



Promoter's Shareholding, Financial Distress and Capital Structure Decisions: An Empirical Study of Indian Firms

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ABSTRACT: This paper examines the effect of promoter's shareholding and the level of financial distress on capital structure of Indian firms. Using the annual financial data of 1,102 non-financial firms listed on the Bombay Stock Exchange (BSE) from 2007 to 2019 in a panel structure, our study employs dynamic panel data techniques for analysis. The main objective of this paper is to find out how the financially distressed Indian firms choose debt in their capital structure and the role of promoter's shareholding in such choices. For this purpose, four groups of companies have been formed by combining various degrees of promoter's shareholding and the level of financial distress measured through Altman's Z-Score. Dummy variables were introduced to represent each group in the model. This paper uses industry leverage, net working capital to total assets ratio, growth opportunities (Market to book ratio), profitability, tangibility and size as the control variables in the final empirical model.

The findings provide that financially distressed Indian firms maintain higher leverage ratio than a financially non-distressed firm irrespective of the degree of ownership concentration in the hands of promoters. Since majority of Indian firms are owned by business families, this finding is completely opposite to the risk aversion behaviour of family-owned firms as advocated in literature.

KEYWORDS: Ownership concentration, Financial distress, promoter's shareholding, Dynamic panel data, Indian firms

1. INTRODUCTION

Most of the Indian firms are owned by business families. The family-owned firms tend to have concentrated ownership (Driffield et al., 2007) in the hands of promoters and such firms are generally managed by the family members or the people who are close to the family. A report published by Deloitte in January, 2013 revealed that more than 85% of the Indian firms were also owned by business families. Although in the last 10 years the proportion might have changed a bit. However, the sample data that we collected for the study, which we will describe in detail in the coming sections, also substantiates the fact that most of Indian firms are family owned. For the present study the data was collected for the period of 2007-2019. From our sample we found 56.53% firms with average promoter's shareholding of more than 50% and 79.56% firms were found to have promoter's shareholding more than 40% during the study

period. So, we assume that the Indian firms with very high promoter's shareholding mostly belong to business families. We also found that approximately two third of the sample firms (65.43%) were having promoters at executive positions.

With higher leverage ratio, the risk of losing control increases because the probability of bankruptcy increases with increasing leverage (De Angelo & De Angello, 1985; Mishra & McConaughy, 1999). Also, at very high level of managerial share ownership the managers borrow lesser to reduce their risk (Brailsford, 2002). Therefore, we expect that the Indian firms with very high promoter's shareholding should borrow lesser. Also, if a financially distressed firm raises more debt, it brings additional risk to the firm. Therefore, the Indian firms that are financially distressed and have high managerial share ownership should maintain lower leverage ratio to avoid additional risks.



However, the firms with high promoter's shareholding may find it easier to borrow from lenders for two reasons. One, with high promoter's shareholding with managerial control, the interest of managers and shareholders get intensely aligned (Ganguli, 2013; Mittal, 2020) reducing the classical agency conflict between manager and shareholders reducing the agency cost. Secondly, the promoters with very high ownership stakes provide a personal guarantee for the borrowed capital. Therefore, whenever the lending norms are relaxed and stimulus packages are on offer, the firms with high promoter's shareholding are better placed to exploit the offer. Such privilege may allow or incentivize the firms with high promoter's shareholdings to borrow more compromising with the risk that may lead to agency conflict between the lenders and the shareholders (Jensen & Meckling, 1976 and Barnea et. al., 1980). Also, the wish to maintain long-term control over the firm and exposure to limited financing options and other factors may also incentivize the firms to maintain higher leverage turning risk considerations associated with higher debt secondary (Burgstaller & Wagner, 2015).

These contradictory arguments raise some important questions for firms operating in India as India is a bank based economy and majority Indian firms are family owned.

- i. Whether the financially distressed Indian firms in general maintain higher leverage ratio or those financially distressed Indian firms that have high promoter's shareholding maintain higher leverage ratio?
- ii. Whether the firms that are financially sound but have high promoter's shareholding maintain higher leverage ratio?
- iii. Whether the firms that are financially distressed but have low promoter shareholding maintain higher leverage ratio?
- iv. Whether the firms that are financially sound but have low promoter shareholding maintain higher leverage ratio?

The analysis revealing the relationship between degree of promoter's shareholding and borrowing decisions by a firm when the firm is financially distressed will contribute to the existing literature which largely supports the argument that the family-owned firms borrow lesser to avoid additional financial risks. It will also help in understanding whether such borrowing behaviour is due to the institutional framework within which the firms operate or there are possible signs of agency conflict between shareholders (represented by promoter's managing the affairs of the firm) and lenders.

2. LITERATURE REVIEW

Ever since the empirical study on financing decision started appearing for the first time in 1980s, there has

been hundreds of research papers published on this topic. However, in last 20 years trade-off theory and pecking order theory has been extensively tested (Miglo et. al, 2010), the empirical findings largely lack any consensus over the factors that determine the target capital structure of an average firm. The review paper Satish kumar et.al (2017) reveals that year 2001 onwards the major work on determinants of capital structure gained momentum and the literature is dominated the presence of empirical research and secondary data analysis, mostly using regression techniques, of large firms in developed economies. Both pecking order theory and trade-off theory have been successful in explaining the broad financing patterns but neither of the theories has been successful in explaining much of the heterogeneity observed in capital structures (Graham and Leary, 2011; Gupta et al, 2022). Harris and Raviv (1991) through their excellent review paper report that the available studies generally agree that leverage of a firm increases with size of the firm, tangibility of the assets, growth opportunities, and non-debt tax shield and decreases with expenditures made on research and development, advertisement expenses, uniqueness of the product, profitability and bankruptcy probability. However, it is expected that with changes in the world economy in the last thirty years the financing patterns might have changed over decades (Frank and Goyal, 2009). Therefore, the researchers have started looking at alternative explanations to gain more insights into the corporate financing decisions along with the traditional pecking order theory, trade-off theory and agency cost theory.

In the Indian context the empirical evidences obtained through dynamic panel data analysis conducted by Khasnobis and Bhaduri (2002) for 697 firms for the period of 1990-1998 revealed that the lag term of the dependent variable i.e. leverage and size were positively related with the long term borrowings and profitability was negatively related to the leverage ratio. Another attempt by Chakraborty (2010) to analyze the factors influencing the capital structure of the Indian firms using a panel data analysis of 1,169 Indian non-financial firms that were listed on either NSE or BSE for a period of fourteen years from 1995-2008 applying fully modified OLS and GMM revealed that leverage was negatively correlated with profitability, growth and size but shown a positive correlation with tangibility of the assets, non-debt tax shield (NDTS) and product uniqueness. The positive correlation of NDTS with firm leverage is in contradiction to results obtained in the studies by Ozkhan (2001) and Huang and Song (2006). Both the studies by obtained data from CMIE database Prowess.

Jensen and Meckling (1976) predicted that firms with concentrated ownership tend to have lower leverage as higher debt levels bring more monitoring. However, it may be true for economies with market based financial systems, India being an economy with banking based financial system may have an opposite story. Two recent

India based studies have provided mixed evidences. Chadha and Sharma (2015) found a negative relationship between promoter shareholding and leverage. But, Ganguli (2013) observed a positive relationship between the two. A comprehensive study of Latin American firms by Jacelly Céspedes et. al (2010) also finds evidence consistent with the argument that firms with concentrated ownership tend to have higher leverage as they avoid equity issue to avoid losing control over the firm.

Debt is believed to be a tool to reduce the conflict between shareholders and managers, reducing the agency cost, but the same leads to agency problem between shareholders and debt holders (Jensen and Meckling, 1976). Harris and Raviv (1991) suggest that as per agency theory predictions the leverage is positively associated with default probabilities. Indian corporate sector is also characterized by concentrated shareholding with promoters controlling the firm operations as key managerial personnel. Now a few important questions arise:

- i. What happens to capital structure of Indian firms when they are financially distressed?
- ii. Do financially distressed firms that have high promoter's shareholding maintain higher leverage ratio and the financially distressed firms that have lower shareholding concentration in the hands of promoters maintain a lower leverage ratio?
- iii. Whether the financially distressed Indian firms maintain higher leverage ratio irrespective of the degree of ownership concentrated in the hands of promoters?

If the statistical evidences support that financially distressed firms that have higher promoter's shareholding maintain higher leverage ratio and financially distressed firms that have lower promoter's shareholding maintain lower leverage ratio, there are strong reasons to apprehend presence of agency conflict arising due to ownership concentration in the hands of promoters that needs to be investigated further. However, if the statistical evidences support that the financially distressed Indian firms, in general, maintain higher leverage ratio irrespective of the degree promoter's shareholding, such behaviour may be attributed the following two reasons:

- i. The financially distressed firms would be avoiding equity issue as they expect their share prices to be undervalued.
- ii. The decision to maintain higher leverage ratio may also be guided by the desire to maintain control over the firm (Stulz, 1988; King & Santor, 2008; Croci et al., 2011), even if it means taking more financial risks.

In this section we develop the following research hypothesis:

- H-1: The financially distressed firms with high promoter's shareholding maintain higher leverage ratio.
- H-2: The financially distressed firms with low promoter's shareholding maintain lower leverage ratio.
- H-3: The firms that are not financially distressed and have high promoter's shareholding maintain higher leverage ratio.
- H-4: The firms that are not financially distressed and have low promoter's shareholding maintain higher leverage ratio.

3. DATA SAMPLE, VARIABLE DEFINITIONS AND METHODOLOGY

Data and sample Selection

This research paper uses annual financial data of 1,102 non-financial Indian firms that were listed on Bombay Stock Exchange (BSE) continuously for the years 2007-2019. The final dataset consists of 1,102 Indian firms for 13 years making it 14,326 firm year observations in a panel structure. The data has been primarily obtained from Centre for Monitoring Indian Economy (CMIE) database Prowess.

Dependent Variable

Leverage ratio (Long term debt/ Total assets) is the dependent variable used for empirical analysis in this paper.

Variables of interest (Dummy variables)

The different combinations of ownership concentration and financial distress form our variables of interest. To proxy the financial distress, Altman's Z-Score with its original coefficients (Altman, 1968) has been used in the paper. The equation of the same has been reproduced below.

$$\begin{aligned} Z_Score = & 0.012 * \text{Working capital/Total assets} + 0.014 \\ & * \text{Retained Earnings/Total assets} + 0.033 * \text{Profit before} \\ & \text{interest and taxes/Total assets} + 0.006 * \text{Market value} \\ & \text{of equity /Book value of total debt} + 0.999 * \\ & \text{Sales/Total assets} \end{aligned}$$

Altman (1968) formed three groups based on the Z-Score values, distressed firms with Z-Score less than or equal to 1.81, safe firms with Z_Score more than 3 and there were no conclusions drawn for the firms having Z_Score in the range 1.82 to 2.99. For the analysis purpose, however, only two categories of distressed firms and non-distressed firms were formed. Those firms were termed as distressed firms that assume a Z-Score up to 1.81 (Z_Score ≤ 1.81) and the firms that assumed a Z-Score more than 1.81 (Z_Score > 1.81) have been classified as non-distressed firms.

To conduct the empirical analysis the dummy variables were introduced combining proportion of promoter’s shareholding and degree of financial distress measured by Altman’s Z-Score. Two groups of promoter’s shareholdings were formed- more than or equal to 50% (PSH \geq 50%) and less than 50% (PSH $<$ 50%). These groupings of Z-Score and promoter’s shareholding make four combinations that have been produced in table 1 along with the respective expected signs of the coefficients of the dummy variables representing these groupings.

Table 1: Combinations of promoter’s shareholding and degree of financial distress

	Expected Coefficient Sign	Z-Score	
		Distressed (Z \leq 1.81)	Non-Distressed (Z $>$ 1.81)
High PSH* (PSH \geq 50%)	+Ve	Asset Substitution (high probability of assets substitution taking place in favor of shareholders)	Expected
	-Ve	Expected	Risk aversion
Low PSH* (PSH $<$ 50%)	+Ve	Asset Substitution (high probability of assets substitution taking place in favor of managers)	Expected
	-Ve	Expected	Risk Aversion

*PSH= promoter’s shareholding

The firms that are financially non-distressed have more debt capacity as they can serve the debt better than financially distressed firms, and therefore, if these firms borrow more it can be interpreted as normal expected decision. However, if these firms borrow lesser, it can simply be interpreted as decision to avoid risks that goes in line with the argument that the firms owned and managed by business families maintain lower leverage ratio to avoid risks.

The firms that are financially distressed should normally borrow lesser to avoid any further strain on their already strained cash flows and to reduce bankruptcy probability. However, if the firms that are financially distressed maintain higher leverage ratio, it may be due to two reasons. One, as these firms are financially distressed, these firms may find the equity issue to be very costly, and hence, the firm managers may prefer issuing debt. Second, these firms may raise debt if they have high risky

projects under consideration and may shift the risk of failure towards lenders due to their limited liability. However, if the project is a success, it will help the firms to improve their performance and overcome the financial distress creating more value for the shareholders in the form of better market price of their shares as well as for the firm managers in the form various incentives. Such financing decisions provide a strong reason to apprehend agency conflict between debtholders and shareholders..

Dummy1 (D1HD): Dummy variable representing firms with combination of high promoter’s shareholding (PSH \geq 0.50) that are financially distressed (Z_Score \leq 1.81). If there are no signs of agency conflict, we would expect a significant negative sign for the coefficient of this dummy variable. However, a significant and positive sign for this dummy variable signals probability of agency conflict between debtholders and equity shareholders leading to substitution effect. Such assets substitution is expected to benefit shareholders the most as the management is expected to take shareholders value maximizing decisions at high levels of ownership concentration as the interest of the shareholders and managers get intensely aligned.

Dummy2 (D2HND): Dummy variable representing firms with combination of high promoter’s shareholding (PSH \geq .50) that are not financially distressed (Z_Score $>$ 1.81). We expect a significant positive sign for the coefficient of this dummy as safer firms have better borrowing capacity. However, a significant and negative sign signals risk aversion by the firms.

Dummy3 (D3LD): Dummy variable representing firms with combination of low promoter’s shareholding (PSH $<$.50) that are financially distressed (Z_Score \leq 1.81). We expect a significant negative sign for the coefficient of this dummy variable. However, a significant and positive sign for this dummy variable signals probability of assets substitution. Such assets substitution may benefit both the management and the shareholders at the cost of lenders. However, since the promoter’s shareholding is lower in firms belonging to this group, there is high probability of management getting benefited the most from such decisions and small benefits getting accrued to the shareholders.

Dummy4 (D4LND): Dummy variable representing firms with combination of low promoter’s shareholding (PSH $<$.50) that are financially non-distressed (Z_Score $>$ 1.81). We expect a significant positive sign for the coefficient of this dummy variable. **However, to avoid the dummy variable trap this dummy variable has been dropped from the final model used for empirical analysis.**

Control Variables

We have used the following control variables in our model.

Variables	Proxy
Profitability (Profit before interest and tax/ total assets)	Profit
Industry Leverage (Average leverage of the firms in an industry)	Ind. Lev.
Size of the firm (Natural log of total assets)	Size
Growth (Total assets- book value equity + market capitalization of equity)/total assets.)	MTB
Working capital to total assets ratio ((Current assets- current liabilities)/ total assets)	WCT A
Tangibility (Net fixed assets / total assets)	Tangi bility

The summary descriptive statistics of these variables have been produced below in table 2.

Table 2: Summary statistics (2007-2019)

	Mean	St. Dev	Median
Leverage	0.3615	0.2182	0.3466
Ind Lev	0.3611	0.1102	0.3532
Size	3.4751	0.7856	3.4457
Tangibility	0.3180	0.1753	0.3040
WCTA	0.0677	0.1889	0.0350
Profit	0.0959	0.1088	0.0887
Z Score	1.0982	0.6711	0.9877
PSH	0.5221	0.1648	0.5235

Model for empirical analysis

We have used the following empirical model (equation 1) to assess the effects on the leverage ratio of the firm, if the firm belongs to one of the four groups formed above. The groups are represented by their corresponding dummy variable.

$$Lev_{i,t} = \alpha + \delta_1 Lev_{i,t-1} + \beta_1 Ind_Lev_{i,t} + \beta_2 Size_{i,t} + \beta_3 WCTA_{i,t} + \beta_4 MTB_{i,t} + \beta_5 Profitability_{i,t} + \beta_6 Tangibility_{i,t} + \theta_1 D1HD_{i,t} + \theta_2 D2HND_{i,t} + \theta_3 D3LD_{i,t} + u_i + \epsilon_{i,t} \dots \text{equation 1}$$

Where,

- α = the constant term used in the model
- β_s = respective beta coefficients of the explanatory variables
- δ = the coefficient of the lag term of the dependent variable
- θ = the coefficients of the respective dummy variables
- i = the ith firm for $i=1,2,3,\dots, N$ (number of firms)
- t = time representing the financial years 2006-07 to 2018-19
- u_i = unobservable firm specific time invariant heterogeneity
- $\epsilon_{i,t}$ = error term

The dummy variables D1HD, D2HND and D3LD assume a value of 1 if the observations belong to their respective group categories.

4. EMPIRICAL RESULTS AND ANALYSIS

The empirical results obtained from the dynamic panel data analysis using equation 1 have been produced below in table 3.

Table 3: Dynamic panel data output (dependent variable- leverage)

	Leverage
Leverage _{t-1}	0.775*** (22.09)
Ind_Lev	0.117*** (4.18)
WCTA	-0.0758*** (-3.15)
MTB	0.00492*** (2.83)
Profitability	-0.315*** (-5.93)
Tangibility	0.0106 (1.00)
Size	0.00692*** (4.31)
D1HD	0.0066* (1.70)
D2HND	-0.00317 (-0.32)
D3LD	0.00887** (2.25)
Constant	0.394*** (4.18)
No. of observations	13224
No. of firms	1102
Year dummies	Yes
No. of instruments	41
AB AR(1) p-value	0.0000
AB AR(2) p-value	0.1055
Sargan-Hensen (p-value) for 2-step moment functions	
2-step weighting matrix	0.1093
3-step weighting matrix	0.1332
Std. errors	Robust

t statistics in parentheses * p<0.1, ** p<0.05, *** p<0.01

The lag term of the dependent variable, leverage, is significant and less than 1 at 0.775 that validates the applicability of dynamic model. Further, the sign of coefficients of dummy variable D1HD representing financially distressed firms with high promoter’s shareholding is significantly positive providing evidence that these financially distressed firms use more debt to finance their projects than a non-financially distressed firm with low promoter’s shareholding. This finding makes confirms that firms with greater promoter’s



shareholding borrow more even if these firms are financially distressed. Combined with the fact that majority of Indian firms are owned by business families, we provide an important contribution to the existing literature on family-owned firms and capital structure by contributing that family-owned Indian firms borrow more even if it brings more risks for their business. This finding is completely opposite to the risk aversion behaviour of family-owned firms as advocated in literature (Driffield, 2007; Caprio et al., 2011). However, we didn't find any significant impact of the second dummy variable, D2HND, representing financially non-distressed firms with high promoter's shareholding.

The impact of third dummy variable D3LD on leverage is also significant and positive that also indicates that the financially distressed Indian firms even with low promoter's shareholding also employ more debt to finance their investments. The findings help in concluding that irrespective of whether ownership concentration in the hands of promoters is high or low the Indian firms borrow more when they are financially distressed.

We also experimented with the fourth dummy variable D4LND by introducing this variable in the model keeping the second dummy variable, D2HND out from the model but found no significant results for the same.

The control variables net working capital to total assets ratio and profitability are showing highly significant negative impact on the firm's leverage and the control variables growth opportunities, industry leverage and size have positive and significant impact on the firm's leverage. However, we didn't find any statistically significant impact of assets tangibility on leverage ratio.

5. SUMMARY

The main objective of this paper was to find out how does financially distressed Indian firms choose debt as an option to finance their assets and whether promoter's shareholding has any role in such choice. Our findings provide that financially distressed firms use greater amount of leverage than a financially non-distressed firm irrespective of the degree of ownership concentration in the hands of promoters. The conclusions are also the answers to the questions raised in the beginning of this paper.

Another significant contribution of this research paper is to the existing literature on family-owned business firms and capital structure by contributing that family-owned Indian firms borrow more even if it brings more risks for their business. This finding is completely opposite to the risk aversion behaviour of family-owned firms as advocated in literature.

Using a large financial data set of 1,102 non-financial firms listed on BSE Sensex for a long period of 13 years from the financial year 2006-07 to year 2018-19, we

provide an alternate explanation to the observed heterogeneity in leverage ratio of the firms than the available explanation provided by pecking order theory and the trade-off theory in the literature. The explanations in this paper are much closure to the agency theory explanations.

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