Impact of Ownership Structure on Capital Structure Decisions:
Evidence from Bangladeshi Listed Companies
IMPACT OF OWNERSHIP STRUCTURE ON CAPITAL STRUCTURE DECISIONS: EVIDENCE FROM BANGLADESHI LISTED COMPANIES

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Abstract

This study seeks to examine the impact of ownership structure on the capital structure decisions of firms in an emerging market economy. Our sample consists of 792 firm-year observations drawn from non-financial firms listed in the Dhaka Stock Exchange, Bangladesh, and spans the period from 2010 to 2018. We define capital structure by the ratio of total debt to total assets and measure ownership identity as the percentage of shares attributable to six categories of shareholders. These include family owners, managerial owners, state owners, institutional owners, individual owners and foreign owners. Using pooled OLS regression and controlling for a number of governance and firm-specific variables, we find that family ownership, managerial ownership and state ownership each has a positive and significant influence on leverage. We propose that while state-owned businesses may be utilizing more debt due to their greater ability to access finance and to withstand financial distress, the propensity of family owners and managerial owners towards debt may be explained in terms of their desire to avoid the dilution of equity and/or their desire to maximize firm value. However, we also question whether the institutional voids in Bangladesh make debt a convenient financing option and whether this, in fact, leads family owners and managerial owners to opportunistically take on more debt, without adequate regard to its impact on the value of the firm.

Keywords: Bangladesh, Capital Structure, Emerging Market, Leverage, Ownership Structures, Pecking Order Theory, Trade Off Theory.

1. INTRODUCTION

Capital structure, or the combination of debt and equity through which a firm is financed, represents a critical decision variable owing to its enduring impact on the risk, survival and value of the firm. The decision is a complex one, primarily because of the classic trade-off presented by higher utilization of debt versus equity. Higher debt, often termed financial leverage, offers benefits to the firm in the form of the tax deductibility of interest on debt, but it also increases the risk of financial distress (Liao et al, 2015). Classical theories suggest that firms will choose the capital structure which maximizes the value of the firm (Myers, 1984). However, in practice, every entity that has an influence over the capital structure choice may strive to maximize their individual wealth or benefits (Mukonyi et al, 2016). This renders ownership and control central to the understanding of capital structure.

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According to Mukonyi et al. (2016), ownership structure can be discussed from the vantage point of concentration as well as the identity of ownership, with the latter referring to the percentage of shares held by different categories of shareholders. As suggested by Shi (2010), different shareholders play distinct roles in the corporate governance of the firm and their influence may be critical in determining the degree of leverage. In addition, given the agency conflict between shareholders and managers which characterizes modern corporations (Driffield et al., 2006), capital structure decisions may be used as a monitoring device by the former to minimize agency costs (Zhang, 2013). Capital structure is, therefore, dependent on ownership identity, or as stated by Pinando and Torre (2011), it is a choice, which depends on who actually controls the firm.

Hence, in the present study, we seek to examine the impact of ownership structure on the capital structure of non-financial, publicly listed companies in Bangladesh. We use data for 88 firms for the period 2010-2018 inclusive, resulting in a total of 792 firm-year observations. We define capital structure by the ratio of total debt to total assets and use six variables to represent ownership identity. These are family ownership, managerial ownership, institutional ownership, state ownership, foreign ownership and individual ownership. We also control for a number of firm-specific variables reflecting the performance and governance characteristics of the sample firms.

Several factors contribute to the significance of this study. First, family firms which are considered unique, owing to their distinct management style and financing needs (Moussa & Elgiziry, 2019) are the principal form of listed companies in Bangladesh (Khan et al., 2015). Hence, understanding the relationship between family ownership and financial leverage can be of immense value in understanding capital structure dynamics in Bangladesh.

Second, as suggested by Farooque et al. (2007), typical shareholders in Bangladeshi firms (other than family members) include financial institutions and other corporate entities, domestic individuals and in rare cases, the state, and foreign owners. By examining the relationship between all these variables and financial leverage, we hope to fill the gap in the extant literature, as the ownership-leverage nexus remains largely unexplored in Bangladesh. Also, by incorporating managerial ownership, we expect to find answers to the relative importance of Type I agency conflict (conflict between owners and managers) versus Type II agency conflict (conflict between controlling and minority shareholders) in the context of Bangladesh.

In addition to this, Bangladesh’s corporate governance model displays several characteristics of the emerging market model, such as concentrated ownership, insider boards, lack of disclosure, insufficient protection for minority shareholders (Farooque et al., 2007). Hence, the results of this study can be extended to other emerging markets, making it a valuable addition to the literature.
The remainder of the paper is organized as follows: in the next section, we provide an overview of the different theoretical frameworks used in the literature to study capital structure decisions. Based on a discussion on the institutional context and the role of ownership structure and corporate governance, the following section then develops the hypotheses to be tested for the purpose of this study. In the subsequent section, we discuss our methodology and develop our model for testing the hypotheses. This is followed by a section that discusses the results. Next, a concluding section highlights the key findings and suggests possible directions for future research.

2. THEORETICAL FRAMEWORKS

Theoretical frameworks of capital structure provide a logical basis for understanding why firms might opt for different combinations of debt and equity and how this, in turn, impacts the value of the firm. Our review of the extant literature suggests that three theories, namely the trade-off theory, the pecking order theory and the agency theory have principally been used by researchers to explain their findings on the ownership-capital structure relationship. A brief overview of these is provided.

The trade-off theory suggests that financial leverage yields both costs and benefits for a firm. When leverage is low, the benefit of debt, in the form of the tax shield afforded by interest payments, is high. However, as more debt is used, the potential for financial distress and associated bankruptcy costs goes up. The optimal capital structure, therefore, is the one, which balances the costs and benefits of debt, thus resulting in maximization of the value of the firm (Kraus & Litzenberger, 1973; Myers, 1977).

In contrast, the pecking order theory does not aim to predict an optimal level of leverage. Rather, it suggests that firms tend to follow a hierarchical sequence while choosing among alternative sources of finance, owing to a desire to reduce risk and financing costs. Internal funds come first in this hierarchy. But in the event that these are exhausted, firms prefer to utilize debt-financing, leaving the issuance of new equity as a last resort. The theory also assumes that access to external funds is limited by information asymmetries between managers and external providers of finance, once again reinforcing the preference for internal funds (Myers & Majluf, 1984).

Focusing on the divergence of interest between managers and owners, agency theory suggests that owners must find ways to minimize the pursuit of self-interest by managers. Monitoring of managers by owners is a costly option. Hence, the theory proposes two alternatives, both of which involve adjustments to the capital structure. The first entails giving managers equity stake in the firm, such that their interests become naturally aligned with owners. The second involves issuing debt, since it reduces the free cash flow at the manager’s disposal and also because debt providers can act as effective monitors. Hence, leverage decisions affect both the cost of capital and agency costs, thus impacting the value of the firm (Jensen & Meckling, 1976).

These theories are of interest to us because prior researchers have used them to explain how the ownership variables incorporated in this study influence leverage.
For instance, Zhang (2013) has used the agency theory to explain why Chinese firms with higher state ownership use more debt, while Wellalage and Locke (2015) have used the same to explain why there is a U-shaped relationship between managerial ownership and leverage in small businesses in New Zealand. Ramalho et al. (2018) contend that the pecking order theory is particularly relevant in explaining the capital structure of family owned firms, while Li et al. (2009) have relied on the trade-off theory to explain why foreign owned firms in China are less leveraged than their domestic counterparts.

As suggested by authors such as Kulathunga et al. (2016) and Moussa and Elgiziry, (2019), no single theory may be adequate to explain capital structure choices. Hence, attributing our empirical findings to any individual framework does not constitute our objective. However, we feel that it would be interesting to note if the findings can be aligned with one or more of these theories, thus adding strength to our analysis.

3. INSTITUTIONAL CONTEXT

Like many other emerging markets, Bangladesh’s institutional context is characterized by weak implementation and enforcement of regulations, difficulties in contract enforcement, an under-developed capital market, a weak market for corporate control and a passive managerial labor market (Mahmud & Ara, 2015; Sobhan, 2016). Companies are governed by the Companies Act 1994, but it has been noted that the mandates of this Act are often honored more in breach than in observance (Ahmed & Yusuf, 2005). The Securities and Exchange (SEC) introduced corporate governance guidelines in 2006 on a “comply or explain” basis. These were made mandatory in 2012. In 2018, the new corporate governance code was developed, which is already implemented. Ferdous et al. (2018) suggest that on average, companies are moderately compliant with the code provisions. However, based on a confidential survey of corporate managers and comparison of the same with the checklists produced in annual reports, Sobhan (2016) argues that the degree of compliance as derived from the latter, may actually be over-stated.

Sobhan (2016) also finds over-statement to be particularly rife in family-owned businesses, which brings us to a distinct characteristic of Bangladesh’s corporate landscape. Not only is ownership highly concentrated; rather there is overpowering family dominance, with family members functioning as block owners and occupying key management positions at the same time (Khan et al., 2015). Sobhan and Werner (2003) find that almost three-quarters of non-bank listed companies have boards dominated by sponsor shareholders, with father-son duos holding the position of chairman and managing director constituting a common norm. While there are several arguments in favor of the higher economic efficiency of family firms (eg. Anderson and Reeb, 2003), previous researchers have suggested that in Bangladesh, such pervasive family influence may be weakening the corporate governance framework (Haque et al., 2011). This is corroborated by others such as Khan et al. (2015).
In terms of financing, Bangladesh’s corporate sector is heavily dependent on the banking system. However, the quality of regulation and governance in this sector is far from satisfactory and is characterized by lack of transparency, limited accountability, ineffective audit and insufficient disclosure (Mahmud & Ara, 2015). The situation is exacerbated by the political affiliations of many banks and their ability to draw vicarious power from the ruling party elites (Uddin et al., 2018). This has culminated in high level of stressed assets and pervasive presence of willful defaulters (The Financial Express, 2019).

The existence of strong ties between political parties and businesses is not unique to banks, rather it is evident in other sectors as well. More than two-thirds of the members of parliament elected in 2008 were businessmen (Uddin et al., 2018). This, along with the widespread use of political affiliations and lobbying to gain economic benefits makes Bangladesh a classic case of “crony capitalism” (Uddin & Hopper, 2003). It also renders the state incapable of doing justice to its role of controller and creator of ultimate accountability.

4. HYPOTHESES DEVELOPMENT

The findings of previous researchers on how different categories of shareholders influence the choice of the financing mix are presented in this section. These, along with the characteristics of Bangladesh’s contextual framework, as discussed above, are used to develop the hypotheses for the ownership variables in this study.

Family Ownership: Several studies have found a positive relationship between family ownership and leverage (King & Santor, 2008; Lisboa, 2015). This has been attributed to a number of factors. First, family firms wish to retain ownership and control by minimizing the dilution of equity (King & Santor, 2008; Gonzalez et al., 2012) and if external finance is required, debt is often considered to be less intrusive than the issuance of new stock (Ramalho et al., 2018). Second, family firms typically have longer investment horizons and more stable organizational structures (Ramalho et al., 2018), which make it relatively easier for them to secure debt on favorable terms. Finally, the concentrated ownership which characterizes many family firms minimizes Type I agency conflict and by extension, managerial opportunism (Driffield et al., 2006), thus facilitating use of more debt. However, family firms often tend to be more conservative and the desire to avoid the possibility of financial distress (Daily & Dollinger, 1993) may, in certain cases, trump all these factors, resulting in usage of lower debt levels. Such an inverse relationship has also been documented in past studies (eg. McConaughy et al., 2001; Schmid, 2013).

In line with the study done on four East Asian countries by Driffield et al. (2006), we assume that family businesses in Bangladesh may be strongly motivated by the desire to prevent dilution of control and preserve the business for future generations, thus making debt the preferred mode of external finance. In addition, as suggested by Ampenberger et al. (2009), the relative attractiveness of debt to family firms depends on the level of creditor monitoring. Although Bangladesh’s financial system is mainly
bank-based, banks often fail to use effective monitoring mechanisms (Bangladesh Bank, 2017) and to play a disciplining role, thus making it even more convenient for firms to resort to debt finance. Hence, we hypothesize that family ownership positively influences greater use of debt in the capital structure.

**H1:** The higher the percentage of shares held by family owners, the higher the leverage ratio.

**Managerial Ownership:** The influence of managerial ownership on leverage is rather equivocal. Several studies document a positive relationship between the two (eg. Short et al., 2002; Pindado et al., 2011) much in sync with the argument by Jensen and Meckling (1976), that possession of equity by management serves to align the interests of owners and managers. This reduces the tendency on the part of the latter to engage in non-maximizing behavior, including the use of sub-optimal levels of debt. In contrast, a significant number of studies suggest that higher managerial ownership results in managerial entrenchment (eg. Farooq, 2013; Wellalage & Locke, 2015), with owner-managers seeking to avoid both the risks and the disciplining role of debt. Still another group of researchers (eg. Brailsford, 2002) find that the relationship between managerial ownership and leverage is non-linear. Hence, at low levels of managerial ownership, agency conflict may be minimized, but at higher levels, this is subsumed by the effect of managerial entrenchment. Given such ambiguity and the lack of a basis for making a priori assumption in the Bangladesh context, we hypothesize that managerial ownership has an impact on leverage, but the direction of influence may be positive or negative.

**H2:** Ownership of shares by management is a significant variable in explaining the leverage ratio.

**State Ownership:** Most prior studies document a positive relationship between state ownership and leverage (eg. Zhang, 2013; Mukonyi et al., 2016). This may be explained by the desire to reduce the severe agency problem, which characterizes such firms, as well as their greater ability to withstand financial distress (Zhang, 2013). Liu et al. (2011) also suggest that government helps firms in which they have equity to secure more debt and on better terms, thus making higher level of borrowing feasible. Based upon the belief that all these explanations may have relevance to Bangladesh, we hypothesize that the relationship between state ownership and leverage is positive.

**H3:** The higher the percentage of shares held by the state, the higher the leverage ratio.

**Institutional Ownership:** Although few studies have documented institutional ownership as having insignificant impact on leverage (eg. Mukonyi et al., 2016), the evidence is tilted in favor of a positive impact (eg. Joher et al., 2006; Liao et al., 2015). Institutional owners often act as a ‘collective force’ and play an active monitoring role against managerial opportunism (Joher et al., 2006), thus resulting in higher debt levels. The presence of institutional shareholders also helps raise long-term debt
finance at an advantageous cost. This is because such shareholders, themselves, are more willing to provide debt to companies over whose board they enjoy an influence. Other prospective lenders may also have more confidence in a firm with higher institutional shareholding (Hasan & Butt, 2009). Hence, we hypothesize that higher institutional shareholding results in greater use of debt.

\[ H_4: \text{The higher the percentage of shares held by institutional owners, the higher the leverage ratio.} \]

**Individual Ownership**: Some studies (e.g., Brailsford et al., 2002) suggest that when individual shareholders act in the capacity of external blockholders, they tend to play an active monitoring role, resulting in higher debt levels. However, much like the Malaysian context highlighted in Joher et al. (2006), individual share ownership in Bangladesh takes the form of diffuse ownership, where each investor has nominal ownership and voting rights (see for eg. Uddin & Choudhury, 2008). In such a situation, weak monitoring ability and difficulty in taking coordinated action may render individual shareholders incapable of affecting leverage decisions. Hence, we hypothesize that individual ownership has no impact on the capital structure choice.

\[ H_5: \text{Ownership of shares by individuals is not a significant variable in explaining the leverage ratio.} \]

**Foreign Ownership**: Reza and Tularam (2017) have documented a positive relationship between foreign ownership and leverage, attributable to the stronger ability of such firms to ensure better governance and reduce agency conflicts. On the other hand, Li et al. (2009) have found the impact of foreign ownership to be consistently negative in China, despite the use of four definitions of leverage. The authors suggest that this is because foreign-owned firms in China are taxed at lower rates than their domestically owned counterparts, which reduces the attractiveness of debt. Since our sample consists of listed companies, which are taxed uniformly irrespective of ownership structure, it might be possible that foreign ownership has a positive impact on leverage. Hence, we formulate our hypothesis accordingly.

\[ H_6: \text{The higher the percentage of shares held by foreign owners, the higher the leverage ratio.} \]

5. METHODOLOGY

5.1 Data and Sample

The sample consists of 88 companies listed with the Dhaka Stock Exchange (DSE) in Bangladesh from 2010 to 2018 inclusive, excluding the financial institutions, banks and insurance companies. The financial companies are excluded from the sample since there could be strict government regulations regarding their capital structure (Hubert et al., 2012). DSE is the leading stock exchange in Bangladesh between the two exchanges. The total number of companies listed in DSE in 2010 was 197. Excluding the banks, financial institutions, and insurance companies, 110 non-financial companies were initially selected for the sample. Due to unavailability of
data or annual reports, 88 firm year observations were excluded resulting in a total sample of 792 firm year data. Table 1 represents the industry wise distribution of the firms. The sample consists of various sectors such as: engineering, food and allied, jute, cement, ceramics, pharmaceuticals, tannery, textile, and miscellaneous.

<table>
<thead>
<tr>
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<tr>
<td>Engineering</td>
<td>154</td>
<td>19.44</td>
<td>19.44</td>
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<tr>
<td>Food and Allied</td>
<td>62</td>
<td>7.83</td>
<td>27.27</td>
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<tr>
<td>Fuel and power</td>
<td>94</td>
<td>11.87</td>
<td>39.14</td>
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<tr>
<td>Jute</td>
<td>9</td>
<td>1.14</td>
<td>40.28</td>
</tr>
<tr>
<td>Power</td>
<td>5</td>
<td>0.63</td>
<td>40.91</td>
</tr>
<tr>
<td>Textile</td>
<td>126</td>
<td>15.91</td>
<td>56.82</td>
</tr>
<tr>
<td>Cement</td>
<td>45</td>
<td>5.68</td>
<td>62.5</td>
</tr>
<tr>
<td>Ceramic</td>
<td>36</td>
<td>4.55</td>
<td>67.05</td>
</tr>
<tr>
<td>Miscellaneous</td>
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<td>4.55</td>
<td>71.59</td>
</tr>
<tr>
<td>Pharma</td>
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<td>18.18</td>
<td>89.77</td>
</tr>
<tr>
<td>real estate problem</td>
<td>27</td>
<td>3.41</td>
<td>93.18</td>
</tr>
<tr>
<td>Tannery</td>
<td>18</td>
<td>2.27</td>
<td>95.45</td>
</tr>
<tr>
<td>Telecom</td>
<td>36</td>
<td>4.55</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>792</td>
<td>100</td>
<td></td>
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</tbody>
</table>

The financial and corporate governance data are hand collected from the annual reports of the sample companies listed on DSE. The shareholding patterns of different owner identities are collected from annual reports as well as company websites and prospectus. Under the SEC notification, listed companies are required to disclose the pattern and percentage of shares held by parent/subsidiary/associate companies, the directors, CEO, company secretary, chief financial officer, head of internal audit and their spouse and minor children. These have been utilized to derive the ownership structures of the sample firms.

5.2 Measuring the Variables

**Dependent Variable**

Literature investigating capital structure has used various definitions to measure leverage, such as, total debt to total assets (Li et al., 2009, Berger et al., 1997), long-term debt to total assets (Bhabra et al., 2008; Zou & Xiao, 2006). In this study, we use total debt to total assets as the measurement of leverage.

We use the book value of the total assets to calculate leverage ratio in line with researchers such as Antoniou et al. (2008). Previous studies have used both book leverage and market leverage. There are different opinions about these two measures.
But researchers often prefer book leverage since financial markets fluctuate with time, reducing the reliability of market leverage as an indicator for making financial policy (Frank & Goyal, 2009). Moreover, firms are likely to consider book leverage as bank loan contracts are written in terms of book value (Harvey et al., 2004).

**Independent Variables**

Ownership structures, as represented by the equity stakes of six different categories of shareholders, constitute the independent variables for this study. The operationalization of the variables is as follows. Family ownership (FAMOWN) is measured as the proportion of shares owned by members of the same family or families. The latter is applicable for cases where individuals from more than one family were found in the capacity of owners. Managerial ownership (MOWN) is measured as the proportion of equity possessed by managers/directors. State ownership (GOWN) is measured as the proportion of shares owned by the state and stated-owned organizations. Institutional ownership (INSOWN) is calculated as the proportion of shares owned by institutions including banks, insurance companies, Investment Corporation of Bangladesh (ICB) and other corporate entities. Individual Ownership (POWN) is measured as the proportion of shares owned by individuals/general public. Foreign Ownership (FOWN) is calculated as the percentage of shares owned by foreign individuals, institutions and parent company.

Modern corporate finance theories view agency cost as one of the determinants of capital structure, whereas corporate governance is structured to mitigate agency issues (Hasan & Butt, 2009). To account for this link between corporate governance and capital structure, this paper controls for two governance variables, namely, board size and independence.

Evidence on the relation between board size and leverage is mixed. Berger (1997) and Abor and Biekpe (2007) find that firms with larger boards generally have low gearing levels, attributable to the pressure exerted by larger boards on managers to utilize less debt and enhance firm performance. On the other hand, Wen (2002) finds positive relationship between board size and capital structure. He argues that large boards prefer higher gearing to increase firm value, especially when these are entrenched, due to greater monitoring by regulatory authorities. Anderson et al. (2004) find that the cost of debt is generally lower for firms with larger boards owing to their higher credibility in the eyes of lenders. So, debt financing becomes a cost-effective choice.

In most of the publicly listed companies in Bangladesh, the majority of the board members are either direct family members or friends or kin, except the multinationals. Uddin and Choudhury (2008) report that even if non-family members are elected to the boards, the majority of these external directors have hardly any involvement in the true affairs of the companies they serve. Under such circumstances, whether the board size plays a significant role in capital structure decision needs to be answered.
Evidence on the relationship between presence of non-executive directors/independent directors and capital structure is also mixed and inconclusive. Pfeffer and Salancick (1978) accentuate that the presence of independent directors enhances the capability of a company to get recognition from external stakeholders, thus leading to reduction in uncertainty about the company and enhanced ability to raise funds. Thus, higher representation of non-executive directors on board is associated with higher leverage. Similar results are presented by Jensen (1986) and Berger (1997). In contrast, Wen (2002) suggests that better monitoring of managers by non-executive directors forces the former to pursue less leverage for achieving superior results. Hence, firms which have higher proportion of independent directors, resort to less debt financing.

Interestingly, in the context of Bangladesh, ‘independent directors’ may have an entirely different meaning. Most independent directors represent current or former government officials or bureaucrats, or at times explicit or implicit politically linked personnel. They are appointed as directors to assist the company in getting licenses or as payback for previous favors (Sobhan & Werner, 2003). This is also consistent with Uddin and Choudhury (2008), who find that in most Bangladeshi companies, independent directors were appointed for ‘name’ only, and personal connections, rather than for skill and expertise. Under such circumstances, whether independent directors can influence the capital structure decisions in a company needs to be explored.

**Firm Specific Control Variables**

Myers and Majluf (1984) find that profitable firms generally use less debt because these firms prefer internally generated funds over external financing. This is in sync with the pecking order hypothesis. The trade-off theory, on the other hand, predicts a positive sign since the higher the profitability of a firm, the higher the potential tax shields, and the higher the motivation to use debt (De Angelo & Masulis, 1980). In this study, we use return on equity (ROE) as the measure of profitability in line with several previous studies (eg. Cho & Pucik, 2005; Bockova & Zizlavsky, 2016; Pastusiak et al., 2016; Batchimeg, 2017).

In line with several previous studies, we use total assets as a measure of size (for eg. see Cooke, 1989a, 1989b, 1991, 1992; Wallace, Naser & Mora, 1994). We measure firm size using the logarithm of total assets (l_TA) (Faccio et al., 2002). There is a divergence of findings on the influence of size on leverage. Titman and Wessels(1988) state that large firms do not consider the bankruptcy costs in deciding the level of leverage as these are just a small percentage of the total value of the firm. Therefore, large firms may prefer to use higher level of gearing. This is also supported by Friend and Lang (1988) and Marsh (1982). On the other hand, Rajan and Zingales (1995) find that larger firms are better able to issue equity at fair prices owing to their market standing and performance record. This reduces their reliance on debt, causing firm size to exert a negative impact on leverage.
Firm age is calculated as the number of years since the firm’s incorporation. Older firms may have more tangible assets and better borrowing capacity (Ampenberger et al., 2009), leading to a positive relation between firm age and gearing. In contrast, firms which are younger might need to look for more debt to finance the higher growth opportunities available to them (Lisboa, 2015). This would produce an inverse relation between age of the firm and financial leverage.

5.3 Model Specification

Based on previous studies, (eg. Li et al., 2009; Deesomsak et al., 2004 & Liu et al., 2011), we employ pooled ordinary least squares (OLS) regression model to investigate the relation between ownership structure and the capital structure decision. According to the hypotheses and variables described in previous sections, we establish the regression model to estimate the determinants of firm’s leverage. The model specification is stated below.

\[ \text{LEV}_{it} = \alpha + \beta_1 (\text{FAMOWN}) + \beta_2 (\text{MOWM}) + \beta_3 (\text{GOWN}) + \beta_4 (\text{INSOWN}) + \beta_5 (\text{POWN}) + \beta_6 (\text{FOWN}) + \beta_7 (\text{IND\_DIR}) + \beta_8 (\text{BOARD\_SIZE}) + \beta_9 (\text{AGE}) + \beta_{10} (\text{SIZE\_OF\_THE\_FIRM}) + \beta_{11} (\text{PROF}) + \beta_{12} (\text{INDUSTRY\_CONTROLS}) + \beta_{13} (\text{YEAR\_CONTROLS}) + \varepsilon_{it} \]

LEV (Leverage) denotes the dependent variable for firm i in year t. Independent variables include FAMOWN (Family Ownership), managerial ownership (MOWN), state ownership (GOWN), Institutional Ownership (INSOWN), Individual Ownership (POWN), and Foreign Ownership (FOWN). Independent Director (IND\_DIR) represents the presence of non-executive/independent directors in the board while Board Size (BOARD\_SIZE) denotes the total number of members in the board. AGE, PROF and SIZE are measured by number of years since incorporation, Return on Equity (ROE) and natural logarithm of Total Assets, respectively.

The assumptions underlying the regression model were tested for multicollinearity based on the correlation matrix as well as the variance inflation factor (VIF). None of the variables have a VIF value in excess of 10, which suggest that multicollinearity is not a problem in interpreting the regression results (Hair et al., 1995; Kennedy, 1992; Marquardt, 1970; Neter et al., 1989). The model is run for robust standard error in order to control for heteroskedasticity.

6. EMPIRICAL RESULTS

6.1 Descriptive Statistics

Table 2 presents the descriptive statistics for the variables used in the study. The results report an average leverage (LEV) of 0.48 for the listed companies in the sample. This is slightly lower than (Hasan et al., 2014) who report an average of 0.56 for listed firms in Bangladesh from 2007-2012. The average family ownership of firms is about 23%, which is somewhat similar to the study of Muttakin et al. (2014), where they find that family members own an average of 28% of shares. Institutional shareholding is relatively low at about 14%, while managerial ownership is about
38%. Firms in the sample have a mean age of 19.6 years, with return on equity (PROF) averaging 14%.

Table 2: Descriptive Statistics

<table>
<thead>
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<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
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<td>MOWN</td>
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<td>0.0036</td>
<td>0.9894</td>
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<td>FOWN</td>
<td>792</td>
<td>0.1070952</td>
<td>0.2478456</td>
<td>0</td>
<td>0.971</td>
</tr>
<tr>
<td>INSOWN</td>
<td>792</td>
<td>0.1427366</td>
<td>0.1297111</td>
<td>0</td>
<td>1.55</td>
</tr>
<tr>
<td>PROF</td>
<td>792</td>
<td>0.1418068</td>
<td>0.2565038</td>
<td>-1.426484</td>
<td>4.593056</td>
</tr>
<tr>
<td>1_TA</td>
<td>792</td>
<td>21.728</td>
<td>1.76748</td>
<td>17.0646</td>
<td>26.02225</td>
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</tbody>
</table>

6.2 Pearson Correlation Matrix

Table 3 presents the correlation matrix among the variables. The Pearson correlation coefficients suggest that the multicollinearity is not serious for the independent variables. Gujarati (2009) and Kennedy (2003) suggest that collinearity should not be considered harmful until the correlation coefficient exceeds 0.8 or 0.9. Tabachnick, Fidell, and Osterlind (2001) propose a more stringent cut-off point of 0.7. Since the Pearson correlation between independent variables in this study ranges between 0.0001 to 0.4533, multicollinearity does not appear to be a serious problem in interpreting the regression results.
### Table 3: Pearson Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>LEV</th>
<th>AGE</th>
<th>IND_DIR</th>
<th>BOARD_SIZE</th>
<th>FAMOWN</th>
<th>GOWN</th>
<th>POWN</th>
<th>FOWN</th>
<th>InsOwn</th>
<th>MOWN</th>
<th>ROE</th>
<th>l_TA</th>
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<tr>
<td>LEV</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>AGE</td>
<td>0.112**</td>
<td>1</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IND_DIR</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>BOARD_SIZE</td>
<td>0.072**</td>
<td>-0.009</td>
<td>-0.285***</td>
<td>1</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAMOWN</td>
<td>0.174***</td>
<td>-0.105**</td>
<td>0.019</td>
<td>-0.014</td>
<td>1</td>
<td></td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>GOWN</td>
<td>0.192***</td>
<td>-0.021</td>
<td>-0.285***</td>
<td>0.242***</td>
<td>-0.371***</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>POWN</td>
<td>-0.296***</td>
<td>-0.082**</td>
<td>0.162***</td>
<td>-0.364***</td>
<td>-0.102</td>
<td>-0.301***</td>
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<tr>
<td>FOWN</td>
<td>-0.009</td>
<td>0.111**</td>
<td>0.044</td>
<td>0.141***</td>
<td>-0.368***</td>
<td>-0.144***</td>
<td>-0.431***</td>
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<tr>
<td>InsOwn</td>
<td>-0.032</td>
<td>0.148***</td>
<td>0.028</td>
<td>-0.011</td>
<td>-0.117***</td>
<td>0.084**</td>
<td>-0.246***</td>
<td>-0.123***</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOWN</td>
<td>0.288***</td>
<td>-0.255***</td>
<td>0.012</td>
<td>0.165***</td>
<td>0.453***</td>
<td>-0.162***</td>
<td>-0.449***</td>
<td>0.111**</td>
<td>-0.1142**</td>
<td>1</td>
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<td></td>
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<tr>
<td>PROF</td>
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<td>-0.015</td>
<td>0.056</td>
<td>0.0728**</td>
<td>-0.220***</td>
<td>-0.105**</td>
<td>-0.162***</td>
<td>0.448***</td>
<td>-0.0620</td>
<td>0.006</td>
<td>1</td>
<td></td>
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<tr>
<td>l_TA</td>
<td>0.159***</td>
<td>-0.190***</td>
<td>-0.146***</td>
<td>0.334***</td>
<td>-0.129***</td>
<td>0.334***</td>
<td>-0.348***</td>
<td>0.216***</td>
<td>0.011</td>
<td>0.173***</td>
<td>0.0310</td>
<td>1</td>
</tr>
</tbody>
</table>

*= statistically sig at less than 0.01, ** statistically sig at less than 0.05, *** statistically sig at less than 0.001

LEV = total debt to total assets; AGE= the no. of years of the company from listing year; IND_DIR= the proportion of independent directors in the board; BOARD_SIZE = the total number of board members; FAMOWN = the percentage of shares owned by same family members; GOWN= percentage of shares owned by the government/bodies owned by the government; POWN= proportion of shares owned by the general public/individual; FOWN= percentage of shares owned by foreigners/ foreign parent company; InsOwn= the percentage of shares owned by institutions; MOWN= percentage of shares owned by the directors/managers; PROF= ROE measured as return on equity; l_TA= size of the company, measured as the natural logarithm of the total assets of the company.
6.3 Regression Model and Results

Table 4: Regression Result

<table>
<thead>
<tr>
<th>Model</th>
<th>Coefficient</th>
<th>T-statistic</th>
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</thead>
<tbody>
<tr>
<td>AGE</td>
<td>0.0057709***</td>
<td>[7.11]</td>
</tr>
<tr>
<td>IND_DIR</td>
<td>0.158306*</td>
<td>[1.95]</td>
</tr>
<tr>
<td>BOARD_SIZE</td>
<td>-0.0093013**</td>
<td>[-2.2]</td>
</tr>
<tr>
<td>FAMOWN</td>
<td>0.132591***</td>
<td>[2.67]</td>
</tr>
<tr>
<td>GOWN</td>
<td>0.2618568***</td>
<td>[3.7]</td>
</tr>
<tr>
<td>POWN</td>
<td>-0.0486002 [-0.67]</td>
<td></td>
</tr>
<tr>
<td>FOWN</td>
<td>-0.0411951 [-0.76]</td>
<td></td>
</tr>
<tr>
<td>InsOwn</td>
<td>-0.0460379 [-0.75]</td>
<td></td>
</tr>
<tr>
<td>MOWN</td>
<td>0.2758771*** [6.98]</td>
<td></td>
</tr>
<tr>
<td>PROF</td>
<td>0.1224411*** [2.91]</td>
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</tr>
<tr>
<td>1_TA</td>
<td>0.0132233* [2.41]</td>
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</tr>
<tr>
<td>Constant</td>
<td>0.2241731 [1.59]</td>
<td></td>
</tr>
<tr>
<td>Industry dummies</td>
<td>Included</td>
<td></td>
</tr>
<tr>
<td>Year dummies</td>
<td>Included</td>
<td></td>
</tr>
<tr>
<td>R-squared</td>
<td>0.31</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>791</td>
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</tr>
</tbody>
</table>

* p<0.1, **p<0.05, ***p<0.01

The result of the regression analysis is shown in Table 4. The overall model is significant with $R^2$ of 0.31, which implies that 31% of the variation in the dependent variable i.e. leverage, can be explained through ownership structure, as represented by the percentage of shares owned by different categories of shareholders, and the chosen control variables. Of the six independent variables studied, family ownership, managerial ownership and state ownership are significant at the 1% level, thus lending
support to the proposed hypotheses (H₁, H₂, H₃ respectively). In case of managerial ownership, we postulated (H₂) that it exerts a significant impact on leverage, without specifying the direction of influence. The coefficient yielded by the regression model for this variable is positive (β = 0.2758, p-value= 0.000), which implies that higher managerial ownership results in greater usage of debt. The coefficients for family ownership (β = 0.1326, p-value= 0.008) and state ownership are also positive (β = 0.2619, p-value= 0.000), confirming the original hypotheses (H₁ and H₃ respectively).

However, in contradiction to our hypotheses for institutional ownership and foreign ownership (H₄ and H₆ respectively), these two variables are not found to have any statistical significance in explaining capital structure. Finally, individual/public ownership is the only variable which was expected to not have any impact on leverage (H₆) and the regression result supports this presumption. Between the two governance related variables, proportion of independent directors is not significant at the 1% or 5% level (p value 0.052), but board size can be said to have a significant and negative impact on leverage (β = -0.009, p-value= 0.028) with about 93% confidence. In addition, the influence of all the firm-specific control variables (age, size and profitability) is significant and positive.

7. DISCUSSION

The positive influence of family ownership on leverage revealed by our study is consistent with the findings of many previous researchers (eg. King & Santor, 2008; Lisboa, 2015). This may be attributed to several factors. First, as mentioned while developing our hypothesis (H₁), succession is a major concern of family-owned businesses and since avoiding the issuance of new equity is key to preserving this target, debt becomes the preferred form of external finance. Supply-side dynamics are also important here. Although some researchers have suggested that family firms are characterized by informational opacity (Ramalho et al., 2018) and have difficulty in accessing loans, others have argued that owners of family firms are able to build personal, durable relationships with the external providers of finance (Dwaikat et al., 2014). In line with Masum and Parker (2013), we believe that the latter holds true for family owned businesses in Bangladesh, particularly because a single sponsor family often owns and controls several businesses (Sobhan, 2016), giving them higher visibility and bargaining power. These, coupled with the limited monitoring role played by banks, as discussed earlier, can explain why increase in family ownership leads to increase in debt levels.

Given that family ownership has a positive impact on leverage, it is hardly surprising that the coefficient of managerial ownership is also positive, as many of the owner-managers are, in fact, family members. Evidence that family owners and managers are often one and the same can be found in Farooque et al. (2007), who state that more than three-fourths of CEOs are shareholders of Bangladeshi firms, either as founder shareholders or as descendants of founding families. Similar evidence of overlap between family ownership and the managerial function has been found by Sobhan and Warner (2003). Hence, there is natural alignment between the preferences of
owners and managers, leaving little room for Type-I agency conflict. In those cases where managers are not family members, it is possible that they view the usage of debt as a means of avoiding the dilution of equity, thereby preserving their control over the firm (Vo & Nguyen, 2014).

Based on the ability of state-owned firms to withstand financial distress and secure debt financing on favorable terms, we hypothesized that higher state ownership leads to higher leverage, which is supported by the model. Most previous studies have also found the same (eg. Zhang, 2013; Mukonyi et al., 2019). It is notable that much like the Chinese context discussed by Zhang (2013), the Government of Bangladesh plays a dual role as majority shareholder of some listed companies and owner of public-sector banks, which further enhances the accessibility of debt.

Although our model (in line with Mukonyi et al., 2019) shows an insignificant impact of institutional ownership on leverage, we believe that the possible reasons for this warrant a deeper look. First, as mentioned in Yoshikawa and Rasheed (2010), external blockholders can be classified as pressure sensitive versus pressure resistant. Banks, insurance companies, etc. are classified under the former as they often have business relationships with the firms in which they hold stock and may be influenced by managers. Hence, despite their potential to influence decision making, they choose not to, as long as their interest payments are not threatened. Evidence that banks in Bangladesh do not exercise their power can be found in Uddin and Choudhury (2008), who report that unlike developed countries, the influence of institutional investors is almost absent in Bangladesh. This perhaps explain why institutional shareholding has no impact on leverage.

Although the insignificance of foreign ownership contradicts our original hypothesis, it is hardly surprising that individual ownership has no impact on capital structure. As stated at the time of developing the latter hypothesis (H6), individual shareholders typically represent diffuse ownership and are unable to take concerted action. This is corroborated by Uddin and Choudhury (2008) and by Sobhan and Werner (2003) who find that annual general meetings of listed firms in Bangladesh are typically ritualistic in nature, with general shareholders lacking the power, knowledge or willingness to challenge majority shareholders. This implies that there is strong potential for Type II agency conflict in Bangladesh, whereby family or non-family majority owners may pursue their self-interest at the expense of smaller shareholders.

Among the control variables, the presence of independent directors is not found to have any impact and this resonates with our original contention that ‘independence’ may exist merely on paper in Bangladesh, with limited ability of such directors to influence critical decisions. The other governance variable, i.e. board size has a negative impact. When evaluated in relation to the positive sign demonstrated by managerial ownership and family ownership, this may indicate that the higher the number of members in the board, the more they tend to counterbalance the predilection of family owners and owner-managers towards debt.
To a certain extent, our findings can be aligned with both the pecking order theory and the trade-off theory. The fact that increase in both family ownership and managerial ownership lead to increase in leverage can be interpreted as indicating that irrespective of whether they are the same or different entity, both categories of owners view debt as less intrusive and it comes above external equity in their hierarchy of financing options. This is in line with the pecking order theory. Also, information asymmetry which is seen as a barrier in availing external finance under this theory, may be less of a problem in the Bangladesh context owing to close relationships between businesses and their banking partners (Masum & Parker, 2013), thus facilitating the usage of more debt.

In a different vein, it may also be argued that the pursuit of higher debt levels by family owners and managers is indicative of their efforts to minimize the cost of capital and maximize the value of the firm, by reaching for the optimal capital structure, thus representing alignment with the trade-off theory. Interestingly, the positive coefficient of profitability found in our study contradicts the pecking order hypothesis, as it implies that firms are using debt despite having internal funds. It is, however, in sync with the trade-off theory as it may signify that more profitable firms find the interest tax shield to be more attractive (Booth et al., 2001).

8. CONCLUSION

In this paper, we strive to shed some light on ‘the capital structure puzzle’ as coined by Myers (1984), by investigating whether capital structure decisions in publicly held non-financial companies can be attributed to the ownership stake of different categories of shareholders. The study was conducted in the context of Bangladesh, which represents a fine alignment with the emerging market typology. Hence, the findings can be extended to other emerging market countries as well, making it a valuable addition to the literature.

Using pooled OLS regression with leverage (total debt to total assets ratio) as the dependent variable, we find that family ownership and managerial ownership both have a significant and positive impact on leverage. It is not surprising that these two variables are in harmony in terms of the direction of influence, since there is ample evidence to indicate that owner-managers in many listed companies are members of founding families. However, a more compelling question is why family owners and/or managerial owners prefer to use more debt. First, it may be indicative of a desire to retain control and prevent the dilution of equity. Second, it may be representative of these shareholders’ desire to take advantage of the tax shield offered by debt and minimize the cost of capital, thereby enhancing the value of the firm.

However, several previous studies suggest that the nexus between ownership structure and capital structure decisions is one that cannot be fully understood without regard to the institutional context of the country in question (Li et al., 2009; Schmid, 2013).
This is because the institutional context determines the supply side of the financing equation. At the same time, the level of accountability inherent in it can shape the preferences of those who demand capital.

As discussed in this paper, several institutional voids such as inadequate regulatory enforcement, weak capital market and inadequate mechanisms for corporate control, characterize the Bangladesh context. According to Chakrabarty (2009), such institutional voids reinforce family ownership and control. Coupled with the political affiliations of many large family owned firms, this leads us to pose the following question: Does the pursuit of higher leverage by family owners and managerial owners represent value maximizing behavior? Or, does it represent a form of opportunism, where they take on more debt not because they should, but simply because they can? Our results show that leverage is positively related to profitability, which means that firms may be resorting to debt finance despite having internal funds. The rationality of such a choice deserves further investigation and this can be addressed through future research.

We also find that individual investors have no impact on the leverage decision. In markets such as Bangladesh, where concentrated shareholding is common, institutional shareholders can play a critical role in counter-balancing the power held by majority shareholders (Joher et al., 2006). However, the influence of such shareholders is found to be almost non-existent in this and previous studies. This, along with the missing influence of independent directors, implies that firms lack an in-built monitoring mechanism for preventing potential opportunism by dominant shareholders, creating room for Type II agency conflict.

Whether such problems are more pervasive in family firms can be addressed through future research by creating sub-samples of family and non-family firms. Mixed-method research can also be used to solve the conundrum regarding value-maximization versus opportunism. This can be done for instance, by using qualitative techniques such as case study to scrutinize whether lax credit monitoring by banks and political affiliations of firms result in higher leverage, and complementing this with quantitative analysis to uncover how this impacts the value of the firm.
REFERENCES


