

## Corporate governance and capital structure in developing countries: a case study of Bangladesh

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**Corporate governance and capital structure in developing countries: a case study of Bangladesh**

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For Peer Review

# Corporate governance and capital structure in developing countries: a case study of Bangladesh

## 1. Introduction

The concept of corporate governance appears to be closely related with the financing pattern<sup>1</sup> of a firm. While many studies investigate the influence of corporate governance on financial performance, the empirical relationship between corporate governance and the firm's capital structure has largely been unexplored. Several studies (for example, Du and Dai 2005; Kumar 2005) have analysed the relationship between corporate governance and debt finance, but most studies consider individual governance issues, such as ownership structure, rather than overall firm-level governance practices. More importantly, there has not been any study in the context of Bangladesh<sup>2</sup>. Even though debt financing is considered as an important corporate governance mechanism in mitigating the agency problems between shareholders and managers (Harris and Raviv 1991), it is important to analyse the pattern of relationship between debt finance and the agency costs incurred between controlling and minority shareholders. In the context of this connection, the paper examines whether firm-level corporate governance has an influence on the firm's capital structure pattern in general, and debt financing in particular<sup>3</sup>.

The Ordinary Least Square (OLS) regression framework uses a questionnaire-based Corporate Governance Index (CGI) to investigate the effect of corporate governance quality on capital structure of 98 non-financial listed firms in Bangladesh. The paper is organised as follows: *section 2* reviews available literature and *section 3* presents the research question and empirical model. *Section 4* provides the empirical analysis

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<sup>1</sup> Shleifer and Vishny (1997:737) define corporate governance as 'the ways in which suppliers of finance to corporations assure themselves in getting a return on their investment'.

<sup>2</sup> Chowdhury (2004) investigates the determinants of debt finance, but does not take into account the governance issues.

<sup>3</sup> Note that capital structure, leverage and debt finance are used interchangeably throughout the paper.

(including the data), the univariate analysis and the regression results. *Section 5* analyses and interprets the study results and *section 6* concludes the paper.

## 2. Literature Review

The seminal works Fama and Miller (1972) and Jensen and Meckling (1976) are widely credited with put forwarding the idea of agency theory based explanation of capital structure. Agency theory suggests that conflict of interests causes agency costs, which in turn determine the firm's capital structure decisions (Harris and Raviv 1991). While Jensen and Meckling (1976) refer to two types of agency conflict in a firm (between the shareholders and managers and the shareholders and creditors), Shleifer and Vishny (1997) suggest that a conflict of interests can occur between large controlling block holders and minority shareholders. It is argued that large investors can cause enormous agency problems through direct or indirect expropriation of minority shareholders as well as employee rights.

Corporate debt policy is commonly regarded as an important corporate governance mechanism in mitigating the agency conflicts between shareholders and managers. Debt finance can resolve agency problems through reducing free cash flow and increasing the probability of bankruptcy risks and job losses<sup>4</sup>. Large shareholders can also mitigate agency problems, since they have the incentive to collect information and monitor management (Jensen and Meckling 1976; Shleifer and Vishny 1997).

According to another line of explanation within agency theory, improved corporate governance and associated strong shareholder rights will reduce agency costs and improve the confidence of investors in a firm's future cash flow (Gompers et al. 2003), and this in turn reduces the cost of equity capital to the firm (Drobetz et al. 2004). This

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<sup>4</sup> Jensen (1986) argues that the obligation of paying debt along with its interest reduces free cash flow and thus managers refrain from using the free cash for non-optimal activities. Grossman and Hart (1982, cited in Harris and Raviv 1991) also observe that debt finance increases the probability of costly bankruptcy and subsequent job loss, and thus encourages managers to work harder, consume fewer perquisites and make better investment decisions.

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3 eventually enhances the firm's ability to gain access to equity finance<sup>5</sup>, leading to a  
4 decrease in the firm's dependence on (or preference for) debt finance. Alternatively,  
5 controlling owners of poorly governed firms are likely to prefer debt in order to meet  
6 financing needs, whilst retaining absolute ownership and control over the firm.  
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12 Apart from corporate governance, several other firm-specific factors tend to be important  
13 determinants of the firm's financing pattern. Whilst Fama and Jensen (1983, cited in Suto  
14 2003) argue that a large the ability of a firm to disclose greater amounts of information  
15 will cause lower agency costs-of-debt (e.g. positive effect on debt finance), lower  
16 information asymmetry between the insiders and outside shareholders of a large firm  
17 might have a negative effect on leverage due to the lower agency cost of equity financing  
18 (Rajan and Zingales 1995). Suto (2003) argues that firm size is more likely to exert a  
19 positive influence on debt finance in developing countries as well as in bank-based  
20 financial systems, since default information is less readily available in these economies.  
21 Kumar (2005) and Du and Dai (2005) also suggest that the relationship between firm size  
22 and leverage tends to be positive, mainly due to the advantage economies of scale have in  
23 their ability to issue long-term debt, their stronger negotiating power with the lenders and  
24 the opportunity for diversification and associated lower possibility of default risk.  
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38 According to the pecking order theory of corporate finance<sup>6</sup>, profitability tends to be  
39 inversely related with debt finance. This is because perceived conflict of interest between  
40 the insiders and outside providers of funds drives a firm to favour retained earnings over  
41 external finance (Suto 2003). Profitability can, however, be positively associated with the  
42 debt finance, since creditors are likely to lend more to the firms with higher cash flows  
43 (Rajan and Zingales 1995). Myers (1977) and Rozeff (1982) also regard growth  
44 opportunity as another determinant of capital structure. A firm with higher growth  
45 opportunities is less likely to rely on debt finance because of the potential for bankruptcy  
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54 <sup>5</sup> Several studies (e.g. LLSV 1997; Shleifer and Vishny 1997) suggest that corporate governance and associated better  
55 shareholder and creditor rights enhance the firm's ability to gain access to external finance.

56 <sup>6</sup> According to the pecking order theory of corporate finance, retained earnings tend to be the most favoured forms of a  
57 firm's financing, followed by debt and then equity finance (Singh 2003).  
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and financial distress risks (Du and Dai 2005). Nonetheless, the reluctance of controlling shareholders to forgo future corporate earnings, together with an insufficient cash flow to support the increased cost of raising equity funds, might drive growing firms to rely on debt rather than equity. Moreover, Suto (2003) and Du and Dai (2005) suggest that non-debt tax deductions (e.g. depreciation and investment tax credits) are important substitutes for tax shield benefits of debt finance. They also suggest that asset tangibility (e.g. fixed assets) serves as important collateral in the debt contract and reduces the default risks of the lender, leading to higher debt finance.

### 3. Hypothesis and Model

This paper uses the agency theory based explanation of the capital structure of a firm. It investigates whether firm-level corporate governance has an influence on corporate debt finance in a developing economy like Bangladesh. More explicitly, the paper addresses the following hypothesis:

*H<sub>0</sub>: Corporate governance quality is inversely associated with the debt finance*

The study follows, among others, Jiraporn and Gleason (2005), Singh and Faircloth (2005) and Kumar (2005) in using two alternative measures of capital structure, such as the ratio of total debt to total assets (denoted by debt-to-assets) and long term debt ratio (e.g. the ratio of long term debt to long term debt plus shareholder equity). Taking these debt financing measures as dependent variables, the following OSL regression model is developed:

$$\text{Capital Structure } (\gamma) = \alpha + \beta_1 (\text{CGI}) + \beta_2 (\text{Concentration}) + \beta_3 (\text{Firm size}) + \beta_4 (\text{Profitability}) + \beta_5 (\text{Growth}) + \beta_6 (\text{Tangibility}) + \beta_7 (\text{Non-debt tax shield}) + \beta_8 (\text{Industry dummies}) + \varepsilon \dots \dots \dots (i)$$

This cross-sectional model incorporates a firm-level Corporate Governance Index (denoted as CGI) as the main test variable, with higher CGI specifying better governance

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quality of a firm. Ownership concentration (e.g. measured as percentage of ownership by the top 10 shareholders) is also used as an additional governance variable, not been incorporated in the index. As mentioned above, the CGI and concentration variables are predicted to have negative and positive signs, respectively.

Based on the review of literature on the determinants of capital structure, several firm characteristics are used as control variables. These include firm size (measured as the natural logarithm of assets), profitability or return on assets (the ratio of net income after taxes to total assets), growth (a three- or five-year average asset growth rate), asset tangibility (fixed assets-to-total assets), non-debt tax shield (the ratio of depreciation and amortisation to total assets) and the industry dummies based on 4-digit SIC codes.

One important caveat of the study is that it is unable to address the issues of endogeneity and reverse causality<sup>7</sup>, primarily because of the absence of time variation in governance and financial data, along with the problem of finding appropriate instrumental variable for the simultaneous regression approach. This remains a shortcoming in the empirical study. Nevertheless, This problem can be mitigated by incorporating several firm specific characteristics as control variables, including the industry dummies<sup>8</sup>.

#### 4. Empirical Analysis

This section explains the data including the CGI, followed by a summary statistics and univariate analysis, and the regression results.

##### 4.1. The Data

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<sup>7</sup> Black et al. (2005) explain two different perspectives of firm level endogeneity: reverse causality and signaling effect. Reverse causality refers to the notion that firms with better financial performance prefer to adopt best practices of governance rather than vice-versa, whereas signaling effect explains that firms adopt better governance practices to signal high quality.

<sup>8</sup> Among others, Klapper and Love (2004) and Drobetz et al. (2004) argue that adding appropriate control variables can be one way to mitigate the problem of omitted variables, endogeneity or reverse causality.



The study uses corporate governance data based on a questionnaire survey carried out in 2004-2005. Amongst the 186 non-financial listed firms of the prime exchange of Bangladesh, the Dhaka Stock Exchange (DSE), 101 firms responded to the survey, with the response rate being around 55 percent. The sample firms capture nearly 96 per cent of the total market capitalisation (MC) of all non-financial firms, and 45 percent MC of the DSE<sup>9</sup>. The financial data on debt finance and other firm characteristics were collected from the annual reports of the sample firms, together with the monthly reviews of the DSE.

### *Corporate Governance Index*

In order to quantify the firm-specific governance quality, a Corporate Governance Index (CGI) is constructed, consisting of five individual governance components<sup>10</sup>; namely, the ownership pattern (sub-index 1), shareholders' rights (sub-index 2), independence and responsibilities of the board and management (sub-index 3), financial reporting and disclosures (sub-index 4) and responsibility towards the stakeholders (sub-index 5). The method follows several studies (such as Black et al. 2003; Klapper and Love 2002) to construct a CGI, although many of the governance elements have been modified in order to make the index compatible with the legal and regulatory issues in Bangladesh<sup>11</sup>.

\*\*\*Insert Table 1 about here\*\*\*

The distribution of CGI of 101 non-financial firms in Bangladesh (presented in *table 1*) reveals that the mean (median) value of the CGI is 40.84 (41.67), and the standard

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<sup>9</sup> The financial sector appears to dominate the market behavior of the DSE, with nearly 52 per cent (including banking firms with 47 per cent) of the total market capitalisation, and 53 per cent of the total turnover (DSE Review Dec. 2004).

<sup>10</sup> A sub-index is constructed by summing up the values of all variables (between 1 and 0, with 1 being the compliance with better governance, and 0 otherwise) within that index, which is divided by the number of 'non-missing' variables. The ratio is then multiplied by 20 to have the sub-index value between 0 and 20. The overall CGI is finally constructed by adding up the values of all five sub-indices, and it carries a value between 0 and 100, with higher index scores denoting the better governed firms.

<sup>11</sup> Note that the firm-specific scoring of the corporate governance practices in Bangladesh might not be comparable to international governance ratings. Given the persistent inefficiency in the legal and enforcement structures, the study is intended to measure the relative voluntary activism and/or legal compliance of the firm in corporate governance matters.

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3 deviation is 21.23. The standard deviation of the CGI is relatively higher, implying that  
4 the governance scores of many firms do not seem to be closer to the average governance  
5 index. This distribution is likely to be resulted from a widespread difference in  
6 governance qualities among the sample firms in various categories (such as foreign vs.  
7 local). Even so, nearly 50 percent of the sample firms appear to have CGI between 33 and  
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19 The correlation matrix of the sample firm presented in *table 2* shows that all correlation  
20 coefficients amongst the CGI and its five sub-indices are positive, and all are statistically  
21 significant. Even though many individual elements of the sub-indices have been  
22 eliminated because of their perceived substitution or overlapping responses, the  
23 correlation coefficients among some sub-indices still remain reasonably high. This is  
24 likely to be because firms with better governance quality become visible by  
25 demonstrating their superiority in almost all categories that constitute the sub-indices.  
26 Moreover, the adoption of better practices in all governance areas appears to be  
27 considered as complementary by some foreign and local reputed firms.  
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#### 38 **4.2. Summary Statistics and Univariate Analysis**

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41 This sub-section describes the capital structure pattern of the non-financial firms in  
42 Bangladesh, alongside the univariate relationships between corporate governance  
43 variables and several alternative measures of debt finance.  
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49 \*\*\*Insert Table 3 about here\*\*\*  
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52 Column 1 of *table 3* shows that the mean values of debt-asset ratio (Lvg.-1) and debt-  
53 equity ratio (Lvg.-2) are 0.70 and 1.93, respectively, implying that the sample firms have  
54 higher proportion of debt in relation to equity. Altogether, it is evidenced that the non-  
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3 financial firms in Bangladesh tend to have high degree of reliance on short-term bank  
4 debt rather than equity finance or long-term debt.  
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9 Following Gompers et al., (2003), governance scores are used to construct two extreme  
10 portfolios such as 'repressive portfolio' (i.e. firms with poor governance quality, with  
11 CGI < 35) and 'moderate portfolio' (i.e. better governed firms, with CGI > 48). Both  
12 portfolios represent roughly the upper (33 firms) and lower (34 firms) third of the sample.  
13 Irrespective of debt financing measures, poorly governed (e.g. repressive portfolio) firms  
14 are found to have reasonably higher financial leverage than the firms in moderate  
15 portfolio, and the differences in Lvg.-1 (e.g. debt-to-assets) and Lvg.-3 (ratio long-term  
16 debt to long-term debt plus shareholders equity) are statistically significant.  
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26 *Table 3* also reveals the degree of univariate relationships among several measures of  
27 debt finance and corporate governance indices. Columns 5 through 10 depict that all four  
28 debt financing measures are negatively correlated with the CGI and each of the five  
29 governance sub-indices. Most of the governance indices are also found to have  
30 statistically significant relationships with debt-to-assets and debt-to-equity.  
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### 37 **4.3. The Regression Results**

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41 This sub-section presents the empirical results of the OLS regression model of the  
42 relationship between corporate governance and debt finance. Column 1 of *table 4* depicts  
43 the regression result of debt-to-assets (e.g. the ratio of total debt to total assets) with CGI  
44 as the main explanatory variable, coupled with several control variables such as firm size,  
45 profitability, historical growth, asset tangibility and non-debt tax shield. It is shown that  
46 the regression coefficient of the CGI is significant and negative as expected. Both firm  
47 size and growth proxies are found to have statistically significant positive coefficients.  
48 Moreover, the regression sign of firm profitability is negative and significant.  
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5 In column 2, the new ownership concentration variable enters with the expected positive  
6 sign, which is statistically significant. The regression signs of the other explanatory  
7 variables remain identical, with only CGI, firm size, profitability and growth having  
8 significant results. The industry-adjusted results in column 3 reveal that the regression  
9 signs and the levels of significance of all explanatory variables remain unchanged<sup>12</sup>.  
10 Replacing debt-to-assets with long term debt ratio (e.g. the ratio of long term debt to long  
11 term debt plus shareholders' equity) as the dependent variable, the similar specification is  
12 estimated. Column 4 of *table 4* shows that the regression of long term debt ratio has not  
13 brought any change in the regression signs. However, only the CGI, firm size and  
14 profitability remain statistically significant.  
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25 The adjusted  $R^2$  value of the regression of long-term debt ratio is around 0.720, which is  
26 increased to around 0.850 for the specification of debt-to-assets. The  $R^2$  values suggest  
27 that the model's explanatory power in estimating the variability in debt finance is  
28 reasonably high, which provides a better overall fit for the population. In addition, higher  
29 level of significance of the F-statistics suggests an improved explanatory power of the  
30 regressor variables.  
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### 38 **5. Analysis and Interpretation of the Results**

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42 The study results appear to corroborate the prediction of the agency theory that poor  
43 corporate governance and associated weak shareholder rights are linked with higher debt  
44 finance. The study thus supports the findings of Jiraporn and Gleason (2005), whereby  
45 firms with poor shareholder rights favour higher debt ratio. However, this inverse  
46 relationship is unlikely to be a consequence of the role of debt in mitigating agency  
47 problems (Jensen and Meckling 1976), rather it is an outcome of controlling  
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56 <sup>12</sup> Note that the regression specification of column 3 is estimated by substituting the CGI with each of the five  
57 governance sub-indices, which is not shown in the paper. The regression results suggest that all five sub-indices are  
58 negatively associated with the debt ratio, and all but the ownership sub-index coefficient is statistically significant.  
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3 shareholders' intention to retain ownership and control over the firm<sup>13</sup>. Although  
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5 conflicts of interest between owners and managers persist, the latter do not seem to exert  
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7 reasonable power and influence to cause higher agency costs, since the former have the  
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9 incentive and authority to collect information and monitor management (see, Jensen and  
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11 Meckling 1976).

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14 The capital structure pattern in many developing economies like Bangladesh seems to  
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16 suffer most from the agency problems created by the founding family or controlling  
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18 shareholders, as suggested in several studies (for example, Shleifer and Vishny 1997;  
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20 Chen and Hu 2007). The controlling shareholders of poorly governed family-controlled  
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22 firms tend to exert direct or indirect influence in the firm's financing decisions, as this is  
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24 in their own interest, and this results in reduced rights for minority shareholder. These  
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26 controlling shareholders want to preserve authority and informational advantage by  
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28 choosing readily available bank debt toward meeting the firm's financing needs, whilst  
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30 retaining or increasing ownership or control. This observation is supported by the  
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32 evidence of positive association between ownership concentration and financial leverage.

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34 Amongst the other determinants of capital structure, the regression results of profitability  
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36 and firm size proxies are found to be significant and consistent. Evidence of a negative  
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38 effect of profitability on debt ratio confirms the prediction of the pecking order theory,  
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40 that firms will favour retained earnings over external finance. The positive influence of  
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42 firm size on leverage also supports the theoretical prediction that large firms have an  
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44 advantage over the smaller firms in obtaining long-term as well as short-term bank loans  
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46 as they have the economies of scale, such as the opportunity for diversification and the  
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48 ability to disclose more information (Du and Dai 2005; Fama and Jensen 1983).

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50 Nonetheless, the corporate governance index, being the main test variable, is proved to be  
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52 robust in all alternative specifications, even after controlling for firm-specific variables.  
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54 This corroborates the hypothesised negative influence of firm-level corporate governance  
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57 <sup>13</sup> Alternatively, better corporate governance reduces agency cost of equity, which in turn enhances the firm's ability to  
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59 raise equity finance and reduces the firm's reliance on debt.  
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3 on debt finance. The robustness of the empirical effect of governance quality (e.g. CGI)  
4 is also supported by the regression results whereby each of the five sub-indices has an  
5 inverse effect on financial leverage. The results appear to have important contribution to  
6 the existing literature on corporate governance and corporate finance in the context of  
7 bank-based financial systems in developing economies. On the one hand, the study  
8 confirms a significant negative influence of better governance quality on the firm's  
9 reliance on bank debt; Iturriaga (2005) also finds that disclosure requirements have a  
10 negative influence on the bank debt of smaller firms. On the other hand, the study  
11 suggests that controlling shareholders of poorly governed firms use increased bank debt  
12 in meeting a firm's financing needs without sacrificing their ownership and control.  
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23 In the absence of a noticeable bond market in the country<sup>14</sup>, firms raise their debt finance  
24 mainly from the nationalised and private commercial banks. The greater negotiating  
25 power of controlling shareholders, along with their strong political ties and business  
26 relationships, appears to be the main reason the higher level of bank debt for poorly  
27 governed firms. Whilst this observation supports the findings of Semenov (2006), that  
28 close bank-firm relationships improve a firm's access to external (bank) finance, it  
29 contradicts the proposition that such relationships reduce capital market imperfections,  
30 especially in relation to a developing country like Bangladesh. This is because the crony  
31 relationship can help opportunistic businesspeople to get bank loans without improving  
32 the firm's governance practices. This eventually undermines the rights of both  
33 shareholders and depositors, leading to an imperfect capital market.  
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45 The banks (or debt finance) are therefore unable to mitigate the agency problems. Instead  
46 of serving the interests of depositors through proper vigilance and monitoring, the debt  
47 providers seem to become a part of the corrupted default system that serves the mutual  
48 interests of several parties, such as controlling shareholders of poorly governed firms,  
49 controlling owners of banks, ill-motivated bank managers of nationalised and private  
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57 <sup>14</sup> Also, the country's stock market, with its small size (the ratios of market capitalisation to GDP in 2003 and 2004  
58 were around 2.42 percent and 4.11 percent) does not seem to have any significant contribution to the firm's financing.  
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3 banks and political leaders or bureaucrats with close relationships with the controlling  
4 shareholders of the borrowing and lending firms.  
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9 In these circumstances, agency problems may arise, not only between the debt providers  
10 and minority shareholders of the borrowing firms, but also between the depositors and  
11 controlling owners of the lending firms (e.g. banks). This evidence supports the  
12 observation of Caprio and Levine (2002) that a large creditor is unlikely to be  
13 independent if he is directly or indirectly associated with the controlling family. It is  
14 important to mention that the creditors' rights in Bangladesh remain very weak because  
15 of incomplete and inconsistent Bankruptcy Acts, along with the ineffectiveness of the  
16 bankruptcy courts and money loan courts<sup>15</sup>, which in turn is the result of strong political  
17 lobbying of a group of business elites. Whilst Iturriaga (2005) finds better protection of  
18 creditor rights has a positive influence on bank debt in developed economies, this  
19 proposition may not hold true for a developing economy, where poor creditor rights can  
20 cause a higher level of bank debt.  
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33 Bank-based debt finance may not only help poorly governed firms meet their financing  
34 needs without diluting the control of majority owners, but may also allow the latter to  
35 expropriate the interests of the minority shareholders and other stakeholders. The study  
36 also corroborates other empirical studies based on developing economies. Kumar (2005),  
37 for instance, observes that debt can facilitate expropriation in economies like India, where  
38 institutions are generally ineffective. Du and Dai (2005) also argue that weak corporate  
39 governance and crony capitalism in East Asian economies have caused risky capital  
40 structures, leading to financial distress risks.  
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## 49 **6. Conclusions**

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54 The paper empirically examines the relationship between firm-level corporate  
55 governance and the capital structure pattern of non-financial listed firms in Bangladesh.  
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58 <sup>15</sup> See also Sobhan and Werner (2003).  
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With a survey-based corporate governance index (CGI), the study investigates the effect of corporate governance on the total as well as long-term debt ratios. The cross-sectional regressions appear to confirm a significant influence of firm-level governance quality on a firm's capital structure, with the poorly governed firms having higher level of debt finance. The paper suggests that an inverse relationship between corporate governance and debt ratio is less likely to be a consequence of the role of debt in mitigating agency problems, and more likely to be an outcome of the controlling shareholders' reluctance to forgo absolute control rights. This is probably because controlling shareholders of a poorly governed firm intend to preserve their authority and informational advantage by choosing readily available bank debt, whilst retaining their ownership or control of the firm. This notion is also supported by the evidence that ownership concentration is positively associated with the debt ratio. In this situation, debt providers appear to become a part of the crony relationships of powerful stakeholders, who capitalise on inefficient institutional framework to persistently cause poor firm-level governance.



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Table 1: Mean values of corporate governance index across industries

Sectors	CG Index	Ownership	Shareholders' Right	Board & Management.	Disclosure	Stakeholders' Rights	n
Food & Allied	38.45	10.00	7.78	6.22	6.67	7.78	12
Tobacco	46.22	10.00	11.11	8.44	6.67	10.00	3
Textile	36.50	4.64	8.69	4.95	8.81	9.40	28
Chemical & Allied	48.24	8.33	10.00	7.04	10.65	12.22	18
Leather & Leather Products	50.84	10.00	12.51	6.67	10.00	11.67	4
Ceramic & Cement	39.56	6.15	10.52	6.87	7.82	8.20	13
Machinery & Equipment	30.92	2.50	7.51	4.67	7.92	8.34	4
Electrical Equipments & Comp.	51.72	8.33	11.67	7.56	11.39	12.77	6
Automobile	48.01	0.00	13.34	8.00	11.67	15.00	2
Other Manufacturing	19.34	10.00	2.23	2.67	3.33	1.11	3
Business (IT) Services	37.33	7.50	9.17	4.00	8.33	8.33	4
Real Estate & Other Services	44.83	0.00	10.00	5.67	11.67	17.50	4
Foreign Controlled Firms	79.29	19.00	15.67	14.80	13.83	16.00	10
Locally Controlled Firms	36.61	5.27	8.68	5.05	8.30	9.30	91
<i>Total</i>	<i>40.84</i>	<i>6.63</i>	<i>9.38</i>	<i>6.02</i>	<i>8.84</i>	<i>9.97</i>	<i>101</i>

Source: Prepared by the authors based on questionnaire survey conducted in 2004-05.

Table 2: Correlation matrix for corporate governance index and sub-indices

Categories	CGI	(Sub-index-1)	(Sub-index-2)	(Sub-index-3)	(Sub-index-4)	(Sub-index-5)
Ownership (Sub-index-1)	0.471***	1				
Shareholders Rights (Sub-index-2)	0.864***	0.204**	1			
Board (Sub-index-3)	0.749***	0.343***	0.628***	1		
Disclosure (Sub-index-4)	0.835***	0.194**	0.742***	0.565***	1	
Stakeholders Rights (Sub-index-5)	0.826***	0.074	0.740***	0.505***	0.816***	1

Note: The correlation matrix is based on 101 non-financial listed firms. \*, \*\*, and \*\*\* denote significance at 10%, 5%, and 1% levels, respectively.

Table 3: Corporate governance and various measures of debt finance

Leverage	Mean Ratios				Correlation with CGI and Sub-indices					
	All	REP.	MOD.	Difference (t-stat.)	CGI	Sub-1	Sub-2	Sub-3	Sub-4	Sub-5
	1	2	3	4	5	6	7	8	9	10
Lvg1	0.70	1.02	0.50	0.52***	-0.33***	-0.17**	-0.34***	-0.04	-0.40***	-0.31***
Lvg2	1.93	2.56	1.28	1.28	-0.20**	-0.20**	-0.17**	-0.11	-0.15*	-0.12
Lvg3	0.32	0.43	0.18	0.25**	-0.12	-0.01	-0.12	-0.14*	-0.13*	-0.10
Lvg4	0.44	0.58	0.30	0.27	-0.08	-0.07	-0.02	-0.09	-0.07	-0.05
<i>n</i>	101	34	33		101	101	101	101	101	101

Notes: The table is based on primary data on non-financial listed firms in Bangladesh. \*, \*\*, and \*\*\* denote significance at 10, 5, and 1 per cent levels, respectively. Firms with the CGI of less than 35 are placed in the repressive portfolio (denoted as REP.), whilst the moderate portfolio (MOD.) consists of the firms with the CGI of greater than 48. Column 4 shows the difference (t-statistics) in the means of alternative leverage measures between the two portfolios. Lvg.1 = Total debt -to- Total assets, Lvg.2 = Total debt -to- Shareholders' equity, Lvg.3 = Long term debt -to- Long term debt plus Shareholders' equity, Lvg.4 = Long term debt -to- Shareholders' equity

Table 4: The OLS regression results of debt ratios against corporate governance index (CGI) and ownership concentration

Expl. Var.	Dep.Var.	Debt-to-Assets			Long Term Debt Ratio		
		1	2	3	4	5	6
Intercept		0.014 (0.161)	-0.156 (0.157)	-0.224 (0.210)	-0.402** (0.175)	-0.487** (0.191)	-0.412* (0.249)
CGI		-0.004*** (0.001)	-0.004*** (0.001)	-0.004*** (0.002)	-0.003** (0.002)	-0.003** (0.002)	-0.002* (0.002)
Concentration			0.003** (0.001)	0.004*** (0.001)		0.002 (0.002)	0.003* (0.002)
Firm Size		0.060*** (0.012)	0.060*** (0.011)	0.048*** (0.010)	0.059*** (0.016)	0.057*** (0.016)	0.047** (0.019)
Profitability		-0.165*** (0.040)	-0.188*** (0.040)	-0.197*** (0.048)	-0.230*** (0.040)	-0.224*** (0.041)	-0.305*** (0.044)
Growth		0.188*** (0.058)	0.169*** (0.063)	0.143** (0.063)	0.033 (0.080)	0.027 (0.074)	0.038 (0.078)
Tangibility		-0.111 (0.086)	-0.099 (0.085)	-0.059 (0.101)	0.123 (0.093)	0.125 (0.094)	0.135 (0.110)
Non-debt Tax Shield		-0.118 (0.100)	-0.104 (0.099)	-0.208* (0.109)	-0.180 (0.146)	-0.169 (0.143)	-0.263* (0.146)
Industry Dummies		-	-	Yes	-	-	Yes
F-statistics		71.63***	64.85***	30.59***	35.07***	30.93***	14.481***
Adjusted R <sup>2</sup>		0.836	0.840	0.853	0.719	0.720	0.734
N. of Observations		98	98	98	94	94	94

Notes: The OLS regressions are based on non-financial listed firms after dropping the observations that are identified as extreme outliers. \*\*\*, \*\* and \* indicate statistical significance at the 1, 5 and 10 per cent levels, respectively. The figures in parentheses are the heteroscedasticity-adjusted standard errors. Few more observations are found to be outliers in the cross-section regression models. The problem of outliers has been treated by adding a dummy variable for the outliers in the regression model. The regression coefficients of the outlier dummy are turned out to be statistically significant at one percent level in all specifications.