004) observe a positive association between controlling ownership and the risk of financial distress. The other empiricists (Lepore et al., 2017; Busta et al., 2014; Mudambi & Nicosia, 1998) further ensure a decline of different performance measures with concentrated ownership. The lapses of existing laws for protecting the rights of minorities could also be contributory. Moreover, large shareholders' activism may have exceeded its expected level. Model 5 also confirms the convergence of interest hypothesis proposed by Jensen & Meckling (1976). Accordingly, the significant inverse impact of board ownership (BDOW) is an indication of the convergence of interest between management and shareholders. It validates hypothesis H3. Findings of other similar studies (De Miguel et al., 2004; Morck et al., 1988; Manzaneque, Priego, & Merino, 2016; Mueller & Spitz-Oener, 2006; Parker et al., 2002; Fich & Slezak, 2008) are also in line with the convergence of interest hypothesis. Effect of board size on financial distress is also significantly negative at the 10% level. This confirms the acceptance of hypothesis H6a. Large boards are encouraged by the resource dependency theory. It assumes that larger boards create firms with more external critical links. In favor of larger boards, findings are consistent in the literature (Darrat et al., 2016; Armeanu et al., 2017; Wilson et al., 2013; Platt & Platt, 2012). Board size alongside PROF, OWCN, BDOW, and CEODL forms a new model in step 2. All these variables make a significant joint impact on financial distress ($R^2 = 0.7517$). Model 6 also presents a new combination of variables. While all variables are significant, IOWCN and CEODL make a significant positive effect at the 1% level.

Robustness Check and Further Analysis

Robustness Test 1

The analysis was further deepened to test the robustness of the results. Thus, table 6 is related to robustness test 1. It provides results of conditional logistic regressions for the matched sample. The dependent variable is the same but models include some new independent variables. In model 1 of Panel A, ownership concentration (OWCN) was replaced by the Herfindahl index for ownership concentration (HOWCN). It is approximated by the total sum of the squared fraction of shares held by every top ten shareholders. At the 5% level, HOWCN makes a significant positive impact on financial distress. Li et al. (2008) also applied the Herfindahl index to measure the ownership concentration in China. They have found that ownership concentration negatively affects performance. Institutional ownership concentration (IOWCN) and institutional ownership (INTOW) appear together in model 2. In its second step, both variables are significant at 5% and 10% levels respectively. However, INTOW reflects a negative effect on financial distress. This suggests that institutional investors tend to execute their monitoring function. When ownership is concentrated on institutions, expropriation would take place. Models 3 and 4 newly introduce blockholder ownership (BLKOW) and top-5 ownership (TOPOW) to further

capture the effect of concentrated ownership of firms. A blockholder is defined as a shareholder who owns 10% or more shares. Literature (Lajili & Z´eghal, 2010; Miglani et al., 2015; Elloumi & Gueyi´e, 2001; Parker et al., 2002) also discusses the effect of BLKOW on organizational performance. TOPOW is related to the total proportion of shares held by the top five shareholders. Both the variables positively influence at 5% significant level. Board ownership (BDOW) is substituted by non-executive director ownership (NEDOW) in model 1 of panel B. Similarly, it also shows an inverse effect on financial distress. The proportion of non-executive directors (NED) was introduced for model 2 instead of independent directors. However, the model generates a positive effect for NED. This implies that the expected monitoring role of NEDs would be problematic. Jensen (1993) underlines that board effectiveness cannot be maintained when the board size exceeds seven or eight members. For Lipton & Lorsch (1992), eight or nine directors are more preferable. To satisfy both views, a dummy variable for the board with 5-9 members (BS5T9) was included in model 3. Thus, BS5T9 constitutes a significant negative effect on financial distress in step 1. Eventually, BS5T9 with four significant variables (i.e., PROF, OWCN, BDOW, and CEODL) forms a new model with an R-square of 0.7993. Two financial variables such as leverage (LEV) and capital structure (CAPST) were newly brought into models 4 and 5. Amongst, LEV shows a highly significant positive contribution to financial distress. LEV measures the degree of financial risk where total liabilities are scaled by total equity.

Robustness Test 2

Regardless of the matched-sample, robustness test 2 discusses the causal effect of the same independent variables for the full sample. Table 7 presents the panel logistic regressions under different model specifications. The standard errors of the fitted models are adjusted for clusters. From models 1-6, both profitability (PROF) and net finance cost (NFC) show a significant impact on financial distress at the 5% level. However, their direction is opposite to each other. Model 1 is the basic model of the study but only board ownership (BDOW) is significant. This negative impact of BDOW prevails in several models. Consisting of the matched-paired results, non-institutional ownership concentration (NIOWCN) negatively influence at a 10% significant level. On the contrary, ownership concentrated on blockholder (BLKOW) indicates a positive significant value (see Model 3). Dispersed ownership among top-five shareholders is decisive in Model 4. It negatively affect at 5% level. Leverage (LEV) and capital structure (CAPST) are significantly contributory to Models 6 and 7. While the impact of LEV is positive, it is negative for CAPST. This indicates that short-term borrowings beget more financial burden. This is caused by higher borrowing costs in the short term. Retained earnings (RE) was replaced in model 7 instead of PROF. It shows a significant negative value at the 1% level. In every model, coefficients of financial years 2016 and 2017 bare significant positives values.

Table 5: Conditional Logistic Regressions[5]

Model 1	PROF	NFC	RE	OWCN	IOWCN	NIOWCN	BDOW	INDDR	BDSZ	CEODL	Pseudo R²
Step 1	-46.83**	109.0	-	12.90	-	-	-10.31	-18.03	-0.150	1.234	0.8230
2	-46.99**	117.8*	-	11.60	-	-	-8.389	-17.76	-	0.952	0.8202
3	-48.30**	131.9**	-	10.44	-	-	-7.747	-19.76*	-	-	0.8120
4	-48.56**	126.8**	-	9.972	-	-	-	-18.49*	-	-	0.8055
5	-28.46**	73.99*	-	-	-	-	-	-	0.043	-	0.7127
Model 2											
Step 1	-	-	-37.60	13.82	-	-	-	-31.90	-1.266	-	0.8855
2	-	-	-26.82**	-	-	-	-	-20.29	-0.725	-	0.8743
3	-	-	-18.65**	-	-	-	-	-9.956	-	-	0.8407
4	-	-	-12.36***	-	-	-	-	-	-	-	0.8089
Model 3											
Step 1	-42.71**	-	-	-	14.62	-12.75	-12.65	-4.519	-0.340	3.020*	0.8292
2	-44.62**	-	-	-	17.98**	-	-17.81	-4.840	-0.427	3.232*	0.8242
3	-39.67**	-	-	-	15.94**	-	-15.40	-	-0.319	3.029*	0.8152
4	-43.67***	-	-	-	16.05**	-	-14.21	-	-	2.881*	0.7930
5	-44.96***	-	-	-	15.78**	-	-	-	-	2.430*	0.7741
Model 4											
Step 1	-65.79	386.9	-	-	14.20	-59.60	-	-54.86	-	-1.100	0.8799
2	-52.78*	264.6*	-	-	11.39	-45.06	-	-37.93	-	-	0.8780
3	-44.46**	239.8*	-	-	-	-49.75*	-	-33.39*	-	-	0.8578
Model 5											
Step 1	-38.14**	-	-	19.53**	-	-	-22.31*	-3.039	-0.636*	3.373**	0.7564
2	-34.84**	-	-	17.83**	-	-	-20.51*	-	-0.577*	3.189**	0.7517
Model 6											
Step 1	-	-	-	-	8.987***	-	-10.48*	-	-0.470**	2.917***	0.4756

[5] This table presents conditional logistic regressions. Models are fitted on Backward Stepwise (Wald) method where different variable combinations generate new models. The dependent variable is financial distress dummy (FD). Independent variables are profitability (PROF), net finance cost (NFC), retained earnings (RE), ownership concentration (OWCN), institutional ownership concentration (IOWCN), non-institutional ownership concentration (NIOWCN), board ownership (BDOW), independent directors (INDDR), board size (BDSZ), and CEO duality dummy (CEODL). Significant coefficients are in asterisks.

Table 6: Conditional Logistic Regressions (Robustness Test 1)[6]

Panel A -   Conditional Logistic Regressions

Model 1	PROF	NFC	IOWCN	HOWCN	INTOW	BLKOW	TOPOW	BDOW	INDDR	BDSZ	CEODL	Pseudo R^2
Step 1	-30.86***	-	-	6.779**	-	-	-	-	0.176	-	2.688**	0.6597
2	-30.94***	-	-	6.810**	-	-	-	-	-	-	2.691**	0.6597
Model 2												
Step 1	-73.28**	-	39.42**	-	-30.34	-	-	-	-	-	0.9001	0.8285
2	-75.87**	-	42.67**	-	-35.55*	-	-	-	-	-	-	0.8207
Model 3												
Step 1	-37.38***	69.09**	-	-	-	8.369**	-	-	-	-	-	0.7788
Model 4												
Step 1	-29.06***	-	-	-	-	-	10.84**	-	-	-	1.400	0.6411
2	-31.61***	-	-	-	-	-	8.692**	-	-	-	-	0.6046

[6] Table 6 consists of two panels; Panel A and B. Both provide results of conditional logistic regression for different variable combinations. McFadden's Pseudo R-square is used as the model selection criteria. The dependent variable is the financial distress dummy (FD). Independent variables in the Panel A comprise profitability (PROF), net finance cost (NFC), institutional ownership concentration (IOWCN), Herfindahl index for ownership concentration (HOWCN), institutional ownership (INTOW), blockholder ownership (BLKOW), top-5 ownership (TOPOW), board ownership (BDOW), independent directors (INDDR), board size (BDSZ), and CEO duality dummy (CEODL). Panel B contains some new variables such as leverage (LEV), capital structure (CAPST), ownership concentration (OWCN), non-executive director ownership (NEDOW), non-executive directors (NED), and boards with 5-9 members dummy (BS5T9). Significant coefficients are in asterisks. *** denotes significance at 1% level, ** denotes significance at 5% level, and * denotes significance at 10% level.

Panel B - Conditional Logistic Regressions

Model 1	PROF	LEV	CAPST	OWCN	BDOW	NEDOW	INDRR	NED	BDSZ	BS5T9	CEODL	Pseudo R^2
Step 1	-31.29***	-	-	14.89**	-	-40.11*	-	-	-	-	1.750	0.6786
2	-31.35***	-	-	10.84**	-	-35.07*	-	-	-	-	-	0.6338
Model 2												
Step 1	-30.45***	-	-	-	-	-	-	4.382**	-	-	1.437	0.5994
2	-29.37***	-	-	-	-	-	-	3.594*	-	-	-	0.5619
Model 3												
Step 1	-82.50**	-	-	31.03*	-35.26*	-	9.106	-	-	-5.288*	6.919*	0.7993
2	-79.61**	-	-	28.70*	-31.15*	-	-	-	-	-5.095*	5.685	0.7838
3	-42.90***	-	-	10.17**	-12.36*	-	-	-	-	-1.976	-	0.6549
4	-32.18***	-	-	8.540**	-8.551	-	-	-	-	-	-	0.6117
5	-32.04***	-	-	7.730**	-8.551	-	-	-	-	-	-	0.5782
Model 4												
Step 1	-	1.572**	-	6.686*	-6.759	-	-	-	-0.422**	-	1.932**	0.5757
2	-	1.794***	-	5.528	-	-	-	-	-0.398**	-	1.587*	0.5506
3	-	1.936***	-	-	-	-	-	-	-0.427**	-	1.119	0.5153
4	-	1.926***	-	-	-	-	-	-	-0.399**	-	-	0.4715
Model 5												
Step 1	-	-	1.719*	8.172**	-9.973*	-	-	-	-0.442**	-	2.625***	0.4881

Table 7: Panel Logistic Regressions[7]

Panel Logistic Regressions: Standard Errors Adjusted for Clusters

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PROF	-18.84***	-19.27***	-19.01***	-18.51***	-18.78***	-19.07***	-
NFC	30.32***	32.71***	30.44***	30.23***	31.08***	34.06***	19.42***
RE	-	-	-	-	-	-	-3.664***
LEV	-	-	-	-	-	0.043*	0.101*
CAPST	-	-	-	-	-	-0.388*	-0.677**
OWCN	1.213	-	-	-	1.267	1.196	0.197
NIOWCN	-	-3.348*	-	-	-	-	-
BLKOW	-	-	1.654*	-	-	-	-
TOPOW	-	-	-	-0.001**	-	-	-
BDOW	-1.900*	1.685	-1.804*	-1.852*	-2.221**	-1.971	-1.346
INDDR	-0.020	-0.014	0.032	-0.076	-	0.097	-0.099
NED	-	-	-	-	-1.146	-	-
LNBDSZ	0.280	0.186	0.374	0.232	0.320	0.260	0.403
CEODL	0.113	0.117	0.206	0.044	-0.023	0.130	0.052
Intercept	-4.685	-3.422	-5.096	-3.597	-4.025	-4.602	-4.042
Year dummy	yes	yes	yes	yes	yes	yes	yes
Pseudo R^2	0.3780	0.3846	0.3832	0.3762	0.3820	0.3830	0.2853
Prob> Chi^2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Groups	205	205	205	205	205	205	205
Obs.	1230	1230	1230	1230	1230	1230	1230

[7] Table 7 illustrates panel logistic regressions for the full sample. The standard errors of fitted models are adjusted for clusters. The dependent variable is financial distress dummy (FD). Independent variables are profitability (PROF), net finance cost (NFC), retained earnings (RE), leverage (LEV), capital structure (CAPST), ownership concentration (OWCN), non-institutional ownership concentration (NIOWCN), blockholder ownership (BLKOW), top-five ownership (TOPOW), board ownership (BDOW), independent directors (INDDR), non-executive directors (NED), log of board size (LNBDSZ), and CEO duality dummy (CEODL). Significant coefficients are in asterisks. *** denotes significance at 1% level, ** denotes significance at 5% level, and * denotes significance at 10% level.

Table 8: Panel Logistic and Linear Regressions[8]

				Dependent Variable				
		FDROE				Z Score		
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PROF	-0.10	-0.09	-0.08	-0.08	-10.6***	-12.9***	-3.04	-6.42
NFC	3.50	3.37	3.34	3.05	-28.9	-27.8	71.7	56.7
LEV	-	-	-	0.06*	-4.02**	-4.14**	-4.244**	-4.25***
CAPST	-	0.02**	0.02**	-0.05	6.98***	7.27***	7.71***	7.77***
OWCN	0.34	0.30	-	-	-	-	-	-
NIOWCN	-	-	-	-	-69.9**	-	-168	-
HOWCN	-	-	-	-	-	66.9**	-	146*
TOPOW	-	-	-0.01***	-0.01***	-	-	-	-
BDOW	-0.82	-0.81	-0.82	-0.84	56.7	3.12	213	99.5
INDDR	0.03	0.03	0.03	0.12	7.93	4.98	-2.69	-16.9
LNBDSZ	-1.08***	-1.08***	-1.09***	-1.09***	24.4	29.2	90.0	96.2
CEODL	-0.13	-0.12	-0.13	-0.13	9.27	11.5	24.6	23.4
Intercept	0.42	0.45	0.71	0.64	-5.49	-42.3	-140	-209
Year dummy	yes	yes	yes	yes	yes	yes	yes	yes
S.E. Adj.	yes	yes	yes	yes	no	no	yes	yes
PCSE	no	no	no	no	yes	yes	no	no
R^2	-	-	-	-	0.0267	0.0292	0.0334	0.035
Pseudo R^2	0.0276	0.0290	0.0292	0.0318	-	-	-	-
Prob> Chi^2	0.0284	0.0085	0.0000	0.0000	0.0000	0.0000	0.0000	0.00
Groups	205	205	205	205	205	205	205	205
Obs.	1230	1230	1230	1230	1230	1230	1230	1230

[8] Table 8 contains results for the full sample. Dependent variables are ROE-based financial distress dummy (FDROE) and Altman's Z score. Independent variables are profitability (PROF), net finance cost (NFC), leverage (LEV), capital structure (CAPST), ownership concentration (OWCN), non-institutional ownership concentration (NIOWCN), Herfindahl index for ownership concentration (HOWCN), top-five ownership (TOPOW), board ownership (BDOW), independent directors (INDDR), log of board size (LNBDSZ), and CEO duality (CEODL). Models 1-4 are logistic regressions on FDROE. Models 5-6 are panels corrected standard errors (PCSEs). Models 7-8 are panel fixed-effect regressions.

Robustness Test 3

Further results for the full sample are discussed under robustness test 3. Table 8 brings panel logistic and linear regression results for two different dependent variables. They comprise return on equity-based financial distress dummy (FDROE) and the Altman's Z score. FDROE is applied, when the return on equity (ROE) is negative. Variables are regressed against FDROE in Models 1-4. Outputs are generated as logistic regressions where standard errors are adjusted for clusters. Models 5-8 are related to Altman's Z score. However, panels corrected standard errors (PCSEs) were applied for Models 5 and 6. The rest appears as panel liner regressions (fixed-effect) which are subject to standard errors adjusted for clusters. Over the first four models, board size (LNBDSE) seems to be influential financial distress negatively. This is only the significant variable in the basic model of the study (Model 1). Capital structure was introduced for models 2 and 3 since existing financial variables are insignificant. Its causal effect is positive at the 5% significant level. Leverage (LEV) in model 4 is also significantly positive. The effect of top-5 ownership is negative significantly at 1% level in models 3 and 4. This further ensures the applicability of dispersed ownership within top-5 shareholdings. The financial years 2016 and 2017 further make financial troubles for businesses.

Conclusions

The current study validates some theoretical underpinnings of corporate governance. It found some contextually unique results which update the extant literature. Western and developed contexts have extensively studied this phenomenon. Research work in the east and south-east regions is also contributory. Nevertheless, an overall analysis of the governance issue is still lacking. Its new avenues are still open to be explored. Representing the south Asian region, the Sri Lankan context was the study's focus. This study setting has some attractions. Its firms are operating in an unstable political and economic milieu. Sudden deaths of well-performed firms were also reported recently. Moreover, the corporate governance mechanism is likely to be hampered due to several stuffs. Family members' representation in boards with equity ownership, and institutional ownership concentration within the same business conglomerates. Whereas, holding board chair and CEO positions by family members or by the same person, board representation by older people, dynamic boards, and inappropriate board composition were also observable. These create agency problems in a multi-factor process. Thus, it was assumed that increased agency costs would hinder the financial condition of firms. Consistently, the study measured the impact of corporate governance mechanisms on financial distress likelihood in the Sri Lankan context.

The study's phenomenon was examined in the matched-pairs research design. Its preliminary investigation revealed that financially distressed and non-distressed firms vary each other in terms of ownership of large shareholders, ownership of large institutional shareholders, ownership of large non-institutional shareholders, number of board

members, and directors' share ownership. Whereas, it was observed the differences in financial factors such as profitability, net finance cost, and retained earnings. In the matched-pairs setting, incurring financial distress is less possible with large boards and independent boards. These are the encouragements of the resource dependency theory. Boards with a large number and many independent non-executive directors expose more to the external environment. This seems to be subject to 5-9 members on an average board. Nevertheless, independent boards satisfy the monitoring perspective of the agency theory. This monitoring seems to be executed by the non-institutional large shareholders as well. Overall, large shareholders, however, reflect a self-interested behavior leading firms into financial distress. This is likely to be augmented by the expropriation of large institutional shareholders. This expropriation can also be attributable to blockholders and top-five shareholders. Regardless of the concentration, total institutional ownership makes a negative impact on financial distress. Expropriation can also occur with the unitary leadership structure. The lack of monitoring CEO's dual roles results in financial instability. Conversely, increased equity ownership of directors avoids financial troubles. It indicates the convergence of interest between managers and shareholders. Nonexecutive director ownership also aligns with the convergence of interest hypothesis. Results of the full sample are not robust compared to matched-pairs analysis. Occasionally, it provides consistent findings. The directors' ownership further converges the interest between management and shareholders. Besides, the board size, non-institutional ownership concentration, and dispersed ownership among top-five owners negatively affect adverse financial status. However, the expropriation of the large blockholders remains stable.

Overall, our study provides policy implications in several ways. First, this study focused on an emerging economy in South Asia where such a comprehensive analysis is still lacking. Second, the full sample comprised nearly 85% of total non-financial quoted firms. Thus, this validates the generalizability of results to the entire non-financial sector in Sri Lanka. Finally, ownership of institutional shareholders enhances corporate financial distress. This was contradictory to our general expectations. When measuring the institutional ownership concentration, it included the controlling ownership as well. In many cases, such a controlling firm is one of the firms within the same business group. The majority of them were private companies whose key business activity is even unclear. Whereas, some parent companies were from the same industry. Thereby, industry-specific risk cannot be diversified. It is also worthwhile to highlight some inherent limitations of the study. Firstly, firm-year observations of the full sample were filtered in the match-pairs process which generated fewer observations. Second, full models could not be executed at once because some of the coefficients did not converge. Next, the endogeneity problem of explanatory variables could not be examined due to the lack of a sample period. Eventually, an in-depth analysis is required to investigate the role of large institutional shareholders in the firm setting.

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