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Sumit K. Majumdar
School of Management, University of Texas

Kunal Sen
IDPM, University of Manchester

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Sumit K. Majumdar
School of Management
University of Texas at Dallas
Richardson, TX 75083, USA
majumdar@utdallas.edu

Kunal Sen

IDPM, University of Manchester
Harold Hankins Building
Booth Street West
Manchester, M13 9QH
United Kingdom

Phone: +44-161-275-2800
Fax: +44-161-273-8829

Email: idpm@manchester.ac.uk

Corresponding Author: Professor Sumit Majumdar, School of Management
University of Texas at Dallas
Richardson, TX 75083, USA
FAX: 1-972-883-4786
Email: majumdar@utdallas.edu

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Abstract

The agency cost theory of the firm predicts that managers will engage in diversification if there are lax internal or external monitoring mechanisms. Previous studies that have examined the effect of capital structure on firm diversification have focused on the structure of equity rather than the structure of debt. In this paper, we test the agency cost perspective on the relationship between debt structure and corporate diversification and find some empirical support for this perspective using a large cross-sectional dataset of firms in India.

Key words: Agency cost; capital structure, diversification; Indian industry.

I. INTRODUCTION

The agency cost theory of the firm is one of the most influential perspectives on why firms diversify. According to this perspective, managers derive private benefits from diversification that exceed their private costs (Amihud and Lev 1981, Montgomerty 1994, Denis et al. 2002). The agency cost theory predicts that managers will engage in diversification if there are lax internal or external monitoring mechanisms. In contrast, managers will reduce diversification only if pressured to do so by such mechanisms.

So far, most of the studies have examined agency issues in the context of the relationship between the structure of equity ownership and firm diversification (Denis et al. 1997, Singh et al. 2004, Jiraporn et al. 2006). These studies find that the level of diversification is negatively related to managerial equity ownership, the strength of shareholder rights and the equity ownership of outside blockholders. Thus, as managers' ownership stakes increase, they have to incur a greater fraction of the costs associated with value reducing actions relating to excessive diversification and are therefore less likely to adopt policies that reduce shareholder wealth. Similarly, outside blockholders can play a useful external monitoring role, and, therefore, their presence in the firm's ownership structure will imply that managers are less likely to engage in diversification. Moreover, weak shareholder rights would allow managers to engage a larger degree of corporate diversification (Jiraporn et al. 2006).

In contrast to the large empirical literature that exists on testing for the implications of the agency cost perspective related to the structure of equity and firm diversification, there has been little interest in the literature in examining the implications of the agency cost perspective on the relationship between the structure of the debt of a firm and its diversification strategy. In this paper, we develop testable hypotheses from agency cost theory on the impact of debt structure on

corporate diversification. We argue that if the agency cost perspective is valid, a greater reliance on debt as supplied by banks and financial institutions will imply less diversification than if firms relied more on arms length debt such bonds and fixed deposits. This is because banks and financial institutions are more able to monitor managers of firms than holders of bonds and fixed deposits.

Using data for 1,052 firms in India, we find support for the agency cost perspective as applied to the structure of debt and its impact of firm diversification. India is a major emerging economy, which makes it particularly appropriate as a case study. Furthermore, detailed data is available on the structure of debt of both diversified and undiversified firms in India. Finally, the Indian economy is also an interesting context because of the importance of debt financing in industry. Unlike in the West, where debt ratios that are more than half of nominal equity capital values are considered to be high, in India high debt to equity ratios is the norm (Majumdar and Chhibber, 1998; Majumdar and Sen, 2006).

In the next section, we develop a set of hypotheses from the agency cost literature on the relationship between debt structure and firm diversification. Section 3 presents the data and the variables to be used in the regression analysis and discusses the econometric methodology. Section 4 motivates the empirical analysis by first presenting some descriptive statistics and then presents the results of the regression analysis. Section 5 concludes the article.

II. DEBT STRUCTURE IN INDIA, AGENCY COST AND DIVERSIFICATION

The Indian Debt Providers: In India, firms borrow using five types of debt instruments. These are: (1) short-term borrowings from commercial banks; (2) long-term borrowings from term-lending institutions, which we will call institutional borrowings; (3) borrowings in the form

of debentures which are corporate bonds that in some, but not in all, cases are converted to shares after a specific lock-in period; (4) fixed deposits, which are deposits that yield a specified rate of interest over a given period of time from the market; and finally (5) a residual category called 'other borrowing' which includes trade credit and other funds accessed from the inter-corporate market (Majumdar and Sen, 2006).

The four major types of debt can be classified according to whether the debt is monitored or arm's length. Bank borrowings and institutional borrowings can be classified as monitored debt and debentures and fixed deposits can be classified as arms length debt (Majumdar and Sen, 2006). Both credit and bond markets have existed in India for a long time. Modern banking began in India in the eighteenth century with the founding of the English Agency House in Calcutta and Bombay, followed in quick succession by the establishment of three Presidency banks (Banerjee et al. 2004). With the introduction of limited liability in 1860, private banks began to appear. Joint stock banks came into being in the beginning of the twentieth century. Commercial banking grew very rapidly in the colonial period (Roy, 2000). After a period of social control of banking between 1969 and 1991, there were extensive reforms in the Indian financial sector, allowing banks to set interest rates on their own accord and to lend to firms and households without significant restrictions on whom they lend to (Sen and Vaidya 1997).[1]

With respect to institutional borrowing, these are essentially provided by term-lending institutions and are mainly long-term loans that are secured on the assets bought with these loans. Term-lending institutions were established, de-novo, by the government after independence. For example, the *Industrial Finance Corporation of India* was set up in 1948, and the *Industrial*

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[1] However, priority sector lending requirements, which were introduced in the socialist era, were kept in place. Under these regulations, banks had to lend a certain proportion of their funds to small firms and the agricultural sector.

Development Bank of India in 1964. These are the two major suppliers of long-term loans to Indian industry. There are also a number of specialized long-term lenders, owned by the government, such as the *Industrial Reconstruction Bank of India*, the *Small Industries Development Bank of India* and the *Shipping Credit and Investment Corporation of India*. A major quasi private-sector financial institution, the *Industrial Credit and Investment Corporation of India*; was also established in 1955. In the establishment of this unit, the government's blessing was paramount. Thus, as in the case with commercial banks, term-lending institutions have a long history of lending to the Indian corporate sector, dating back to the late 1940s.

The Indian capital market also dates back to the colonial period with the establishment of the first stock market in India in Bombay in 1857. During the colonial period, many Indian firms tried to popularize debentures as a source of financing with some success (Roy, 2000). Since independence, in line with the Indian government's socialist policies in other areas, there was strict control by the government on the pricing and new issues of capital, including corporate bonds. This was done via the office of the Controller of Capital Issues, an important unit in the Ministry of Finance.

In 1991, the pricing of new issues was freed along with a relaxation of the restrictions on firms to approach the capital market for funds. In 1992, the government allowed Indian firms with good track records to issue debentures in foreign capital markets. In the post-1991 period, there was a strong growth in the bond market with the introduction of many new and innovative types of bonds (Sen and Vaidya, 1997). The issuance of bonds and fixed deposits became an important mechanism for raising external funds for many Indian firms during this period, with the share of capital market-based instruments in total funds increasing from 17.3 per cent in the period 1985-86 to 1990-91 to 22.3 per cent in the period 1991-92 to 2000-01 (Reserve Bank of India, 2003).

Motives for Diversification: Several arguments exist on why managers derive private benefits from diversification. First, managers derive a certain degree of power and prestige in managing a larger firm (Jensen 1986, Stultz 1990). Second, managerial compensation increases with firm size (Jensen and Murphy 1990). Third, diversification may reduce the risk of managers' undiversified personal portfolios (Amihud and Lev 1981). Finally, diversification may make managers indispensable to the firm (Shleifer and Vishny 1989). At the same time, value losses associated with corporate diversification suggest that holders of debt not would allow managers to engage in costly diversification if they could prevent it (Berger and Ofek 1995; Lang and Stultz 1994; Servaes 1996). Whether debt holders can prevent firm diversification would depend on the knowledge that suppliers of debt to firms would have on the strategies of the firms' managers.

Firms usually borrow using two principal types of debt instruments: loans from banks and other financial intermediaries, and the issuance of bonds to financial institutions such as mutual funds, to individuals and to other firms. The agency cost literature has emphasized the advantage of monitored debt such as bank borrowing in reducing informational and monitoring costs as compared to arm's length debt (Fama, 1985; Rajan, 1992; Aoki, 2001). According to this view, financial markets are characterized by moral hazard problems and asymmetric information between lenders and borrowers, as lenders cannot distinguish between good borrowers and bad borrowers (Stiglitz and Weiss, 1983). Given that lenders face significant information asymmetries that create possibilities for opportunism by better-informed firms, banks and other financial intermediaries can play an important role in governing banks (Chirinko and Elston, 2005).

In contrast, arm's length lenders, such as bondholders, will have to rely on publicly available information or expend significant resources to obtain privately held information about the firm. Unlike banks and financial intermediaries who may appoint representatives in the board of directors of firms so as to monitor these firms, arms length lenders do not have the same governance mechanisms with the firms they lend to. Arm's length debt is associated with higher information costs and less possibilities of monitoring than debt held by financial intermediaries. This would imply that firms with a greater reliance on arms length debt, *ceteris paribus*, would have more lax external monitoring mechanisms.

We propose two testable hypotheses on the firms' debt structure, using insights from the agency cost literature and the Indian situation. These are:

Hypothesis 1: The greater the reliance by firms on borrowing from banks and other financial institutions, the less likely it is that firms will diversify.

Hypothesis 2: The greater the by firms reliance on debentures and fixed deposits, the more likely it is that firms will diversify.

III. DATA, VARIABLES AND EMPIRICAL ANALYSIS

III. 1 Data

This study has used firm-level data for 1,052 Indian firms listed on the *Bombay Stock Exchange* for the period 1988 to 1993 to evaluate the predilections of diversification given the presence of different types of debt. The data were collected from multiple sources. The *Center for the Monitoring of the Indian Economy* (CMIE) provided initial data. The corporate borrowing data was taken from the balance sheets of individual firms. Thereafter, details on ownership and aspects of firm behavior and performance were collected from the *Bombay Stock Exchange* and the office

of the *Registrar of Companies* in the *Ministry of Law, Justice and Company Affairs* of the Government of India.

The principal limiting factor was the availability of ownership data, which were not readily available for all firms. In conjunction with the guidance provided to us by officials of the *Department of Statistical Analysis and Computer Services* of the Reserve Bank of India, we were able to collect ownership data for the sample of firms included in the study. The data collected are cross-sectional and not time-series because of difficulties associated with obtaining ownership patterns. We cannot construct a cross-sectional and time-series panel data set. Each observation in the data set belongs to one specific year.

III.2 Variables

Our database provides details of the composition of the total debt that each company has. Given the relative level of debt within the firms' capital structure as a whole, which we control for using the debt equity ratio *(LEVERAGE)*, we estimate the impact of determinants of different types of debt for the companies studied on firms' diversification *(DIVERSITY)* which is coded as a 0 or 1 variable. The number 0 shows that the firm is not diversified. We do not have data on a firm's revenues form different types of businesses as these were not reported in the data base that was made available to us. The database only included an indicator variable, which we have used, to denote the presence of diversification.

Our independent variables of interest are the types of debt held by firms in India: (1) bank borrowings *(BANK)*; (2) borrowings from financial institutions *(INST)*; (3) debentures *(DEB)*; (4) fixed deposits *(FIXED)*; and (5) other borrowings *(OTHER)*. The last category is the base case in the regression model. The variables are measured as proportions of total debt, and not in absolute

terms. This detailed level of information on the debt structure of firms is unique, as data on the composition of debt for firms in emerging market economies are often quite difficult to obtain.

We also introduce several control variables that may impact on diversification by firms. These are, as discussed previously, the ratio of debt to equity to control for the original extent of leverage *(LEVERAGE)* given the importance of the capital structure issue in much of the literature, the size of firms measured as the log of sales *(SIZE),* an index variable for time *(TIME)* given that the observations straddle a period of years in which there has been a substantial institutional change because of the reforms and liberalization, the ratio of advertising expenditures to sales which measures the extent of advertising intensity *(ADVERTIZING),* the ratio of marketing expenditures to sales which measures the extent of marketing intensity *(MARKETING),* the ratio of distribution expenditures to sales which measures the extent of distribution intensity *(DISTRIBUTION),* the ratio of capital assets to total assets which measures the extent of capital intensity *(CAPITAL)* and the ratio of free reserves to total capital which measures the extent of freely available reserves that can be committed to strategic purposes *(RESERVES).*

A substantial literature in the diversification area, based on the works of Penrose (1959), has emerged stating that the extent of diversification is related to the availability of core assets and resources, built up over a period of time (Montgomery, 1994; Ramanujam and Varadarajan, 1989). In fact, this is almost an axiomatic and dominant view, the ideas of which have to be taken into account so that appropriate controls are included in the modeling.

Thus, the *SIZE* variable accounts for the overall capabilities of a larger firm to possess the wherewithal to diversify, while the *ADVERTIZING, MARKETING, DISTRIBUTION* and *CAPITAL* variables account for specific capabilities that a firm may have built up and are

reflected in the possession of brand name assets, a marketing platform, a distribution infrastructure and on technological capital assets. The *RESERVES* variable captures the extent of liquidity that a firm may possess, enabling it to diversify.

IV. RESULTS

IV.1 Descriptive statistics

We first present summary statistics of the key variables to be used in the empirical analysis in table 1 for all firms in the sample. The proportion of firms that are diversified is 17.6 per cent. Bank borrowings are the most important source of borrowing for firms in Indian industry, at an average level of 39.7 per cent of total borrowing, followed by borrowings from other financial institutions at 29.7 per cent. Debentures and fixed deposits comprise 11.6 and 5.8 per cent of total borrowing respectively, while other borrowing comprises 13.1 per cent of total borrowings.

Firms in India are very highly leveraged, with the mean debt equity ratio of the firms evaluated exceeding 2 times or 200 per cent of the nominal equity values. This phenomenon is a function of the soft-budget constraints that have been perpetrated in Indian industry over several decades (Majumdar, 1998). However, there is a wide variation in the debt-equity ratio among Indian firms, as indicated by the high coefficient of variation of 1.83. The importance of high levels of debt in Indian firms is also shown in figure 1, which is a diagram showing the distribution of debt. Less than 10 percent of the firms, 100 firms, in our sample have no debt at all, while 65 percent of the firms, 674 firms, have a leverage of that is over two times the nominal value of the equity invested. We also find that 195 firms, or over 18 percent, have debts levels that is over 4 times equity while 42 and 41 firms, each at least 4 percent of the sample,

have debts levels over 6 and over 8 times the nominal value of equity respectively. Clearly, external financing is a very large component of corporate sector financing in Indian industry.

IV. 2 Estimation

We estimate a logit model to evaluate the impact of different types of debt on the diversification variable. While the database contains a wealth of information on the composition of firms' debts, there is, unfortunately, no similar break up about the composition of firms' sales. The result is that diversity of firms is classified as a 0, 1 variable as to whether or not it is diversified. The estimation to be used in such circumstances is a logit model (Maddala, 1983), where the dependent variable takes the value if 0 if the firm is not diversified and 1 if the firm is diversified.

IV.3 Results

The results are presented in Table 2. In column (1), we first present the logit results without the leverage variable and the other control variables. In column (2), we add the leverage variable. In column (3), we drop the leverage variable and include the other control variables. Finally, in column (4), we include all the relevant variables. We find that the inclusion of the leverage variable is not material, as the difference in the log-likelihood ratio between column (1) and (2) is miniscule. On the other hand, inclusion of all the control variables in the regression, as shown in columns (3) and (4) of the results table, does lead to a large change in the log-likelihood ratio.

The striking result from our estimates is the positive and significant (at the 5 per cent level) coefficients for debentures *(DEB)* and deposits *(FIXED)* across all four columns. For each of the models, given the difficulties in interpreting logit coefficients, the estimated elasticities are also provided in an adjacent column. Taking the results from column (4), we find that the

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estimated elasticities are 0.373, -0.094, 0.168 and 0.098 for the commercial borrowing *(BANK)*, institutional borrowing *(INST),* debentures *(DEB)* and fixed deposits *(FIXED)* variables respectively. In other words, a ten percentage increase in the levels of commercial borrowings, institutional borrowings, debenture debt and debt via acceptance of fixed deposits is associated with 3.73, -0.94, 1.68 and 0.98 percent increases, or a decrease in the case of *INST*, respectively, in the probability that a firm will diversify

The other important result is that the probability of large firms diversifying is high, but this is a finding in accordance both with theory and reality, as well established in the strategic management literature (e.g. Montgomery, 1994). Second, the probability of less diversification being undertaken as the pace of liberalization progresses in India is also noted as firms are likely to be 'sticking to the knitting' in a more competitive environment. In the past, because of licensing restrictions, firms had to, perforce, diversify (Marathe, 1989). The result we obtain is in the nature of a market correction that has taken place after liberalization of the Indian economy. Finally, we note that the propensity for incurring relatively heavier advertising and marketing expenditures also leads to a significant probability that firms will diversify.

Thus, as predicted by the agency cost perspective on debt structure, arms-length creditors do not seem to be able to prevent managers of firms they lend to not to engage in empire-building diversification strategies. The weak control rights that arms-length creditors exert on firms they lend to along with the dispersed nature of the ownership of arms-length debt implies that the managers of these firms are able to act on their volition, and not be answerable to fixed deposit and debenture holders.

Also, as hypothesized, we obtain a negative and significant coefficient on financial institutions for the first two sets of estimates. However, the coefficient on bank borrowing is

positive and significant, albeit at the 10 per cent level, for the last two sets of estimates. This is a contradiction to what we may expect if the agency cost perspective on the determinants of firm diversification was valid. This may be explained by the structure of ownership of commercial banking in India, where 83 per cent of the banking business in India is in the hands of state-owned or nationalized banks (Banerjee, et al. 2004).

While in theory, state owned banks are owned by the public, the *de facto* control rights belong to the bureaucrats who manage these banks. While the bureaucrats have concentrated control rights, they have no significant cash flow rights because the cash flow rights of the firm is effectively dispersed amongst the tax payers of the country (Shleifer and Vishny, 1997). The separation of control and cash flow rights in publicly owned banking and financial institutions implies that the bureaucrats who manage banks in India have less of an incentive to monitor the actions of the managers of firms they lend to, who may then engage in excessive diversification. Thus, the specific institutional environment in India, with the high presence of public ownership among banks, may explain the positive and significant relationship between bank borrowing and firm diversification that we observe in the Indian context.

The presence of bureaucratic lethargy in state owned financial institutions have also been noted in previous studies, which have found that countries with higher government ownership of banks are associated with lower financial development and lower growth of per capita income and productivity and that the lending behaviour of state-owned banks is politically determined (La Porta et al., 2002; Sapienza, 2004).

V. CONCLUSIONS

Most studies that examine the relationship between capital structure and firm diversification have focused on the structure of equity rather than the structure of debt. In contrast to the previous literature, this paper examines whether debt structure matters in explaining which firms diversify. Using a unique dataset on a cross-section of Indian firms that disaggregate debt into its various components, we are able to conduct a fine-grained analysis of the effects of the different types of corporate borrowing on firm diversification in Indian industry. The importance of debt financing in India is considerably more important than in many other industrial economies. A substantial portion of the debt has been provided by government agencies and government owned financial institutions.

Using an agency cost perspective, we hypothesize that firms which rely more on monitored debt such as borrowings from banks and other financial institutions would be less likely to diversify than firms that rely more on arms-length debt such as debentures and financial institutions. We find limited support for the agency costs view of firm diversification. Arms length creditors such as debenture and fixed deposits holders do tend to have more lax monitoring mechanisms as evident from the positive and significant relationship between debentures and fixed deposits on one hand and firm diversification on the other.

At the same time, we find that greater reliance of firms on bank borrowing does not lead to a lower likelihood of these firms engaging in diversification strategies as may be expected from the predictions of agency cost theory. This, we argue, may be due to the widespread presence of public ownership among Indian banks, where the managers of publicly owned do not have monitoring the firms they are lending to. Thus, the results suggest that while theoretical perspectives derived from the modern corporate finance literature may need to be modified in

their application to take into account the specific institutional context of the emerging economy in question.

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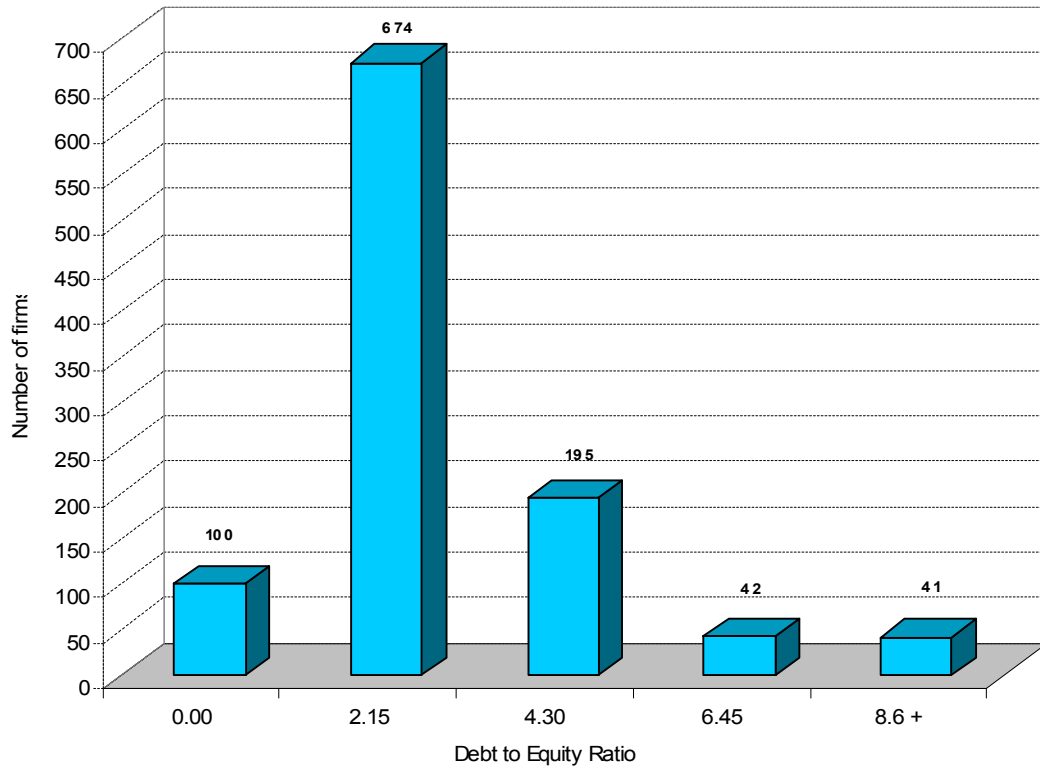Table 1: Distribution of debt equity ratio

Table 1: Variable descriptions and summary statistics

VARIABLE	VARIABLE DESCRIPTION	MEAN	STANDARD DEVIATION	COEFFICIENT OF VARIATION
DIVERSIFICATION	Dummy 1 if diversified; 0 if otherwise	0.176	0.381	2.16
BANK [a]	Percentage of debt provided by banks	39.69	23.89	0.60
INSTITUTION [a]	Percentage of debt provided by institutions	29.68	25.14	0.85
DEBENTURES [a]	Percentage of debt raised as notes	11.60	16.87	1.45
FIXED DEPOSIT	Percentage of debt from private individuals	5.76	12.04	2.09
OTHER DEBT [t]	Percentage of miscellaneous debt	13.10	17.59	1.34
LEVERAGE	Debt to equity ratio of the firm	2.07	3.80	1.83
SIZE [c]	Log of sales	3.91	1.35	0.35
TIME	Index variable for each year	4.22	1.13	0.27
ADVERTIZING	Percentage of advertising spending to sales	0.88	4.27	4.85
MARKETING	Percentage of marketing spending to sales	1.86	4.70	2.53
DISTRIBUTION	Percentage of distribution spending to sales	3.48	18.87	5.42
CAPITAL	Ratio of capital intensity to sales	0.52	0.74	1.42
RESERVES	Percentage of free reserves to total capital	21.75	86.34	3.97
	NUMBER OF FIRMS 1,052			

Note: a. as a percentage share of total debt; b. as a percentage share of total equity; c. log of sales.

Table 2: Logit regression estimates of the debt variables (other debt as the base case); the debt and leverage variables; the debt and control variables; and the debt, leverage and control variables - dependent variable: diversity

	Column (1)		Column (2)		Column (3)		Column (4)	
	Estimates	Elasticities	Estimates	Elasticities	Estimates	Elasticities	Estimates	Elasticities
Intercept	-1.696***	-4.033	-1.692***	-1.423	-5.175***	-4.576	-5.220***	-4.616
	(0.421)		(0.424)		(0.798)		(0.806)	
BANK	-0.000	-0.002	-0.000	-0.003	0.010*	0.367	0.010*	0.373
	(0.002)		(0.002)		(0.006)		(0.006)	
INSTITUTION	-0.016**	-0.291	-0.012**	-0.289	-0.004	-0.093	-0.003	-0.094
	(0.005)		(0.005)		(0.006)		(0.006)	
DEBENTURE	0.023***	0.226	0.023***	0.226	0.016**	0.167	0.016**	0.167
	(0.006)		(0.005)		(0.006)		(0.007)	
DEPOSITS	0.019**	0.091	0.019**	0.091	0.019**	0.096	0.019**	0.098
	(0.007)		(0.007)		(0.008)		(0.008)	
LEVERAGE			-0.002	-0.003			0.015	0.027
			(0.027)				(0.030)	
SIZE					0.813***	2.810	0.812***	2.805
					(0.118)		(0.111)	
TIME					-0.152*	-0.567	-0.148*	-0.554
					(0.084)		(0.084)	
ADVERTISING					0.044*	0.034	0.044*	0.034
					(0.029)		(0.029)	
MARKETING					0.038*	0.062	0.038*	0.062
					(0.020)		(0.020)	
DISTRIBUTION					-0.002	-0.006	-0.002	-0.007
					(0.005)		(0.005)	
CAPITAL INTENSITY					-0.154	-0.071	-0.161	-0.074
					(0.227)		(0.228)	
RESERVES					-0.001	-0.022	-0.001	-0.021
					(0.001)		(0.001)	
Maddala R^2	0.058		0.058		0.191		0.191	
Log likelihood	-458.02		-458.02		-377.79		-377.68	
Likelihood ratio test	62.420***		62.425***		222.882***		223.107***	

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$; standard errors in parentheses