Debt and Corporate Governance in Emerging Economies: Evidence from India*

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Abstract

We analyze the role of debt in corporate governance with respect to a large emerging economy, India, where debt has been an important source of external finance. First, we examine the extent to which debt acts as a disciplining device in those corporations where potential for over investment is present. We undertake a comparative evaluation of group-affiliated and non-affiliated companies to see if the governance role of debt is sensitive to ownership and control structures. Second, we examine the role of institutional change in strengthening the disciplining effect or mitigating the expropriating effect of debt. In doing so, we estimate, simultaneously, the relation between Tobin's Q and leverage using a large cross-section of listed manufacturing firms in India for three years, 1996, 2000, and 2003. Our analyses indicate that while in the early years of institutional change, debt did not have any disciplinary effect on either standalone or group affiliated firms, the disciplinary effect appeared in the later years as institutions become more market oriented. We also find limited evidence of debt being used as an expropriation mechanism in group firms that are more vulnerable to such expropriation. However, the disciplining effect of debt is found to persist even after controlling for such expropriation possibilities. In general, our results highlight the role of ownership structures and institutions in debt governance.

Keywords: Debt, ownership structure, corporate governance, institutional change.

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Introduction

The literature on corporate finance and governance widely recognizes debt as an important mechanism for solving agency problems in corporations characterized by separation of ownership and control. Specifically, as highlighted by Jensen (1986) and several others[1], debt could be an effective disciplining device in the hands of shareholders which can be used strategically to curb managerial actions that run counter to the objective of shareholder-value maximization. Managers have incentives to expand firm size beyond what is consistent with profit maximization because such "empire-building" often leads to increase in managerial power, prestige, perquisites, remuneration, and resources under managerial control. The strategic use of debt as a disciplining mechanism for reducing agency costs by aligning the interests of the shareholders and managers, is dubbed by Jensen (1986) as the "control hypothesis" for debt creation.

The role of debt as a potential disciplining mechanism, however, is considerably weakened in corporations where ownership structures are concentrated, and where management is most often drawn from among the controlling block of insider shareholders (Faccio *et al.*, 2001; Prowse, 1999). In such corporations, that are largely prevalent in Asia and Continental Europe, debt is instead posited to be used by controlling insiders as a mechanism for expropriation of minority shareholders and other outside stakeholders, like creditors. This can be dubbed as the "expropriation hypothesis" for debt creation.

In either case, the effectiveness of debt as a disciplining device or as a mechanism for expropriation, is considered to depend on the institutional context within which corporations are embedded such as the presence of a well-developed capital market and banking systems, effective bankruptcy laws, active takeover markets, and transparent auditing, accounting and disclosure norms (Berglof, 1995; Day and Taylor, 2004). For instance, the presence of an active takeover market can reinforce the disciplinary effect of debt (Zwiebel, 1996; Novaes and Zingales, 1995), while the absence of transparent accounting and disclosure norms, by adversely affecting the flow of accurate information to minority shareholders, may enable insider shareholders to use leverage more effectively for expropriation (Baer and Gray, 1996; Faccio *et al.*, 2001).

[1] Related literature emphasizing the role played by debt in reducing agency conflicts between managers and shareholders are Dewatripont and Tirole (1994), Jensen and Meckling (1976), Grossman and Hart (1982), Stulz (1990), and Hart and Moore (1995).

The objective of this paper is to analyze the role of debt in corporate governance with respect to a large emerging economy, India, where debt has played an important role as a source of external finance both in the pre-liberalized and post-liberalized scenario (see Singh, 1995; Sarkar and Sarkar, 2001). Empirical studies on the role of debt in corporate governance have been till date mostly confined to analyzing its disciplining role with respect to widely held corporations in developed market settings, particularly the US (see for example, Lummer and McConnell, 1989; McConnell and Servaes, 1995) where codified and enforced corporate governance mechanisms would already play an important role in reducing agency problems. There are, however, only a handful of studies with regard to the impact of debt financing on agency costs of firms with respect to emerging and transition economies which are typically characterized by "extreme" agency problems (Driffield *et al.*, 2005; Faccio *et al.*, 2001;Harvey *et al.*, 2004). Such problems are considered to stem from complex corporate ownership and control structures with little separation of ownership and control, with firms operating in environments with underdeveloped corporate governance mechanisms. Yet corporations in these countries are typically more leveraged than their counterparts in the US, and it is an open question as to whether debt in these corporations can be effectively used as a control mechanism by shareholders or would it be used strategically as a mechanism for expropriation by controlling insiders. Limited evidence generated from a few cross-country studies seem to suggest that the disciplining effect of debt in several of these countries has been rather limited and instead debt has acted more as an instrument for expropriation of outside shareholders than as an effective corporate governance device (Faccio *et al.*, 2001; Harvey *et al.*, 2004)

The need for systematic and robust evidence on the precise governing role of debt in emerging economies like India is underscored by the fact that country level experiences show that the quality of debt governance has important system-wide ramifications, and that prior knowledge of the underlying dynamics and timely institutional reforms are important to guard against systemic crisis. A case in point is the East Asian crisis, with regard to which Prowse (1999) observes that notwithstanding the disciplining effect that debt is posited to have on company management, the extensive use of debt financing did little to loosen the grip of the insiders as the controlling power of debt was weakened by weak monitoring by financial institutions, weak market and statutory regulations, legal protection of outside shareholders, high ownership concentration and poorly competitive financial systems, all of which together not only imposed high and severe costs on the economy, but may have contained the seeds of crises. A similar argument is made by Faccio *et al.* (2001) who argue that high levels of debt precipitated the East Asian crisis, and one of the

main factors behind this was the "unmistakably" systematic expropriation by insiders via the use of debt, facilitated and camouflaged by ineffective capital market institutions, extensive corporate pyramiding via low visibility linkages and extensive access to related party loans.

In analyzing the role of debt in the governance of corporates in India, our paper specifically addresses two distinct questions. First, we examine the extent to which debt works as a disciplining device in those Indian companies where potential for overinvestment is present, i.e. in companies where there are excess cash flows but low growth opportunities. This is a test of Jensen's (1986) control hypothesis in line with that conducted with respect to US companies by McConnell and Servaes (1995). In doing so, however, we extend the test by undertaking a comparative evaluation of the role of debt in group-affiliated versus non-affiliated (or stand alone) companies in order to gain insights into the important issue of whether the governance role of debt is sensitive to ownership and control structures, and whether the disciplinary effect, if any, is weaker for group-affiliated firms where the potential for expropriation is theoretically higher.

The second important issue that our analysis seeks to provide insights into is the effect of *institutional change* in facilitating the disciplining role or mitigating the expropriating effect of debt. The few studies that explicitly address this question have looked at this issue within a cross-country context (Faccio *et al*, 2001; Harvey *et al.*, 2004) rather than analyzing the effect of institutional change over time within a particular economy. Since the mid-nineties, capital market and corporate governance institutions in India have undergone significant transformation as a wide range of reforms have been introduced over time to strengthen minority investor protection, activate the takeover market, improve corporate disclosure and accounting rules, and the like. The transition process in India can serve as a laboratory setting to examine whether the role of debt as a governance mechanism has undergone any change over the years.

In line with our objectives, we estimate the relationship between market value as proxied by Tobin's Q and debt for a large cross-section of listed manufacturing firms in India separately for three financial years 1996[2], 2000, and 2003. These years are chosen sufficiently apart to capture the effect of institutional changes over time, if any, on the above relationship. The primary finding that emerges from our analysis across the years is that while in the early years of institutional change, debt does not have any disciplinary effect on either low growth standalone or

[2] The financial years 1996, 2000 and 2003 respectively stand for the periods 1995-96, 1999-2000 and 2002-03.

group affiliated firms, the disciplinary effect appears in the later years as institutions become more market oriented. While debt is found to increase firm valuation in 2000 and 2003 for both standalones and group affiliates, its effect is less in the latter relative to the former. This discount however narrows down significantly between 2000 and 2003, a period when key institutional reforms were introduced. We also find limited evidence of debt being used as a mechanism for expropriation in group firms that are more vulnerable to such expropriation. However, the disciplining effect of debt is found to persist even after controlling for expropriation possibilities.

The rest of the paper is organized as follows. Section 2 discusses the background literature on debt and corporate governance with special focus on emerging economies. Section 3 outlines the institutional characteristics associated with debt governance in India, tracing the important institutional changes that have taken place over the period of our study. Section 4 discusses the hypotheses associated with debt governance in emerging economies as well as describes the data used for our analysis. The empirical analysis is reported in Sections 5 and 6. Section 7 concludes the paper.

2. Background Literature

In this section, we provide a brief review of the theoretical and the empirical literature on the role of debt in corporate governance. As highlighted in the introduction, debt can play two contrasting roles with regard to the governance of corporations. On the one hand, debt could be a disciplining mechanism to contain agency problems between outside shareholders and professional management in a widely held corporation (Grossman and Hart, 1982; Jensen, 1986). On the other extreme, in corporations with a controlling block of shareholders, and a management that is drawn from among the controlling owners, debt can be used by insiders as a device for expropriation of outside minority shareholders (Faccio *et al.*, 2001; Harris and Raviv, 1988; Stulz, 1990;). The literature also points to the role that corporate governance and capital market institutions play in increasing the effectiveness of debt as a disciplining mechanism, or in mitigating the expropriating power of debt.

The disciplining effect of debt, dubbed by Jensen (1986) as the “control hypothesis” of debt creation, arises from the fact that debt can constrain managerial expropriation in a situation where corporations have more internally generated funds than investment opportunities in terms of the availability of projects with positive net present value. If growth opportunities for firms are low, the presence of such excess cash flows aggravates the agency problem between managers and

shareholders, as excess cash flows create further opportunities for self-interested managers interested in expanding firm size, to take up projects with negative NPV. This is usually referred to as the "overinvestment" problem which reduces the market value of the firm and thereby impacts shareholder value adversely. To curb such overinvestment and the resulting shareholder expropriation by managers, Jensen (1986) argues that shareholders can increase the component of debt in the capital structure. Having debt in the capital structure could reduce managerial discretion over free cash flows by pre-committing managers to a fixed stream of debt-repayments. Managers would find it in their interest to honour such debt repayments since failure to do so could force creditors to take the firm into bankruptcy which would in all probability cause managers to lose their job and reputation.

Arguments similar in spirit to Jensen are also made by Grossman and Hart (1982), who contend that while both monetary incentives tied to value-maximization and threat of takeovers can reduce agency problems, these may not be sufficient to eliminate such problems. In such situations, debt that brings with it a risk of bankruptcy, can act as a complementary mechanism. The authors show in terms of a theoretical model that even when managers rather than shareholders are responsible for choosing a firm's capital structure, and notwithstanding the fact that no manager would ideally like to issue debt due to the threat of bankruptcy, managers would in fact find it in their self-interest to choose a capital structure with both debt and equity over all-equity financing. By committing to a fixed stream of repayments that debt entails, managers impose on themselves the commitment to maximize profits, as any other objective other than profit maximizing increases the probability bankruptcy. In this scenario, debt is used as a bonding mechanism by self-interested management to create an in built disciplining mechanism to protect its reputation and tenure. The issue of debt acts as a signal to the market that management is committed to profit maximization which leads to higher market valuation of the firm. This in turn benefits the management further by decreasing the probability of takeovers and reducing the cost of capital.

While debt could reduce agency costs in a corporation by committing managers to pay out excess cash flows and curbing overinvestment, there are also costs associated with the use of debt that could impact firm value negatively. One of the primary costs of debt in this regard is that high level of debt commitments may prevent managers from taking up positive net present value projects should such opportunities appear in future. This is referred to by Myers (1977) as the underinvestment problem. While, as McConnell and Servaes (1995) observe, the positive and

negative effects of debt with regard to investment opportunities are likely to be present in all firms, the positive impact of debt in mitigating agency costs is likely to dominate in firms with excess cash flows but low growth opportunities, whereas the negative effect is likely to dominate in firms with high growth opportunities.

The disciplining role of debt posited in the control and bonding hypotheses are mostly applicable in the context of agency problems that exist in widely held corporations with a separation of ownership and control between shareholders and managers (McConnell and Servaes, 1995). However, in corporations where the separation between ownership and control is weak and the management is often drawn from a controlling block of large insider shareholder, the strategic use of debt undergoes a role reversal. In such corporations, the typical agency problem arises not between outside shareholders and professional management, but between controlling insiders and minority outsiders, wherein insider shareholders strategically issue debt in order to expropriate outside minority shareholders (Faccio *et al.*, 2001; Grullon and Kanatas, 2001; Harvey *et al*., 2004). Corporations with concentrated ownership and control structures with insider-dominated management are largely prevalent in Asia and Europe, and as La Porta *et al.* (1999) and Claessens *et al*. (2000; 2002), have observed based on their cross-country survey of ownership and control structures, such corporations are much more prevalent across countries than is generally believed and the "Berle and Means image" of the modern corporation with widely dispersed shareholders as typified in many US studies "has begun to show some wear[3]".

The theoretical underpinning of the 'expropriation hypothesis' is the following. Corporations with concentrated ownership and control typically belong to business groups and it is often the case that controlling shareholders (or promoters) of the group exert control over group-affiliated companies through a pyramidal structure, with companies arranged down the pyramid in descending order of the controlling owner's cash flow rights. Under such a pyramidal structure of control, as several researchers have recently shown, a controlling shareholder has the incentive and ability to use unfairly priced transactions to expropriate resources from affiliated companies lower down the pyramid to those higher up the pyramid where ownership rights are higher (Bertrand and Mullainathan, 2002; Johnson *et al.*, 2000). This is the phenomenon of tunneling. A mirror image of tunneling is propping (Friedman *et al*., 2003) whereby controlling shareholders sometimes clandestinely use private resources to temporarily "prop up" group affiliates that are in

trouble. The incentive to engage in propping today is to preserves the option to expropriate and obtain a legitimate share of profits in future. The propensity to prop is thus correlated with the propensity to tunnel and both are associated with firms that have minority shareholders.

The ability to expropriate increases with an increase in insider shareholders' voting rights, which in turn can be increased through increasing the proportion of debt relative to equity in the capital structure (Harris and Raviv, 1988; Stulz, 1990). The incentive to expropriate by increasing the proportion of debt in the capital structure could be counter-balanced, as is the case for a professional manager, by the increased threat of bankruptcy that comes with higher debt. Disciplining factors that are typically ascribed to the managerial concerns, such as reputation effects, competitive labor markets, and the market for corporate control, may also apply for family owned firms and act as strong incentives for them to work in the interest of outside shareholders and debtors (see for example, Anderson *et al.*, 2002; Casson, 1999; Chami, 1999). In fact, such ownership can come with long-term commitments, and given that family owned firms also typically re-enter the debt market at specified intervals of time for financing, reputational considerations could be strong and therefore one-time bondholder expropriation may not be a desirable course of action or bankruptcy, a desirable outcome, for such firms. There are, however, others who argue that the potential disciplining effect of bankruptcy threat associated with excessive leverage could be significantly attenuated in concentrated ownership structures with insider control (Faccio *et al.*, 2001) for at least two reasons. First, in a large number of such corporations where the controlling owner doubles up as the manager, job tenure or career is not necessarily tied to the debt liabilities of the corporation unlike the case of a professional manager who typically cares about the associated loss of job tenure or reputation that follows when debt commitments are reneged upon and the firm goes into bankruptcy. Second, reputational considerations in insider dominated corporations could be intrinsically weak because in the event a company lower down the pyramid goes bankrupt on account of excessive leverage, it may be difficult to pin accountability on the controlling owner ensconced in the complex "obscure control webs" characterizing pyramidal ownership structures.

Both the control and the expropriation hypotheses of debt creation are considered to be conditional on the prevalence of appropriate institutions (Baer and Gray, 1996; Berglof, 1995; Day and Taylor, 2004). The existence of well-developed capital markets, financial intermediaries,

[3] Based on a survey of 27 countries around the world, and using a 20 per cent cut-off definition of control, La Porta et al. (1999) show that 30 per cent of large firms in the world are family controlled, and only a

corporate governance and legal institutions in a country can increase the effectiveness of debt as a disciplining mechanism, or mitigate the expropriating power of debt. As a case in point, one of the implicit assumptions underlying the disciplining effect of debt is the existence of debt covenants and credible threats of bankruptcy which empower creditors with well defined rights to repossess some of the firm's assets or to throw the firm into bankruptcy when debt commitments are not met (Hart and Moore, 1989, 1994; La Porta *et al*. 1999, Baer and Gray, 1996).[4] An effective bankruptcy law can provide a credible threat to management to commit to and honor fixed debt repayments, as a failure to do so may force managers out and trigger the exit of firms. The disciplining effect of debt is also conditional on the presence of an active takeover market that forces managers to issue debt in order to prevent loss of control to the potential acquirer, and by doing so, managers, by Jensen's control hypothesis, are forced to avoid overinvestment (Zwiebel, 1996; Novaes and Zingales, 1995). In situations where debt can be strategically issued by inside owners for expropriation, it is argued that incentives for such expropriation can be weakened by effective capital market and other corporate governance institutions. Where such institutions are ineffective, or bankruptcy laws are weakly implemented, or where accounting and disclosure practices are not well defined, leverage can be used more effectively by the firms' insider shareholders as a device for expropriation since outside minority shareholders and external providers of finance are likely to have less or inaccurate information about a corporation's capital structure and its other operational details (Baer and Gray, 1996; Day and Taylor, 2004; Faccio *et al.*, 2001). Finally, as Day and Taylor (2004) argue, the effectiveness of governance through debt critically depends on the cost and quality of enforcement of debt contracts, which in turn depends on an appropriate legal environment, reliable drawing up of contracts and the faith in the judicial process.

Existing empirical studies on the role of debt in corporate governance, as stated in the introduction, have been mostly confined to evaluating the role of debt in reducing agency costs and impacting firm value in developed market settings, particularly with respect to widely held corporations in the US (Harvey *et al.*, 2004). The findings of these studies are varied, some confirming the disciplining role of leverage (for example, McConnell and Servaes, 1995) and

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little more than one third of the firms in even the richest countries are widely held.

[4] For instance, Hart and Moore (1994) explicitly model the idea that debt is a contract that gives the creditor the right to repossess collateral in case of default and the threat of such liquidation forces debtors to pay out to creditors. As Shleifer and Vishny (1997) observe, Hart and Moore's model shows exactly how the schedule of debt repayments depend on what creditors can realize once they gain control.

some finding no evidence to that effect (Agrawal and Knoeber, 1996).[5] Among the few empirical studies existing outside the institutional context of the US and where corporations with concentrated ownership and control largely exist, the results predominantly point to the absence of a disciplining role of debt and the presence of expropriation through debt. While an analysis of the disciplining role of debt with respect to a sample of Dutch corporations (de Jong, 2002), as well as study on the same subject with Chinese corporations (Tian, 2005) finds no evidence of the disciplining role of leverage, other studies with respect to a cross-section of East Asian and European countries (Faccio *et al*., 2001) find evidence of expropriation through debt in corporations with concentrated ownership and control. The latter study particularly finds the level of such expropriation to be lower with respect to the European firms, the difference being attributed to the existence of better governance institutions in Europe. Additionally, a recent study of a sample of Korean and Indonesian corporations (Driffield et al., 2005) do find that higher voting rights as well as higher equity ownership have positive impact on leverage in family owned and managed corporations indicative of expropriation through debt. Finally, a cross-country analysis by Harvey *et al.* (2004) in 18 emerging economies finds evidence of limited disciplining effect of debt with the strength of the effect depending on the nature of the debt capital. While certain types of debt capital, like international syndicated loans, are found to limit expropriation by managers or controlling insiders, domestic debt is found not to have any such impact.

3.Institutional Framework of Debt Governance in India

Given our objective of analyzing the disciplinary role of debt in the course of institutional transition, it is instructive to highlight the institutional structure underlying debt governance in India as well as the changes it has undergone in recent years. In line with our earlier discussion, we briefly touch upon the quality of corporate governance as reflected in shareholder and creditor rights, the state of the bankruptcy law, auditing, accounting and disclosure norms, as well as other channels through which financial institutions are able to monitor debt contracts in India.

[5] For instance, McConnell and Servaes (1995) find a positive relationship between debt and firm value with respect to a sample of US companies that have low growth opportunities but excess cash flows implying that debt has a disciplining role and confirming Jensen's control hypothesis for debt creation. On the other hand, Agrawal and Knoeber (1996) do not find any relationship between debt and firm value with respect to another sample of US corporates after controlling for other alternative corporate control mechanisms such as equity holding by large shareholders, and the proportion of outside directors on company boards, and the interdependence among these mechanisms.

Debt has always played a critical role in corporate financing and financial sector development in India. This has been the case in spite of the development and growth of the country's capital market since the early nineties when financial sector reforms were initiated. Table 1 gives trends in financial development and the evolving financial structure in India since the 1990s. Following Demirguc-Kunt and Levine (1999) we take market capitalization to GDP ratio as an indicator of size and value traded to GDP as an indicator of activity of the stock market. Along similar lines, we take assets of scheduled commercial banks and development financial institutions to GDP as an indicator of size and the ratio of non-food credit to GDP as an indicator of activity (defined to include scheduled commercial banks and development financial institutions) in the debt market. In terms of financial structure we observe that the banking sector to be relatively more important than the stock market in India as judged by their relative size. Though the relative size of the banking sector decreased in the initial years of the reforms program, its importance has again increased in the later years and the economy has remained largely bank-based as was the case prior to the reforms. Firm level studies corroborate the importance of debt in capital structure, with studies documenting that nearly four-fifths of total external funds being accounted for by borrowings and current liabilities and provisions, with major part of borrowings coming from banks and development finance institutions (Sarkar and Sarkar, 2001).

Considering the state of corporate governance institutions in India, the Indian corporate governance system is by and large a hybrid of the "outsider systems" of the US and UK, and the "insider systems" of continental Europe and Japan (Sarkar and Sarkar, 2000). Equity holdings by non-financial corporations, which are primarily inter-corporate cross-holdings, are much higher than that in the US and UK and are more comparable to that in Germany and Japan. However, at the same time, the participation of the small investor in corporate equity is at comparable levels with the US, with India having the largest number of listed companies in the world. In addition, while different types of financial institutions separately hold much smaller blocks in comparison to those in other countries, given that nearly all of these institutions are government controlled and fall under the aegis of the Ministry of Finance, together they form a much bigger homogeneous block in India than that in other countries. The participation of institutional investors like mutual funds and insurance companies which are nearly fully owned by the government in India is also significant, and comparable to the extent of their participation in Japan and Germany, but much less in scope than that in the US.

Table 2 presents the relative ranking of countries in terms of important elements of corporate governance system, namely the extent of shareholder protection, creditor rights, accounting and disclosure norms and the efficiency of legal institutions. The Table shows India to be very much at par with developed countries, especially with the English law countries, UK and the US, with respect to minority investors and creditors rights. What is especially interesting from the point of view of minority investors is the comparable rank of India with that of the US and UK with respect to anti-directors rights and oppressed minority mechanisms. With regard to creditor rights, India is at par with UK and has more protective laws in the books than either the US, Japan, or Germany. In recent years, creditor rights have been further strengthened by giving powers of enforcement of securities to the banks and financial institutions. The fact that many of the important governance institutions are at par with other common law countries is not surprising given the long history of governance institutions in India dating back to the mid-nineteenth century and the fact that most of the related legislation were fashioned around the English law.

One of the areas where India relatively lags behind relative to particularly the US and UK is with respect to accounting and disclosure norms. Not only is the number of auditors per 100,000 in India significantly low at 9 compared to as high as 352 in the case of UK, the disclosure level as well as the opacity in accounting clearly lags behind the best practices in the developed countries. However, if one examines the progress of reforms in India since the early nineties with respect to corporate disclosures, accounting and auditing norms, it is clearly evident that substantial progress has been made in making corporate activities more transparent. For instance, with regard to legislative initiatives, the Government of India has sought to amend from time to time, the Companies Act, 1956, to ensure that the interests of shareholders and creditors continue to be protected in a changing economic environment. Several amendments have taken place in the nineties, with the most recent ones coming through the Companies (Amendment) Act, 2000 and the Companies (Amendment) Act, 2001. Some of the most recent amendments include, among others, buy-back of securities, relaxation in norms relating to inter-corporate loans and investments, setting up of Investor Education and Protection Fund, compliance of accounting standards in preparation of annual accounts, provision for postal ballot, Audit Committee, Directors Responsibility Statement, Secretarial Compliance Certificate, and a ten fold increase of fines and the option for election of a director by small shareholders. Along with initiatives taken under the Companies Act, 1956, important initiatives taken up by the capital market regulator SEBI with respect to listed companies, have specifically focused on greater extent of corporate disclosures and transparency. Apart from the fact that from 2001, all listed companies have been

progressively required to publish corporate governance reports and submit annual accounts quarterly, listing agreement requires companies to file every quarter detailed data on corporate ownership structure including identities of shareholders holding at least one per cent equity. Finally, listed companies are required to present consolidated accounts, follow segment reporting and disclose related party transactions. It is important to note that most of the reforms in corporate governance and disclosures have been instituted post 2000 after several important corporate governance committees were set up by the Government as well as by SEBI.[6]

A core issue in designing an effective bank-based governance mechanism is with regard to bankruptcy laws. Insolvency laws in India, derived largely from English law, are contained in the Companies Act, 1956 and provides for liquidation and restructuring. The process of winding up of companies is undertaken under the supervision of the court. Further, there are mechanisms for pre-insolvency workouts whereby under the Sick Industrial Companies (Special Provisions) Act, 1985, companies with eroded net worth are sought to be rehabilitated.[7] This Act is administered by the Board for Industrial and Financial Reconstruction, and the provisions allow either a sick company or banks and other financial institutions which are creditors to the company to report its condition to the board. The board consequently judges whether the potential for rehabilitating the company exists as well as the appropriate course of action to be taken to avoid insolvency. Pre-insolvency workout schemes are also undertaken under the Corporate Debt Restructuring Scheme and Asset Reconstruction under Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002 (SARFAESI). The Recovery of Debts due to Banks and Financial Institutons (Amendment) Act, 2002, allows summary attachment of property of defaulting borrower at the time of filing the complaint and empowers the Debt Recovery Tribunals to distribute sales proceeds among secured creditors, and other mechanisms intended to speed up recovery of debts and thereby help reduce non-performing assets (NPAs).

Finally, given that one of the sources of managerial discipline and the incentive to bond through debt is the presence of an active takeover market, it is important to highlight the fact that during

[6] In India, the first regulatory initiative towards mandating the constitution of independent boards for listed companies followed the adoption by the Securities and Exchange Board of India (SEBI) in February 2000 of the Kumar Mangalam Birla Committee (KMBC) recommendations on corporate governance. Since then other committees have been set up from time to time to evaluate the progress of these reforms, such as the setting up of Naresh Chandra Committee on Corporate Audit and Governance (NCC) in 2002 by the Department of Company Affairs in 2002 and the the Narayana Murthy Committee on Corporate Governance by SEBI in 2002.

[7] A sick industrial company is defined as one that has incurred losses in consecutive years and whose asset to liability ratio had fallen below 1.1).

the period of our study, the takeover market in India has undergone substantial transformation. The market for corporate control in India, although technically existent for a long time, has been rather inactive by US and UK standards, but certainly more active relative to the markets in Japan and Germany. Prior to the economic reforms, regulatory bodies like the Monopolies and Restrictive Trade Practices (MRTP) placed several hurdles in the way of takeovers, mergers and amalgamations. Moreover, in the event of a hostile bid for a company, incumbent managers had the power to refuse transfer of shares to the bidder if the transfer was against the interests of the company or against public interest. The first attempts at regulating takeovers in India were made in a limited way by incorporating a clause, viz. Clause 40, in the listing agreement that provided for making a public offer to the shareholders of a company by any person who sought to acquire 25 percent or more of the voting rights of the company. Currently, takeovers are regulated through the *Substantial Acquisitions of Shares and Takeovers Regulations*, first promulgated in 1994 by the SEBI, and then replaced by a more comprehensive act in 1997. Current regulations, by making disclosure of substantial acquisitions mandatory, have sought to ensure that the equity of a firm does not covertly change hands between the acquirer and the promoters. Moreover, the rights of existing management to withhold transfer of shares have been withdrawn, although under Sections 250 and 409 of the Companies Act, target companies can shelter against raiders if the proposed transfer prejudicially affects the interests of the company. Following these reforms, substantial increase in takeover activity has taken place in India in the recent years. For example, while 40 open offers valued at US$ 134.31 million took place in 1998, there were 88 open offers in 2003, valued at US$ 1483.25 million (SEBI website, 2005).

4. Hypotheses and Sample

4.1 Hypotheses

Our main objective in this paper is to test whether debt plays a disciplining role in mitigating agency costs in firms where such costs are likely to be relatively high. As McConell and Servaes (1995) argue, debt could have both a positive effect on firm value by curbing over investment in negative net present value projects (Jensen, 1986) as well as a negative effect when firms have to forego profitable investment opportunities because of prior debt commitments (Myers, 1977). Given that both the positive and negative effects of debt are likely to be present in firms, McConnell and Servaes (1995) conjecture that the positive effect of debt is likely to outweigh the negative effects in firms with low growth opportunities whereas the opposite is likely to happen in firms with high growth opportunities. Analyzing the effect of debt separately for samples of

high and low growth firms in the US for three year, McConnell and Servaes (1995) find support for their hypotheses.

Taking the McConnell and Servaes hypotheses as the baseline, we examine in the context of a sample of Indian firms, first, whether the disciplinary effect of debt exists in firms with low growth opportunities where managers are prone to over invest in negative net present value projects. Second, we extend this analysis to examine whether the disciplinary effect of debt, if any, is different for group affiliated and standalone firms. As discussed earlier, group affiliated firms in India as in many other countries, have concentrated ownership and control structures with affiliates within a group being organized as pyramids (Bertrand *et al.*, 2002). This is not the case with standalone firms where there is little divergence between promoter's share ownership and control. Given that the ownership structure in group firms can potentially facilitate expropriation through debt, one can conjecture that for firms with low growth opportunities, debt could have less of a disciplinary effect, if any, in firms which are affiliated to groups. This could be all the more in the absence of appropriate institutions like transparent accounting and disclosure norms that can camouflage any form of expropriation that takes place among the network of group affiliates. However, if capital markets are functioning, investors would factor in the possibility for expropriation through debt by imputing a lower market value to group affiliates vis-à-vis standalones. Over time, if institutions develop in the form of better monitoring by creditors, better disclosure rules about related party transactions and the like, so as to make explicit expropriation through debt to become more costly. In response, firms are likely to react to improve their market valuation. Hence, one would expect a narrowing of or elimination of the market discount for group affiliated firms vis-à-vis standalone firms over time. In other words, if debt is used as a disciplinary device by shareholders to mitigate agency costs, external institutional pressures may operate to narrow down the discount between standalones and group affiliates, notwithstanding the expropriation incentives through debt in the latter.

4.2 Sample

An analysis of the above questions requires good quality data on (i) the financial structure of the company (ii) its accounting and market performance (iii) its ownership pattern (iv) the nature of its affiliation with other corporate bodies, particularly group affiliated companies, and (v) the type and composition of its management. For our analysis, we use the PROWESS dataset published by the Center for Monitoring Indian Economy (CMIE). PROWESS is a comprehensive database containing good time series information (from 1990 onwards) on a large number of companies

(about 8000). The database contains (a) detail accounting information complied from the annual reports of companies, (b) their market performance, including, but not limited to, stock price and trading volume, (c) their equity ownership pattern, (d) affiliation to business group classified into top50 business group, large business group, and other business group.

The PROWESS database gives the extent of equity ownership by different types of shareholders, namely by directors and relatives, by corporate bodies, by foreign bodies including institutional investors, by financial institutions, by mutual funds, by insurance companies, and by public. While such data for each blockholder was available as aggregates, since 2002, listed companies were required by SEBI to report equity data at a more disaggregated level. Thus, companies were required not only to report aggregate ownership under each blockholder, they were required to file the identity of all shareholders under each block, holding at least one per cent of equity. In our analysis, while we use aggregate data for all the three years, we use the disaggregated data for additional analysis for 2003, the first year in which the data was available.

Our sample consists of all listed private sector Indian manufacturing companies. We have three sets of samples for the three years of our analysis. The 1996 sample consists of 1,211 companies of which 714 are standalones and 497 are group affiliates. The 2000 sample comprises of 1024 companies of which 564 are standalones and 460 are group affiliates. Finally, the 2003 sample consists of a total of 1266 companies of which 697 are standalones and 569 are group affiliates.

5. Empirical Methodology and Results

5.1 Empirical methodology

In line with our hypotheses, and following the methodology applied by McConnell and Servaes (1995), we identify low growth firms as those with price-earnings (P/E) ratio below the median in the respective years. Firms above the median are identified as high growth firms. The P/E ratio is calculated by dividing the stock price at the end of years 1996, 2000 and 2003 by operating earnings per share.

In estimating the effect of debt on market value, we adopt a simultaneous equation framework in line with several existing studies (for example, Driffield et al. 2005; de Jong 2002) which argue in favor of a joint determination of debt and firm performance as opposed to a single equation framework (McConnell and Servaes, 1995) that does not allow for reverse causality from performance to debt. In the capital structure literature, leverage is usually considered to be

endogenous with market value being one of its primary determinants (see for example, Smith and Watts, 1992; Rajan and Zingales, 1995). We estimate the following system of linear equations under two specifications. Under Specification 1, we estimate the following system of linear equations:

market value = f(leverage, leverage x group, group-affiliation, ownership structure, firm characteristics) + error -- Equation (1)

leverage = g(market value, group-affiliation, free cash flow, risk, non-tax debt shield) + error -- Equation (2)

Under Specification 2, we use a finer set of ownership and control variables to examine the disciplinary/expropriation effect of debt separately on standalones and group affiliates. These variables allow us to analyse more directly (compared to Specification 1) whether expropriation through debt takes place in group affiliates. The underlying hypothesis, following Faccio and Lang (2001) is that group affiliates with a higher degree of separation between ownership and control are likely to have higher debt ratios that would facilitate expropriation from firms with low cash flow rights to firms with high cash flow rights. As we explain later, using our available data, we construct different indices of potential expropriation to test the expropriation hypothesis. We also examine in this context whether firms that are more conducive to expropriation are discounted by the market in terms of lower market value. This analysis is conducted only for 2003 for which the detailed ownership variables are available.

As stated earlier, since our primary focus is on the role of debt in mitigating the over investment problem, most of our analysis will be devoted to estimating the system of equations for low growth firms. However, in order to establish the discriminating nature of our results with respect to low growth firms, we estimate the model for high growth firms too and compare the estimates so obtained with that of low growth firms.

The two endogenous variables in our model are *leverage* as measured by total debt as a proportion of total assets and market value as measured by *Tobin's Q*. *Tobin's Q* is defined as the ratio of market value of equity and market value of debt to the replacement cost of assets. However, in India, as in many developing countries, the calculation of *Tobin's Q* is difficult primarily because a large proportion of the corporate debt is institutional debt that is not actively traded in the debt market. Also, most companies report asset values to historical costs rather than

at replacement costs. We, therefore, calculated a proxy for *Tobin's Q* by taking the book value of debt and the book value of assets in place of market values. This modified *Tobin's Q* has been widely used in the literature to avoid arbitrary assumptions on depreciation and inflation rates.

Among the main variables of interest in the *Tobin's Q* equation (Equation 1) are *leverage* and the interaction term *leverage* group affiliation*. *Group affiliation* is a dummy variable that takes the value of one for firms affiliated to a group. If debt acts as a disciplinary effect in low growth firms, we would expect leverage to positively affect market value. However, given that there could be potential expropriation through debt in group affiliated firms, one would expect the disciplinary effect of debt to be lower in group affiliates relative to standalones. If that is the case, then the coefficient of *leverage x group affiliation* will turn out to be negative. Apart from the effect of *leverage*, the other set of variables of interest in the valuation equation are the equity ownership variables. We include three equity ownership variables that are relevant in the Indian context (Sarkar and Sarkar, 2000), namely ownership by promoters or insiders, ownership by banks and financial institutions, and ownership by foreign investors. As is widely discussed in the literature on corporate ownership and performance (Shleifer and Vishny, 1997), the relationship between equity ownership and performance is ambiguous and cannot be predicted *a priori.* The benefits of blockholdings by equity owners as promoters and financial institutions are highlighted under the "convergence-of-interest" and the "efficient-monitoring" hypotheses which argue that higher equity stakes increases the returns from monitoring, thereby reducing agency costs and increasing company value. On the other hand, under the "conflict-of-interest" hypothesis and the "strategic-alignment" hypothesis, shareholders, particularly insiders, with higher equity stakes may pursue non-profit maximizing objectives for their personal benefits to the detriment of the minority, and different types of large shareholders like institutional investors and managers may often find it mutually advantageous to collude in a way to reduce company value and hurt the interests of minority investors. The equity ownership variables that we include as explanatory variables are share ownership by promoters (*promoters' share ownership*), share ownership by financial institutions (*financial institutions' share ownership*) and share ownership by foreign investors (*foreign share ownership*).

Equation (1) also includes some standard control variables that are considered to impact market value. In keeping with earlier work we include, log of total assets (*log of total assets*) as proxy for size, and intangible assets namely advertising intensity (*advertising intensity*) defined as proportion of advertisement expenses to total assets and research and development intensity

(*advertising intensity*) defined as research and development expenditures to total assets. In addition, all regressions are controlled for industry effects through the incorporation of industry specific dummy variables.

With respect to the determinants of *leverage*, we primarily focus on its relationship with *promoters' share ownership* as well as its relationship with a firm's excess cash flow. In low growth firms where the potential for overinvestment exists, managers with higher equity ownership would particularly have the incentive to issue more debt to signal their commitment to not divert excess cash flows for perquisite consumption. In other words, in line with Grossman and Hart, managers with higher equity ownership would have higher incentive to use debt as a bonding device. These incentives could be relevant both for standalone companies with professional management as well as owner-managed group affiliates. Additionally as Claessens *et al.* (2000) and Faccio and Lang (2001) argue, in group affiliates characterized by separation of ownership and control, controlling shareholders would have an incentive to issue more debt in order to avoid diluting their ownership stakes and thereby retain control.

With regard to the relationship between firm's excess cash flows and leverage, as argued by Jensen (1986), the potential for overinvestment exists particularly for low growth firms with free cash flows that allow managers to indulge in perquisite consumption and the like. If debt is used as a disciplining device in such firms, one would expect excess cash flows and debt to be positively related. We therefore control for free cash flows (*free cash flow*) in the leverage equation. We measure cash flows using the proxy introduced by Lehn and Poulsen (1989) where the variable equals operating income minus taxes, interest expenditures and dividends paid divided by total assets.

Among the control variables included in the leverage equation is non-debt tax shields (*non-debt tax shield*) defined as operating income minus interest payments and minus tax payments over the corporate tax rate as a proportion of total assets (Titman and Wessels, 1988). As argued in the capital structure literature, the existence of non-debt tax shields make the issuing of debt relatively less attractive and hence we hypothesize that non-debt tax shields to be negatively related to leverage. Additional control variables are bankruptcy risk (*risk*), proxied by a dummy variable which equals 1 for firms in the bottom decile of the of the interest coverage ratio (Faccio and Lang, 2001), firm size, as measured by *log of total assets*, *group affiliation, Tobin's Q*, and

asset tangibility (*asset tangibility*), as measured by the ratio of fixed to total assets. The list of variables and their definitions are summarized in Table 3.

5.2 Summary Statistics

The summary statistics for our sample of firms are presented in Tables 4(a) – 4(e). Table 4(a) presents the statistics for the full sample for each year to analyse whether there have been any significant changes in the characteristics between the years. Table 4(b) presents the statistics for the full sample of firms for each of the three years, 1996, 2000 and 2003, classified by ownership groups. Table 4(c) presents the statistics for the full sample for the three years of our study classified by high growth and low growth firms. Finally, Table 4(d) presents the statistics for the sub-sample of only low growth firms classified by ownership groups. Finally, Table 4(e) presents the statistics for the sub-sample of only high growth firms classified by ownership groups.

Table 4(a) presents relevant summary statistic for the full sample in each year comprises of both low growth and high growth firms across both ownership groups. The means test for the key variables is carried out in comparison with the earliest year in our sample, 1996. As is evident from Table 4(a), compared to 1996, both the *price-earnings ratio* and *Tobin's Q* did not change significantly in 2000, but were significantly lower in 2003. Further while debt ratios measured either in terms of l*ong term leverage* or in terms of total *leverage* remained the same in 1996 and 2000, these declined significantly in 2003 over the 1996 level. These trends coincided with a decline in *free cash flow* in the later years. Finally, estimates of *promoters share ownership* and ownership by dispersed shareholders (*public share ownership*) show that while there has been significant consolidation of promoter holdings in later years, in particular in 2000, there has been a dilution of share ownership by outsiders. What Table 4(a) essentially highlights is that the key characteristics of listed firms have undergone significant changes during the period of our study suggesting a variation of data over time.

While Table 4(a) is broadly indicative of the changes, Table 4(b) reveals differences in the key characteristics by ownership groups across the years. As is evident from Table 6(b), while group affiliate firms have significantly *lower price-earnings ratios* on the average as compared to stand alones, they have higher market value as measured by *Tobin's Q*. Further, group affiliates have significantly higher debt ratios, higher equity ownership by financial institutions and by foreign investors. What is notable however, is that while there is no significant difference in the promoter's ownership between group affiliates and standalones, significant differences exist with

respect to *public share ownership*. In all three years, standalone firms are found to have more dispersed shareholdings as compared to group affiliates. These differences essentially arise because other blockholders of equity, namely financial institutions and foreign investors have significantly higher equity ownership in group affiliates. With regard to *free cash flow*, there is no particular pattern of difference between the two ownership groups with *free cash flow* of group affiliates as compared to stand alones being higher in 1996, lower in 2000 and same in 2003.

When we split the sample for each year by high and low growth firms as is presented in Table 4(c), we can the differences in the *price-earnings ratio* of high and low growth firms are "dramatic", by construction. Similarly, the average *Tobin's Q* for high growth firms is significantly higher for the high growth firms. What we additionally find is that the low growth firms have systematically higher debt ratios than their high growth counterparts for all the three years. These implicitly imply that high debt ratios are likely to be a constraining factor for high growth firms and a mitigating factor with respect to agency problems present in low growth firms. With regard to equity ownership, we find that while there is no significant difference in ownership by promoters, high growth firms have significantly lower holdings by financial institutions and higher holdings by foreign investors. The higher equity ownership by financial institutions in low growth firms can be explained by the need to monitor such firms in which these institutions have debt exposure and where the potential for overinvestment exists, whereas the higher foreign equity ownership in high growth firms can be explained by the incentives of foreign investors to maximize their returns on equity.

When we consider only low growth firms and analyze averages of key variables across group affiliates and standalones (Table 4(d)), several of the differences in the characteristics of ownership groups that we noticed in the full sample in Table 4(b) hold true. Within the low growth firms too, both *long term leverage* and total *leverage* are significantly higher for group affiliates in all the three years. It is not a priori clear from the summary statistics whether higher long term borrowing in low growth firms is indicative of a need to use debt as a commitment device to mitigate agency problems or use it for purpose of expropriation. Also, as with respect to the full sample, equity ownership by both financial institutions and foreign investors are higher for group affiliates as compared to standalones. While a higher equity ownership by financial institutions in group affiliates can be due to higher debt exposure, higher ownership by foreign

investors could be motivated by the significantly higher market value of affiliates vis-à-vis standalones.

Finally, Table 4(e) presents the summary statistics of high growth firms by ownership groups. As is the case of low growth firms, similar differences between standalones and group affiliates exist with respect to high growth firms. However, what is interesting is that *leverage* in high growth firms are lower for each ownership group as compared to their low growth counterparts. Also, in spite of being high growth firms, equity ownership by financial institutions is lower in these firms as compared low growth firms which strengthens our contention that the higher equity holding of financial institutions is largely motivated by the need to monitoring the low growth firms rather than by the need to earn higher returns on their investments.

5.3 Empirical Results

As stated earlier, we analyze the determinants of *leverage* and *Tobin's Q* in a simultaneous equation framework. The regression equations are estimated by 2SLS rather than 3SLS. Since our primarily focus is in estimating the valuation regression i.e., *Tobin's Q*, we prefer to use single equations method to guard against possible inconsistency of estimates due to misspecification of the *leverage* equation. For each of the three years, the determinants of *Tobin's Q* and *leverage* are presented in Tables 5(a) and Table 5(b), respectively.

5.3.1 Debt and Performance: Low Growth

As is evident from the estimations of the pooled model presented in Table 5(a), as of 1996, *leverage*, has no significant effect on a company's market value. Neither does the effect of *leverage* on *Tobin's Q* depend on the group affiliation of the firms. Thus, there is no evidence of any disciplinary effect of debt in low growth firms both with respect to standalones and group affiliates. This picture however is quite different four years later in 2000 with *leverage* being found to be positively related to *Tobin's Q* in standalones with a p-value of less than 0.0001. As has been argued in existing studies, this positive effect of debt on market valuation for low growth firms is indicative of the disciplinary role of debt in mitigating the agency costs associated with overinvestment. In the case of group affiliates in contrast, the negative and significant coefficient of *leverage*group affiliation* for 2000 suggests that the market discounts the

disciplinary effect of debt in these firms. However, one can still conclude that debt has a disciplinary effect on group affiliates too, albeit to a lesser extent. This is because the total effect of debt on group affiliates, computed as a summation of the coefficients of *leverage* and *leverage*group affiliation*, is positive (0.26) and significant with a p-value of 0.06. Thus, while the incentive structure of group affiliates arising out of the concentration of both ownership and management in the hands of the founding promoters do not predicate a priori the necessity for using debt as a disciplining device to signal the market, our estimates suggest that group affiliates are nevertheless perceived by the market as using debt as a commitment or bonding device although to a lesser extent.

If we consider year 2003, estimates in Table 5(a) reveal that debt continues to have a disciplinary effect on standalones with the coefficient of *leverage* being 0.82 and significant at less than 0.0001. Further, as in the case of year 2000, we find that the disciplinary effect of debt continues to be discounted for group affiliates as is evident from the negative and significant coefficient of *leverage*group affiliation*. Again, the net effect of debt on group affiliates in the year 2003 as reflected in the summation of the coefficients of *leverage* and *leverage*group affiliation* is positive (0.44) and significant with a p-value of 0.004. Additionally, judging by the fact that the net effect on group affiliates in 2003 is higher at 0.44 compared to 0.26 in 2000 implies that the disciplinary effect of debt on group affiliates is stronger in 2003 and the discount associated with group affiliates vis-à-vis standalones is lower. This is likely to be due to a combination of factors. On the one hand, as market institutions like the capital market and the takeover market develop due to more transparent regulations and bankruptcy procedures become effective as we have seen in the case of India, managers even in group affiliates become increasingly subjected to market pressures. On the other hand, with reforms in accounting, auditing and disclosure norms, operations of group affiliates can be expected to become more transparent implying a decrease in the market discount.

With regard to the ownership variables, estimates in Table 5(a) reveal that while p*romoters' share ownership* has no significant effect on *Tobin's Q* in all the three years of our analysis, while *financial institutions' share ownership* has a positive and significant effect on *Tobin's Q* in 1996 and 2000 and no effect in 2003. Incorporating a quadratic effect with respect to p*romoters' share ownership* keeps the results unchanged suggesting the absence of a non-linear relationship between market value and insider ownership as is found in several existing studies with respect to US (McConnell and Servaes. 1995; Morck *et al.*, 1988) as well as in India (Sarkar and Sarkar,

2000). *Foreign share ownership* by and large has a positive and significant effect on company value as is revealed by the positive and significant coefficients in 1996 and 2003.

Turning our attention to the determinants of *leverage* in Table 5(b), we find *free cash flow* to have a positive and significant effect on *leverage* successively in 1996 and 2000 indicating that companies with higher excess cash flows have taken on higher levels of debt. Going by the results with respect to the effect of debt on market value (Table 5(a)), while the diversion of increased excess cash flows to increased debt commitments did not translate into higher market value in 1996, it did so in 2000. In 2003 however, no relationship between *free cash flow* and *leverage* is found, although *leverage* does have a disciplinary effect once *free cash flow* is controlled for. The effect of *non-debt tax shield* on *leverage* is negative and significant in all the three years as expected. With regards to the effect of *promoters' share ownership* the hypothesis that firms with higher insider holdings would have an incentive to issue higher levels of debt to prevent dilution of control is validated weakly in 1996 (p-value of 0.09), but not in other years. An interaction of *promoters' share ownership* with *group affiliation* to find out whether the non-dilution motive is particularly stronger in group affiliates in any of the years do not turn out to be significant (not reported in Table 5(b)). The consistently positive and significant effect of *Tobin's Q* on *leverage* that we find for the low growth firms is consistent with earlier findings by researchers that firm performance affects leverage choice due to lowering of bankruptcy risks.

With regard to the effect of tangible assets (*asset tangibility*) on *leverage*, estimates in Table 5(b) reveal a positive and significant relationship in 1996 and 2000 but ceases to matter in 2003. The results for the earlier years are consistent with the arguments that higher tangible assets can reduce the agency costs of debt by providing collateral value (Rajan and Zingales, 1995). With respect to the effect of bankruptcy risk (*risk*) on *leverage*, while one would expect higher risk of bankruptcy to have a detrimental effect on the debt ratio (Harris and Raviv, 1990), our estimates on *ris*k do not reveal any significant effect for 1996 and 2003. However, contrary to expectations, *risk* does have a positive and significant effect on debt ratio in 2000. This result is consistent with the findings of Ross (1977) and Harris and Raviv (1990) who find that *leverage* is positively related to the probability of default.

An interesting point to note with respect to our estimation is that the explanatory power of the model both with respect to the *Tobin's Q* and the *leverage* equation increases monotonically over the years. The increase is particularly striking with respect to the *Tobin's Q* equation. While in 1996 the model explains only 6 per cent of total variation in the dependent variable, this rises to 14 percent in 2000 and to 39 per cent in 2003. Thus, an application of the model largely

considered relevant for market economies like the US, increased in relevance in the context of an emerging economy like India in the course of its transition to more market oriented institutions.

The results that we have reported so far are based on the pooled regression of group affiliated and standalones firms. In this model, we included a *group affiliation* dummy and its interaction with *leverage* in *Tobin's Q* to examine whether the disciplinary effect is sensitive to ownership structures. However, in this model we did not allow for group effects in other variables of interest like those with respect to the equity ownership variables in the *Tobin's Q* equation, and *free cash flow*, *risk* and *non-debt tax shield* in the *leverage* equation. In order to examine whether there are significant differences in the effects of these variables across ownership groups as well as check the robustness of our results with respect to *leverage*, we estimated the two equations separately for standalones and group affiliates.

Our estimation results for the *Tobin's Q* equation confirmed the findings of the pooled model of an absence of a disciplinary effect in 1996 for both ownership categories, and the presence of such an effect in 2000 and 2003. With regard to the effect of equity ownership on *Tobin's Q*, p*romoters' share ownership* did not have any significant effect on firm value for both standalones and group affiliates in most scenarios except for in the case of group affiliates in 2000 where it was positively and weakly significant with a p-value of 0.08. The effects of other ownership variables were consistent with the results in the pooled model. With regard to the determinants of *leverage*, run separately for standalones and group affiliates, the effect of n*on-debt tax shield* remained uniformly negative by ownership groups, though the magnitude of the effect was higher for group affiliates. Excess cash flows had a positive and significant effect consistently for all the three years for group affiliates and for standalones for the first two years. Finally, as in the case of the pooled analysis, the explanatory power of the performance equation monotonically increased over the years both for standalones and group affiliates. A F-test designed to examine the appropriateness of the parsimonious specification with interaction vis-à-vis the separate models for standalones and group-affiliates failed to reject the null hypothesis at the 5 percent level. We prefer to present the pooled model with interaction terms as it provides a more parsimonious specification wherein the differential effects of leverage on firm value is easier to illustrate and its statistical significance is simpler to test.

5.3.2 Debt and Performance: High Growth Firms

As discussed in the introduction, debt can have either a positive or negative effect on firm value depending on the presence of low or high growth opportunities facing the firm. Our estimation results with respect to low growth firms show that debt can be used as a device for mitigating agency problems even in emerging economies and in firms where the potential for expropriation through debt particularly exist, i.e., group affiliates. However, to demonstrate the discriminating power of our model in the case of low growth firms, it is important to analyze the effect of debt in the case of high growth firms and find out whether the relationship between debt and performance is any different in this case. As McConnell and Servaes (1995) argue, in the case of high growth firms, it is likely that the negative effect of debt on company value following from the underinvestment problem (Myers, 1977) will outweigh any positive effect that debt may have in these firms. Given very little evidence on this issue with respect to high growth firms in emerging economies and to examine whether there are substantial differences in the effect of debt by growth opportunities, we estimate the relationship between leverage and Tobin's Q for the high growth sample. A F-test designed to examine the appropriateness of the parsimonious specification that we had adopted for the low growth sample to examine ownership effects, rejects the null hypothesis at the 1 percent level. Accordingly, we estimate the model separately for standalone and group affiliated firms to allow for differences in coefficients of all the explanatory variables. The results are presented in Tables 6(a) and 6(b).

With respect to the *Tobin's Q* equation, as is evident from Tables 6(a), the effect of *leverage* is quite the opposite for high growth firms, both in the case of standalones and group affiliates. In the case of standalones, *leverage* has a negative and significant effect on *Tobin's Q* in 1996 and 2000, with p-values of 0.0120 and 0.0002 respectively. In the case of group affiliates, this negative effect consistently persists in all the three years with p-values of 0.0089, 0024 and 0.0152, respectively. These results, implying that debt commitments in high growth firms force firms to forego positive present value projects, are distinct from the results with respect to low growth firms and are consistent with that obtained by McConnell and Servaes in the case of US companies. If we compare the magnitude of the marginal effects of *leverage* across standalones and group affiliates, for each year, the effects in absolute terms are significantly higher (with p-values of 0.0001) for group affiliates as compared to standalones. Thus, our estimates imply that the underinvestment problem is particularly stronger for group affiliates and essentially follows

from the fact that characteristically group affiliates are more leveraged than standalones as is revealed in the summary statistics presented earlier.

With regard to the determinants of *leverage* (Table 6(b)) in high growth firms, while the direction of effects of the explanatory variables are similar to those in low growth firms, the significance of the variables are in some cases different if one compares by ownership groups and by year. One notable difference with respect to low growth firms lies in the fact that while the effect of *Tobin's Q* is found to be consistently positive across the years, there is by and large no such effect with respect to high growth firms. Also, in the case of high growth standalones, firms with excess cash flows consistently have higher *leverage*, this is not the case with respect to the group affiliates except for 2003. Finally, the effect of *promoters' share ownership* on *leverage* is consistently positive and significant for high growth group affiliates in contrast to being not significantly zero in the case of standalones implying that the promoters in group affiliates are more interested in preserving their control and preventing the "dilution of entrenchment" in high growth firms.

6. Debt and Expropriation

Our foregoing analysis while examining the disciplinary effect of debt in low growth firms did not focus explicitly on the issue of whether debt is also used as an expropriation mechanism especially in group affiliates. However, our results of a discount in the disciplinary effect of debt of group affiliates vis-à-vis standalones provide some indirect evidence of possible expropriation in the former group of firms. As has been discussed extensively in the literature on business groups, the incentives of inside shareholders to expropriate minority shareholders in group firms organized as pyramids is directly related to the divergence of ownership and control rights in these firms. The higher the divergence between cash flow rights and control rights in group affiliates, the higher is the incentive of the controlling shareholder to divert resources from affiliates where the cash flow rights are lower, to firms where the cash flow rights are higher. As we have discussed earlier in Sections 1 and 2, one of the channels through which controlling shareholders can expropriate is through committing higher leverage in companies with greater separation of ownership and control. If debt facilitates expropriation and the capital structure decisions of firms are not fully driven by the concerns of external creditors and minority shareholders, then as Faccio and Lang (2001) argue, firms with higher divergence of ownership and control are likely to issue more debt and thereby generate more resources to be expropriated

by controlling shareholders. Thus, affiliates which are more vulnerable to expropriation would have higher levels of debt.

We test the hypothesis that higher levels of debt are associated with higher vulnerability of expropriation notwithstanding the disciplining effect that debt may also have in firms which can be potentially expropriated. Thus, we adapt our model under Specification 1 to explicitly control for an indicator of expropriation in the performance equation as well as in the debt equation. If debt ratios are higher in firms that are more vulnerable to expropriation, then such expropriation is likely to have a negative effect on firm value. Whether the disciplining effect of debt on firms still hold after controlling for expropriation is an open question that we empirically analyze.

In order to compute an index of expropriation vulnerability, a standard variable that is constructed in several studies is the ratio of cash flow rights to control rights (see for example Claessens et al., 2000, Faccio and Lang, 2001). However, while data on the direct cash flow rights of the controlling shareholder is easily available, computing the control rights involves identifying the weakest link in each control chain linking a group affiliate to its controlling shareholder. Such computation is largely infeasible in the case of many firms even if detailed ownership data on shareholders are available as many of these shareholders are private limited companies on which further information on their ownership structure are not available in the public domain.

One approach suggested in the literature to identify firms in the pyramid and their expropriation vulnerability is the direct cash flow rights of the controlling shareholder (Bertrand *et al.*, 2002). Thus, firms with lower cash flow rights are identified as ones to likely have greater divergence between ownership and control and positioned lower in the pyramid. In our analysis, we suggest an alternative indicator of expropriation vulnerability which we term as the “ownership-opacity” indicator. The computation of this variable is based on the premise that complete information on the ownership stakes of the controlling shareholder(s) is not always available in the public domain. This primarily results from disclosure laws that require firms to disclose the identity of only large shareholders where a large shareholder is defined according to appropriate cut-off points. In India, SEBI regulations introduced in 2002 require listed companies to mandatorily require listed companies to disclose the identity of equity holders who have at least one per cent share ownership in the companies along with the value of such ownership and the number of shares held. Thus, while total shareholdings by promoters are disclosed and promoters with at least one per cent are disclosed, the difference in the two is accounted by all shareholders (if any)

with less than one per cent share ownership. It is with respect to these shareholders that we have no information on their identity or pattern of equity ownership. The more such divergence, the less we are likely to know the control and ownership structure of the controlling shareholders of the firm, and thus more opaque is the firm. The implications of such ownership opacity are particularly strong for affiliates within a group which are connected by a complex web of cross-holdings and pyramids. This is because, the less the information on the complete ownership and control structure of a firm, the more vulnerable it would be to expropriation as it would be easier to divert resources from the firm to other group members without being tracked down. Thus, if expropriation is the motive, then opacity of ownership can be strategically engineered through the fragmentation of shareholding.

Applying our concept of ownership opacity, we construct three ownership opaqueness variables. As the disclosure of detailed ownership data on one percent shareholdings became mandatory only since 2003, we are able to compute these variables only for this year and not for the earlier years. Thus, our empirical estimation is confined to only the last year in our dataset and not the earlier years. The definitions of these three variables are the following:

> *ownership opacity (measure 1)* = Total promoters' share ownership from aggregate data minus total promoters' share ownership from 1 percent data, divided by total promoters' share ownership from aggregate data.
>
> *ownership opacity (measure 2)* = Total promoters' share ownership obtained by aggregating separate holdings of 1 percent or more minus total promoters' share ownership obtained by aggregating separate holdings of 5 percent or more, divided by total promoters' share ownership obtained by aggregating separate holdings of 1 percent or more.
>
> *ownership opacity (measure 3)* = Total number of separate holdings by promoters of 1 percent or more minus total number of separate holdings by promoters of 5 percent or more, divided by total number of separate holdings by promoters of 1 percent or more.

While the first is the obvious measure of the divergence between total equity holdings and holdings by one percent or above shareholders, the next two measures attempt to capture the extent of fragmentation of promoter ownership among the equity owners for which information is

available. The larger the magnitude of these two measures, the more is the fraction of ownership held by the relatively smaller shareholders with equity ownership of less than 5 per cent. These latter two measures thus provide an indicator of the fragmentation of equity ownership by controlling shareholders and persons acting in concert. Given that a large number of small equity owners are private limited companies that are controlled by the controlling shareholders, the more difficult is it to establish a chain of links from one firm to another firm.

The summary statistics of the different ownership indices related to promoter control is presented in Table 7. As is evident from the Table, while there is no significant difference in the aggregate ownership of promoters between standalones and group affiliates, the disaggregated picture is significantly different for the two ownership groups. While one would expect ownership opacity to be relatively more in group affiliates as compared to standalones given the intrinsic motives for diversion of resources in the latter, our estimates reveal that stand alones score higher than group affiliates in terms of opacity with respect to all the three indices.

Tables 8(a) and 8(b) present the estimation results of the relationship between firm value and debt after controlling for opacity for standalones and group affiliates. As earlier, the regressions are estimated on the low growth sample. In Table 8(a), regression estimates are with respect to the determinants of firm value for standalones and group affiliates after incorporating the three opacity variables in our basic model. The important point to note from this Table is that *leverage* continues to have a positive and significant effect on *Tobin's Q* for both standalones and group affiliates under all the three opacity measures. Thus, the results obtained in the pooled model (Table 5(a)) of the disciplinary effect of debt for the year 2003 continues to hold up even after controlling for ownership opacity. One noticeable change however is in the relative magnitude of the coefficients of *leverage* with respect to standalones and group affiliates. While our pooled model results earlier reveal a discount in the marginal effect of *leverage* for group affiliates relative to standalones, the picture is reversed once opacity is controlled for. As Table 8(a) reveals, the marginal effects of debt on *Tobin's Q* is significantly higher for group affiliates relative to standalones. This implies that after controlling for opacity, the disciplinary effect of debt is stronger for group affiliates.

With regard to the effect of opacity on *Tobin's Q*, estimates in Table 8(a) show that none of the three opacity measures have any effect on market value in the case of standalones. This implies that while standalone firms on average have higher ownership opacity, such opacity is not

associated with any discount in their market value. This could be because the market factors in that the incentive or ability of controlling shareholders in standalone companies without any pyramidal structures do not exist. In contrast, *ownership opacity (measure 2)* and *ownership opacity (measure 3)* which capture the fragmentation of promoter ownership in firms have a negative and significant effect on *Tobin's Q* for group affiliates. This is indicative of the fact that the market perceives that such fragmentation could be strategic and can potentially increase the vulnerability of a group affiliate to expropriation.

With regard to the determinants of *leverage* after incorporating the opacity variables (Table 8(b)), we find that other than *ownership opacity (measure 2)*, opacity variables have no effect on *leverage*. In the case of *ownership opacity (measure 2)*, what is interesting to note is that its effect in the case of standalones is negative and significant and its effect on debt in the case of group affiliates is positive and significant. Following Faccio and Lang (2001) one can argue that the extent to which debt can be used as an expropriation device depends on the balancing of the controlling shareholders incentives to expropriate on the one hand and the extent to which they factor in the concerns of informed suppliers of external finance on the other. If capital markets are well functioning and disclosure and accounting norms are transparent, external suppliers of finance would factor in the possibility of expropriation through debt in firms that are more vulnerable to such expropriation. If motive for expropriation dominates, one would expect firms with higher vulnerability to expropriation to have higher leverage. On the other hand if firms are more keen to access external finance for their growth, the controlling shareholders/managers of firms which are more vulnerable to expropriation, would have an incentive to signal its absence by holding lower levels of debt. Applying this intuition we can interpret our differential results on the effect of *ownership opacity (measure 2)* on standalones and group affiliates. Given that the pyramidal structure of groups naturally facilitates expropriation combined with the generally perceived notion that groups have access to internal capital markets to raise funds for investment (see for example, Khanna and Palepu, 2000), the compulsions of firms with higher vulnerability to expropriation to signal the market through lower debt levels will be weaker. Our estimates with respect to group affiliates does show that firms more vulnerable to expropriation do indeed have higher levels of debt. The opposite is likely to hold for standalones which are typically run by professional managers concerned about reputation effects and with no internal capital market along the likes of group firms to access investment capital Thus, all other things remaining the same, standalone firms that are more opaque are likely to have higher incentive to signal the capital market of the absence of expropriation by holding lower levels of debt.

Our results with respect to debt and expropriation using our measures of opacity that proxy for the vulnerability to expropriation show that the conclusions are sensitive to the particular measure we use. The crux of the result is that while opacity does not matter in firm value for standalones, which is along expected lines, it is associated with a discount in value for group affiliates. More opaque group affiliates firms with fragmented ownership structures are also found to be more leveraged. However, the presence of opacity does not by itself undermine the role of debt in both standalones and group affiliates in reducing agency costs. The disciplining effect through higher debt commitments are found to outweigh any expropriation that might take place through debt in group affiliates.

7. Conclusions

In this paper we analyzed the role of debt in corporate governance with respect to a large emerging economy, India, where debt has played an important role as a source of external finance. Specifically, we analyzed if debt acts as a disciplining device in those companies where potential for overinvestment is present. In doing so we undertook a comparative evaluation of the role of debt in group-affiliated versus non-affiliated (or stand alone) companies to gain insights into the important issue of whether the governance role of debt is sensitive to ownership and control structures. Additionally, we analyzed the role of *institutional change* in facilitating the disciplining role or mitigating the expropriating effect of debt.

The primary findings that emerged from our analysis across the years is that while in the early years of institutional change, debt did not have any disciplinary effect on either low growth standalone or group affiliated firms, the disciplinary effect appeared in the later years, as institutions become more market oriented. We also found limited evidence of debt being used as a mechanism for expropriation in group affiliated firms that are more vulnerable to such expropriation. However, the disciplining effect of debt was found to persist even after controlling for expropriation possibilities. In general, our results tend to support the hypotheses that the disciplining role of debt could be sensitive to ownership and control structures of corporations and that institutional features of the country can have significant bearing on debt governance.

References

Agrawal, Anup and Knoeber, Charles R. (1996), "Firm Performance and Mechanisms to Control Agency Problems between Managers and Shareholders," *Journal of Financial and Quantitative Analysis*, 31(3): 377-97.

Anderson, Ronald C. , Mansi Sattar A., and Reeb David M.,(2002), "Founding FamilyOwnership and the Agency Cost of Debt," Working Paper, Kogod School of Business, American University .
http://papers.ssrn.com/sol3/delivery.cfm/SSRN_ID303864_code020622670.pdf?abstractid=303864

Baer, Herbert L. and Gray, Cheryl W. (1996), "Debt as a Control Device in Transitional Economies: The Experiences of Hungary and Poland," in Frydman, Roman, Gray, Cheryl W., Rapaczynski, Andrzej, (eds). *Corporate governance in Central Europe and Russia. Volume 1. Banks, funds, and foreign investors. Budapest: Central European University Pres*s, Oxford University Press, New York: 68-110.

Berglof, E. (1995), "Corporate Governance in Transition Economies: the Theory and Its Policy Implications," in M. Aoki and H-K Kim (eds.), *Corporate Governance in Transitional Economies: Insider Controal and the Role of Banks* (Washington D.C.: World Bank).

Bertrand, Marianne and Sendhil Mullainathan (2002), "Ferreting Out Tunneling: An Application to Indian Business Groups," *The Quarterly Journal of Economic*, Vol. 117, 1, 121-148.

Bhattacharya, Utpal, Hazem Daouk and Michael Welker (2003) The World Price of Earnings

Opacity, *The Accounting Review*, 2003, vol 78, 641-678.

Casson, Mark (1999), "The Economics of the Family Firm," *Scandanavian Economic History Review*, 47: 10-23.

Chami, R. (1999), "What is Different About Family Business?," Working Paper, University of Notre Dame and International Monetary Fund.

Claessens, Stijn, Simeon Djankov, and Larry H. P. Lang, 2000, "The Separation of Ownership and Control in East Asian Corporations," *Journal of Financial Economics*, 58 (1-2), 81-112.

Claessens, Stijn and Joseph Fan, 2002. "Corporate Governance in Asia: A Survey," *International Review of Finance*, 2002, 3, 105-129.

Day, Judy and Peter Taylor (2004), "Institutional Change and debt-based corporate Governane: A Comparative Analysis of Four Transition Economies," *Journal of Management and Governance*, Vol. 8, 73-115.

Demirguc-Kunt, Asli and Ross Levine, 1999, "Financial Structures Across Countries: Stylized Facts", Washington, D.C., World Bank Working Paper.

de Jong, Abe (2002), "The Disciplining Role of Leverage in Dutch Firms," *European Finance Review*, Volume 6, Number 1, 2002, pp. 31-62.

Dewatripont, Mathias & Tirole, Jean, 1994. "A Theory of Debt and Equity: Diversity of Securities and Manager-Shareholder Congruence," *The Quarterly Journal of Economics*, vol. 109(4), 1027-54.

Driffield, Nigel, Vidya Mahambare and Sarmistha Pal, 2005. "How Ownership Structure Affects Capital Structure and Firm Performance? Recent Evidence from East Asia," Working Paper, Brunel University.

Faccio Mara, Lang Larry H. P., and Young Leslie (2001), "Debt and Corporate Governance," Working Paper. http://mba.vanderbilt.edu/fmrc/Activity/paper/Faccio_Paper_Debt.pdf

Friedman, E., Johnson, S. and T. Mitton , 2003. "Propping and Tunneling," *Journal of Comparative Economics*, 31: 732-750.

Grossman Sanford J.. and Hart Oliver D. (1982), "Corporate Financial Structure and Managerial Incentives in J. McCall (ed.), *The Economics of Information and Uncertainty*, Chicago: University of Chicago Press.

Grullon, Gustavo and Kanatas, George (2001), "Managerial Incentives, Capital Structure and Firm Value: Evidence from Dual Class Stocks," Working Paper, Rice University.

Handbook of Statistics on the Indian Securities Markets, Securities and Exchange Board of India, 2004.

Harris, Milton and Raviv, Artur (1988), "Corporate Control Contests and Capital Structure," *Journal of Financial Economics*, 20(1/2): 55-86.

Hart, Oliver and Moore, John (1994), "A Theory of Debt Based on the Inalienability of Human Capital," *Quarterly Journal of Economics*, 109(4) : 841-79.

Hart, Oliver, and Moore, John (1995), "Debt and Seniority: An Analysis of the Role of Hard Claims in Constraining Management," *American Economic Review*, 85(3): 567-85.

Harvey, Campbell R., Lins, Karl V. and Roper, Andrew H. (2004), "The Effect of Capital Structure when Expected Agency Costs are Extreme," *The Journal of Financial Economics* 74,3-30.

IDBI (2001), *Report on Development Banking in India, 1999-2000.* Industrial Development Bank of India, Mumbai.

Jensen, Michael C. (1986), "Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers," *American Economic Review*, 76(2): 323-29.

Jensen, M.C. and W.H. Meckling, 1976, Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, *Journal of Financial Economics* 3, 305-360.

Johnson, Simon, La Porta, Rafael, Lopez de Silanes, Florencio and Shleifer, Andrei, (2000), "Tunneling," *American Economic Review;* 90(2), pp. 22-27.

La Porta, Rafael, Lopez de Silanes, Florencio and Shleifer, Andrei (1999), "Corporate Ownership around the World," *Journal of Finance*, 54(2): 471-517.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R. (1998) Law and Finance. *Journal of Political Economy* 106, 1113-1155.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R. (1999) The Quality of Government. *Journal of Law, Economics and Organization* 15, 222-279.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R. 2000) Agency Problems and Dividend Policies Around the World. *Journal of Finance* 55, 1-33.

Lummer, Scott L. and John J. McConnell, "Further Evidence on the Bank Lending Process and the Capital Market Response to Bank Loan Agreements," *The Journal of Financial Economics* 25, (4) 1989, 99-122

Khanna, Tarun, and Krishna Palepu, 2000, "Is Group Affiliation Profitable in Emerging Markets? An Analysis of Diversified Indian Business Groups," *Journal of Finance* 55, no. 2: 867-891.

Lehn, K. and A. Poulsen, 1989, "Free Cash Flow and Stockholder Gains in Going Private Transactions," *The Journal of Finance*, 44, 771-787.

Myers, Stewart C. (1977), "Determinants of Corporate Borrowing," *Journal of Financial Economics* 5, 147-175.

McConnell, John J. and Servaes, Henri (1995), "Equity Ownership and the Two Faces of Debt," Journal of Financial Economics; 39(1) : 131-57.

Morck, Randall, Andrei Shleifer and Robert W. Vishny,. 1988, "Management Ownership and Market Valuation: An Empirical Analysis," *Journal of Financial Economics*, 20, 293-315.

Novaes, Walter and Zingales, Luigi (1995), "Capital Structure Choice When Managers are in Control: Entrenchment Versus Efficiency," National Bureau of Economic Research Working Paper: 5384 : 1 - 34.

Price Waterhouse Coopers, 2001. *The Opacity Index* . Price Waterhouse Coopers.

Prowse, Stephen (1999). " Corporate Governance: Emerging Issues and Lessons from East Asia," mimeo, World Bank.

Rajan, R.G. and L. Zingales, 1995, "What Do We Know About the Capital Structure: Some Evidence from International Data," *Journal of Finance* 50, 1421-1460.

Ross, Stephen, 1977, "The Determination of Financial Structure: The Incentive Signalling Approach," *Bell Journal of Economics*, 8: 23-40.

Sarkar, Jayati and Subrata Sarkar (2000), "Large Shareholder Activism in Developing Countries: Evidence from India," *International Review of Finance*, September.

Sarkar, Jayati and Sarkar, Subrata (2001), "Liberalization, Financing Pattern and Corporate Performance," (with Subrata Sarkar) in *Revue Tiers Monde*, Jan-Mar: 61 – 82.

Shleifer, Andrei and Robert W. Vishny, 1997, "A Survey of Corporate Governance," *The Journal of Finance*, vol. LII, no.2, 737-783.

Singh, Ajit, 1995, "Corporate Financing Patterns in Industrializing Economies: A Comparative International Study", IFC Technical Chapter No. 2.

Smith, C.W and R. Watts, 1992, "The Investment Opportunity Set and Corporate Financing, Dividend, and Compensation Policies, *Journal of Financial Economics* 32, 263-292.

Stulz, Rene M. (1990), "Managerial Discretion and Optimal Financing Policies," Journal of Financial Economics; 26(1) : 3-27.

Tian Lihui, 2005. "Bank Lending, Corporate Governance, and Government Ownership in China," Working Paper.

Titman, Sheridan, and Roberto Wessels, 1988, "The Determinants of Capital Structure Choice," *Journal of Finance*, 43: 1-19.

Zwiebel, Jeffrey (1996), "Dynamic Capital Structure under Managerial Entrenchment," *American Economic Review*, 86(5) : 1197-1215.

Table 1: Trends in Financial Development and Financial Structure in India

The table documents the trends in financial development and financial structure in India. The table is constructed using data from *Report on Trends and Progress in Banking*, various issues, Reserve Bank of India; *Report of Development Banking in India*, various issue, Industrial Development Bank of India; and *Handbook of Statistics on the Indian Securities Markets*, Securities and Exchange Board of India, 2004. Bank assets are calculated using data on both scheduled commercial banks and all India financial institutions. Bank credit includes credit by scheduled commercial banks only.

	1991	1996	2000	2001	2002
Stock Market Development					
Market Capitalization to GDP	0.21	0.44	0.47	0.27	0.27
Value Traded to GDP	0.08	0.19	1.07	1.36	0.39
Turnover Ratio	0.39	0.40	2.15	4.78	1.39
Banking Sector Development					
Bank Assets to GDP	0.64	0.63	0.69	0.73	0.74
Bank credit to GDP	0.20	0.20	0.21	0.22	0.27
Overall Financial Development					
Bank Assets plus market capitalization to GDP	0.85	0.94	1.02	1.01	1.02
Bank Credit plus Value Traded to GDP	0.29	0.39	1.28	1.59	0.66
Financial Structure					
Bank Assets to Market Capitalization	3.13	1.34	1.46	2.68	2.78
Bank Credit to Value Traded	2.58	1.07	0.19	0.16	0.69

Table 2: Quality of Corporate Governance Institutions in India in the Nineties

The table gives a comparative assessment of the quality of corporate governance institutions in India and those in developed economies. The notes to the table and the various studies from which the table is complied are as follows:
(1) Scale from 0 to 10, with lower scores showing lower efficiency levels, less tradition of law and order and lower scores for higher risks, respectively.
(2) The score is given on a scale ranging from 0 to 100, with higher scores showing better disclosure levels, higher opacity in accounting and higher accounting standards, respectively.
(3) The index ranges from 0 to 6, with higher values signifying stronger "Anti-director Rights".
(4) The index ranges from 0 to 4, with higher values signifying stronger "Creditor Rights".
* Except for "Anti-Director Rights", a values of 1 shows the presence of the relevant feature (i.e., implying that investor protection is in the law).
** Except for "Creditor Rights", a value of 1 shows the presence of the relevant feature (i.e., implying that creditor protection is in the law).
Compiled From:
La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R. (1999) Corporate Ownership Around the World. *Journal of Finance* 54, 471-517.
La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R. (1998) Law and Finance. *Journal of Political Economy* 106, 1113-1155.
La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R. (1999) The Quality of Government. *Journal of Law, Economics and Organization* 15, 222-279.
La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R. 2000b) Agency Problems and Dividend Policies Around the World. *Journal of Finance* 55, 1-33.
Bhattacharya, Utpal, Hazem Daouk and Michael Welker (2003) The World Price of Earnings Opacity, *The Accounting Review*, 2003, vol 78, 641-678.
The Opacity Index , Price Waterhouse Coopers, 2001.

Country	**Legal and accounting variables**							**Variables Representing Shareholder Protection ***							**Variables Representing Creditor Rights ****				
	Efficiency of the Judicial System (1)	***Rule of Law (1)***	***Risk of Expropriation (1)***	***Auditor's per 100,000***	***Disclosure level (2)***	***Opacity in accounting (2)***	***Accounting Standards (Rating) (2)***	***One-Share, one vote***	***Proxy by mail allowed***	***Shares Not Blocked before meeting***	***Cumulative Voting***	***Oppressed Minorities Mechanism***	***Anti-Director Rights (3)***	***Mandatory Dividend***	***Restrictions for going into Reorganization***	***No Automatic Stay on Secured Assets***	***Secured Creditors First***	***Management does not stay in reorganizations***	***Creditors Rights (4)***
US	10	10.00	9.98	168	85	25	71	0	1	1	1	1	5	0	0	0	1	0	1
UK	10	8.57	9.71	352	76	45	78	0	1	1	0	1	5	0	1	1	1	1	4
Germany	9	9.23	9.90	26	67	n.a.	62	0	0	0	0	0	1	0	1	1	1	0	3
Japan	10	8.98	9.67	10	71	81	65	1	0	1	1	1	4	0	0	0	1	1	2
India	8	4.17	7.75	9	61	79	57	1	0	1	1	1	5	0	1	1	1	1	4

Table 3: Variables Definition

The table defines the construction of the variables used in the empirical analyses.

Variable Name	Definition
Price earnings ratio	Annual mean daily closing stock price divided by operating earnings per share.
Tobin's Q	Market value of equity plus the book value of debt divided by the book value of assets.
Leverage	Total debt divided by total assets.
Long term leverage	Total long term debt divided by total assets.
Group affiliation	Dummy variable; equals 1 if the firm is affiliated to a group.
Non-debt tax shield	Operating income minus interest payments and tax payments over the corporate tax rate divided by total assets
Asset tangibility	Fixed assets divided by total assets.
Risk	Dummy variable; equals 1 for firms in the bottom decile of the interest coverage ratio distribution. Interest coverage ratio is total operating income divided by total interest expense.
Free cash flow	Operating income minus taxes, interest expenditures and dividend payments divided by total assets
Promoters' share ownership	Percentage share ownership by promoters.
Financial institutions' share ownership	Percentage share ownership by financial institutions.
Foreign share ownership	Percentage share ownership by foreign investors.
Public share ownership	Percentage share ownership by public.
Log of Total assets	Log of total assets. Total assets is measured in INR and units of ten million.
Advertising intensity	Total advertisement expenditure divided by total assets.
R & D intensity	Total research and development expenditures divided by total assets.
Ownership opacity (measure 1)	Total promoters' share ownership from aggregate data minus total promoters' share ownership from 1 percent data, divided by total promoters' share ownership from aggregate data.
Ownership opacity (measure 2)	Total promoters' share ownership obtained by aggregating separate holdings of 1 percent or more minus total promoters' share ownership obtained by aggregating separate holdings of 5 percent or more, divided by total promoters' share ownership obtained by aggregating separate holdings of 1 percent or more.
Ownership opacity (measure 3)	Total number of separate holdings by promoters of 1 percent or more minus total number of separate holdings by promoters of 5 percent or more, divided by total number of separate holdings by promoters of 1 percent or more.

Table 4(a): Summary Statistics for the Full Sample

The table reports the summary statistics for the years 1996, 2000, and 2003 for the full sample i.e., without distinguishing between high and low growth firms and group-affiliated and standalone firms. The reported numbers (except for sample size) are sample means. The asterisks denote the significance of the test of equality of yearly means with respect to those in the year 1996. The symbols ***, **, and * denote the difference is significant at the 1%, 5% and 10% level, respectively. The variable definitions are given in Table 3.

	1996	2000	2003
Sample size	1211	1024	1266
Price earnings ratio	3.79	4.07	3.19***
Tobin's Q	0.81	0.79	0.55***
Long term leverage	0.24	0.24	0.18***
Leverage	0.38	0.38	0.31***
Free cash flow	0.08	0.06***	0.07***
Total assets	154.05	204.52*	208.42
Financial institutions' share ownership	4.63	5.15*	4.53
Foreign share ownership	7.94	6.53***	6.27***
Promoters' share ownership	40.88	51.11***	47.74**
Public share ownership	33.53	28.19***	31.87***

Table 4(b): Summary Statistics by Ownership Groups

The table reports the summary statistics for the years 1996, 2000, and 2003 with firms classified into group-affiliates and standalones based on their ownership status. Group-affiliates are those firms that are affiliated to a business group while standalones are non-affiliated firms. The reported numbers (except for sample size) are sample means. The asterisks denote the significance of the test of equality of means of the group-affiliates and the standalones samples for each year. The symbols ***, **, and * denote the difference is significant at the 1%, 5% and 10% level, respectively. The variable definitions are given in Table 3.

	1996		2000		2003	
	Stand-alones	Group Affiliates	Stand-Alones	Group Affiliates	Stand-Alones	Group Affiliates
Sample size	714	497	564	460	697	569
Price earnings ratio	4.20	3.19***	4.77	3.22***	3.66	2.62***
Tobin's Q	0.77	0.86***	0.79	0.79	0.52	0.59***
Long term leverage	0.22	0.27***	0.21	0.29***	0.15	0.22***
Leverage	0.36	0.39***	0.36	0.41***	0.28	0.33***
Free cash flow	0.08	0.09***	0.07	0.06**	0.07	0.07
Total assets	36.54	322.90***	49.15	395.03***	43.01	413.01***
Financial institutions' share ownership	2.77	7.30***	2.86	7.96***	2.58	6.96***
Foreign share ownership	7.23	8.96***	5.68	7.58***	5.02	7.82***
Promoters' share ownership	40.45	41.48	50.85	51.42	47.62	47.89
Public share ownership	36.28	29.59***	29.89	26.11***	35.44	27.46***

Table 4(c): Summary Statistics by Low Growth and High Growth Firms

The table reports the summary statistics for the years 1996, 2000, and 2003 with firms classified into low growth and high growth. Low growth firms are those with price-earnings ratio below the industry median while high growth firms are those with price-earnings ratio above the median. The reported numbers (except for sample size) are sample means. The asterisks denote the significance of the test of equality of means of the low growth and high growth samples for each year. The symbols ***, **, and * denote the difference is significant at the 1%, 5% and 10% level, respectively. The variable definitions are given in Table 3.

	1996		2000		2003	
	Low Growth	High Growth	Low Growth	High Growth	Low Growth	High Growth
Sample size	604	607	512	512	634	632
Price earnings ratio	1.64	5.93***	0.88	7.26***	0.72	5.68***
Tobin's Q	0.69	0.93***	0.58	1.00***	0.48	0.62***
Long term leverage	0.27	0.21***	0.29	0.20***	0.23	0.14***
Leverage	0.42	0.33***	0.45	0.32***	0.37	0.24***
Free cash flow	0.09	0.07***	0.06	0.06	0.08	0.06***
Total assets	113.82	194.11***	155.65	253.38***	147.81	270.10***
Financial institutions' share ownership	5.26	4.00***	5.66	4.65***	5.44	3.61***
Foreign share ownership	6.29	9.58***	5.56	7.51***	5.64	6.91***
Promoters' share ownership	40.95	40.80	51.56	50.66	48.25	47.22***
Public share ownership	34.49	32.58*	29.38	27.01***	31.54	32.21

Table 4(d): Summary Statistics by Ownership Groups -- Low Growth Firms

The table reports the summary statistics for the years 1996, 2000, and 2003 for low growth firms classified by their ownership status. Low growth firms are those with price-earnings ratio below the industry median. Group-affiliates are those firms that are affiliated to a business group while standalones are non-affiliated firms. The reported numbers (except for sample size) are sample means. The asterisks denote the significance of the test of equality of means of the group-affiliates and the standalones samples for each year. ***, **, and * denote the difference is significant at the 1%, 5% and 10% level, respectively. The variable definitions are given in Table 3.

	1996		2000		2003	
	Stand-alones	Group Affiliates	Stand-alones	Group Affiliates	Stand-alones	Group Affiliates
Sample size	335	269	263	249	341	293
Price earnings ratio	1.67	1.60	0.88	0.88	0.72	0.71
Tobin's Q	0.68	0.69	0.57	0.59	0.46	0.50***
Long term leverage	0.25	0.29***	0.26	0.32***	0.20	0.26***
Leverage	0.42	0.42	0.43	0.46***	0.35	0.39***
Free cash flow	0.09	0.09	0.07	0.05***	0.09	0.07***
Total assets	44.31	200.39***	52.98	264.11***	44.67	270.24***
Financial institutions' share ownership	3.62	7.31***	3.42	8.02***	3.22	8.08***
Foreign share ownership	5.86	6.83	5.58	5.54	4.83	6.61***
Promoters' share ownership	40.70	41.26	51.62	51.49	48.86	47.54
Public share ownership	36.95	31.44***	30.52	28.17***	34.46	28.07***

Table 4(e): Summary Statistics by Ownership Groups -- High Growth Firms

The table reports the summary statistics for the years 1996, 2000, and 2003 for high growth firms classified by their ownership status. Low growth firms are those with price-earnings ratio above the industry median. Group-affiliates are those firms that are affiliated to a business group while standalones are non-affiliated firms. The reported numbers (except for sample size) are sample means. The asterisks denote the significance of the test of equality of means of the group-affiliates and the standalones samples for each year. The symbols ***, **, and * denote the difference is significant at the 1%, 5% and 10% level, respectively. The variable definitions are given in Table 3.

	1996		2000		2003	
	Stand-alones	Group Affiliates	Stand-alones	Group Affiliates	Stand-alones	Group Affiliates
Sample size	379	228	301	211	356	276
Price earnings ratio	6.44	5.07***	8.17	5.97***	6.48	4.65***
Tobin's Q	0.86	1.06***	0.98	1.02	0.57	0.68***
Long term leverage	0.19	0.24***	0.16	0.25***	0.11	0.17***
Leverage	0.32	0.36***	0.30	0.36***	0.21	0.27***
Free cash flow	0.06	0.09***	0.06	0.07***	0.06	0.07***
Total assets	29.67	467.45***	45.78	549.53***	41.38	565.10***
Financial institutions' share ownership	2.03	7.28***	2.38	7.89***	1.94	5.76***
Foreign share ownership	8.44	11.48***	5.77	9.99***	5.21	9.10***
Promoters' share ownership	40.23	41.75	50.17	51.34	46.41	48.26
Public share ownership	35.69	27.41***	29.33	23.69***	36.41	26.80***

Table 5(a): Determinants of Tobin's Q -- Low Growth Firms

The table reports the regression results for the determinants of Tobin's Q for low growth firms. Low growth firms are those with price-earnings ratio below the industry median. The coefficients are 2SLS estimates from the simultaneous equations model for Tobin's Q and leverage. Tobin's Q is market value of equity plus book value of debt divided by book value of assets, and leverage is total debt divided by total assets. The explanatory variables are defined in Table 3. P-values are in parenthesis. Industry dummies are included in the regression but their coefficient estimates are not reported. The symbols ***, **, and * denote the coefficient is significant at the 1%, 5% and 10% level, respectively.

	1996	2000	2003
Intercept	0.7616***	-0.0362	0.0431
	(<0.0001)	(0.7586)	(0.5578)
Leverage	0.1557	1.0233***	0.8255***
	(0.3384)	(<0.0001)	(<0.0001)
Leverage x Group affiliation	0.2842	-0.7674***	-0.3839***
	(0.3784)	(0.0024)	(0.0055)
Group Affiliation	0.0002	0.0049	-0.0095
	(0.9990)	(0.8041)	(0.3742)
Promoters' share ownership	0.0005	0.0009	0.0002
	(0.1394)	(0.1063)	(0.3630)
Financial Institutions' share ownership	0.0019*	0.0025*	0.0010
	(0.0762)	(0.0692)	(0.2177)
Foreign share ownership	0.0024***	0.00124	0.0009*
	(0.0039)	(0.1865)	(0.0598)
Log of total assets	-0.0226	0.0615***	0.0384**
	(0.4429)	(0.0022)	(0.0268)
Advertising intensity	-0.0031	0.01188**	-0.0043
	(0.6823)	(0.0307)	(0.3188)
R & D intensity	-0.0221	-0.0018**	-0.0032
	(0.1667)	(0.0307)	(0.5710)
Industry dummies	Yes	Yes	Yes
No. of observations	604	512	634
R^2	0.06	0.14	0.39
F-statistic	1.65**	3.61***	17.65***

Table 5(b): Determinants of Leverage -- Low Growth Firms

The table reports the regression results for the determinants of leverage for low growth firms. Low growth firms are those with price-earnings ratio below the industry median. The coefficients are 2SLS estimates from the simultaneous equations model for Tobin's Q and leverage. Tobin's Q is market value of equity plus book value of debt divided by book value of assets, and leverage is total debt divided by total assets. The explanatory variables are defined in Table 3. P-values are in parenthesis. Industry dummies are included in the regression but their coefficient estimates are not reported. The symbols ***, **, and * denote the coefficient is significant at the 1%, 5%, and 10% level, respectively.

	1996	2000	2003
Intercept	0.1770**	0.0355	-0.0720**
	(0.0235)	(0.5956)	(0.0175)
Tobin's Q	0.2656*	0.4757*	1.0085***
	(0.1004)	(0.0771)	(<0.0001)
Group affiliation	-0.0086	0.0005	-0.0144**
	(0.3139)	(0.9578)	(0.0248)
Promoters' share ownership	0.0003*	0.0001	-0.0001
	(0.0924)	(0.7798)	(0.3558)
Non-debt tax shield	-1.7161***	-1.0557***	-0.3872***
	(<0.0001)	(<0.0001)	(<0.0001)
Asset tangibility	0.1231***	0.0873*	-0.0058
	(0.0001)	(0.0608)	(0.8541)
Risk	-0.0123	0.0550**	0.0107
	(0.5194)	(0.0493)	(0.6443)
Free cash flow	0.0163***	1.1974***	0.2036
	(<0.0001)	(<0.0001)	(0.2238)
Log of total assets	-0.0042	0.0108*	0.0021
	(0.8922)	(0.0879)	(0.6655)
Industry dummies	Yes	Yes	Yes
No. of observations	604	512	634
R^2	0.50	0.61	0.71
F-statistic	28.23***	37.37***	70.05***

Table 6(a): Determinants of Tobin's Q -- High Growth Firms

The table reports the regression results for the determinants of Tobin's Q for high growth firms. High growth firms are those with price-earnings ratio above the industry median. The coefficients are 2SLS estimates from the simultaneous equations model for Tobin's Q and leverage. Tobin's Q is market value of equity plus book value of debt divided by book value of assets, and leverage is total debt divided by total assets. The explanatory variables are defined in Table 3. P-values are in parenthesis. Industry dummies are included in the regression but their coefficient estimates are not reported. The symbols ***, **, and * denote the coefficient is significant at the 1%, 5% and 10% level, respectively.

	Standalones			Group Affiliates		
	1996	2000	2003	1996	2000	2003
Intercept	0.6390***	0.7611***	0.2301**	0.9431***	-0.0947	0.0248
	(<0.0001)	(0.0002)	(0.0546)	(<0.0001)	(0.7699)	(0.8570)
Leverage	-0.5036***	-1.2288***	-0.2947	-0.7801***	-1.2194***	-0.4383***
	(0.0120)	(0.0002)	(0.2195)	(0.0089)	(0.0024)	(0.0152)
Promoters' share ownership	0.0013	0.0008	0.0034***	0.0029*	0.0096***	0.0044***
	(0.1096)	(0.7167)	(0.0028)	(0.0765)	(0.0035)	(0.0010)
Financial Institutions' share ownership	0.0058*	-0.0005	0.0055	-0.0002	0.0092*	0.0002
	(0.0830)	(0.5716)	(0.2533)	(0.9681)	(0.0932)	(0.9221)
Foreign share ownership	0.0028*	-0.0030	0.0579**	0.0052**	0.0110***	0.0054***
	(0.0614)	(0.4511)	(0.0298)	(0.0325)	(0.0072)	(0.0025)
Log of total assets	0.0995***	0.1287***	0.0283	0.0363	0.0765***	0.0656***
	(<0.0001)	(0.0003)	(0.1517)	(0.1174)	(0.0079)	(<0.0001)
Advertising intensity	0.0177	0.0144	0.0016	0.0189	0.0042	0.0254***
	(0.1489)	(0.2412)	(0.8593)	(0.3213)	(0.7686)	(0.0015)
R & D intensity	0.0129	0.0798**	-0.0045	0.0314	0.1544***	0.0411**
	(0.6065)	(0.0414)	(0.8666)	(0.1954)	(0.0082)	(0.0286)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	379	301	356	228	211	276
R^2	0.16	0.29	0.08	0.20	0.34	0.28
F-statistic	3.37***	5.72***	1.45*	2.67***	4.81***	4.90***

Table 6(b): Determinants of Leverage -- High Growth Firms

The table reports the regression results for the determinants of leverage for high growth firms. High growth firms are those with price-earnings ratio above the industry median. The coefficients are 2SLS estimates from the simultaneous equations model for Tobin's Q and leverage. Tobin's Q is market value of equity plus book value of debt divided by book value of assets, and leverage is total debt divided by total assets. The explanatory variables are defined in Table 3. P-values are in parenthesis. Industry dummies are included in the regression but their coefficient estimates are not reported. The symbols ***, **, and * denote the coefficient is significant at the 1%, 5% and 10% level, respectively.

	Standalones			Group Affiliates		
	1996	2000	2003	1996	2000	2003
Intercept	-0.1464	-0.0774	-0.1742**	0.1969**	0.0615	0.0105
	(0.1553)	(0.2037)	(0.0180)	(0.0159)	(0.4267)	(0.8473)
Tobin's Q	0.3934	0.0364	0.5098*	0.0119	-0.1094	0.0916
	(0.1696)	(0.7114)	(0.0588)	(0.9288)	(0.1525)	(0.3222)
Promoters' share ownership	-0.0005	0.0004	-0.0009	0.0010**	0.0012**	0.0007
	(0.2829)	(0.3731)	(0.2147)	(0.0319)	(0.0440)	(0.1165)
Non-debt tax shield	-2.7891***	-1.2699***	-1.8598***	-0.9382	-0.6302	-1.6380***
	(0.0084)	(<0.0001)	(0.0042)	(0.3183)	(0.4143)	(<0.0001)
Asset tangibility	0.0800	0.1878***	0.1208***	0.1917***	0.1364***	0.1897***
	(0.3307)	(<0.0001)	(0.0028)	(<0.0001)	(<0.0001)	(<0.0001)
Risk	0.0309	0.1313***	-0.0317	0.1444**	0.0717	0.0724
	(0.5724)	(<0.0001)	(0.7375)	(0.0323)	(0.1147)	(0.1229)
Free cash flow	1.9049**	1.3188**	1.2225*	0.3743	0.1127	1.5371**
	(0.0204)	(0.0484)	(0.0760)	(0.7022)	(0.9242)	(0.0167)
Log of total assets	0.0484***	0.0494***	0.0463***	0.0116	0.0322***	0.0158**
	(0.0045)	(<0.0001)	(<0.0001)	(0.1969)	(0.0002)	(0.0353)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	379	301	356	228	211	276
R^2	0.39	0.53	0.34	0.43	0.46	0.54
F-statistic	11.38***	15.54***	8.82***	7.84***	8.28***	15.10***

Table 7: Ownership Opacity in Low Growth Firms

The table gives summary statistics of opaqueness of promoters' share ownership for standalone and group-affiliated firms. The alternative measures of opaqueness are defined in Table 3 and are based on the fragmented nature of promoters' holdings. Group-affiliates are those firms that are affiliated to a business group while standalones are non-affiliated firms. The reported numbers are sample means and medians. The asterisks denote the significance of the test of equality of means and medians of group-affiliates and standalones. The symbols ***, **, and * denote the difference is significant at the 1%, 5% and 10% level, respectively.

	Standalones		Group Affiliates	
	Mean	Median	Mean	Median
Promoters' share ownership	49.46	50.67	51.58	50.78
Ownership opacity (measure 1)	0.19	0.06	0.12***	0.04***
Ownership opacity (measure 2)	0.24	0.17	0.19***	0.14***
Ownership opacity (measure 3)	0.56	0.60	0.50***	0.50***

Table 8(a): Determinants of Tobin's Q With Ownership Opacity –Low Growth Firms

The table reports the regression results for the determinants of Tobin's Q for low growth firms in the presence of ownership opacity. Estimates are for the year 2003 for which detailed ownership data is available. Low growth firms are those with price-earnings ratio below the industry median. Ownership opacity captures the fragmented nature of promoters' holdings and its alternative measures are defined in Table 3. The coefficients are 2SLS estimates from the simultaneous equations model for Tobin's Q and leverage. Tobin's Q is market value of equity plus book value of debt divided by book value of assets, and leverage is total debt divided by total assets. The explanatory variables are defined in Table 3. P-values are in parenthesis. Industry dummies are included in the regression but their coefficient estimates are not reported. The symbols ***, **, and * denote the coefficient is significant at the 1%, 5% and 10% level, respectively.

	Standalones			Group Affiliates		
Intercept	0.1778***	0.1742***	0.1943***	0.1370***	0.1627***	0.1282***
	(<0.0001)	(<0.0001)	(<0.0001)	(<0.0001)	(<0.0001)	(<0.0001)
Leverage	0.6008***	0.5814***	0.5121***	0.7865***	0.7876***	0.7833***
	(<0.0001)	(<0.0001)	(<0.0001)	(<0.0001)	(<0.0001)	(<0.0001)
Promoters' share ownership	0.0002	0.0002	-0.0001	0.0006**	0.0003	0.0007**
	(0.5092)	(0.5042)	(0.9703)	(0.0520)	(0.2593)	(0.0173)
Ownership opacity (measure 1)	-0.0160			0.0176		
	(0.3642)			(0.4297)		
Ownership opacity (measure 2)		-0.0010			-0.0565***	
		(0.9651)			(0.0109)	
Ownership opacity (measure 3)			-0.0056			-0.0302**
			(0.7718)			(0.0512)
Financial institutions' share ownership	0.0006	0.0006	0.0004	-0.0002	-0.0003	-0.0001
	(0.4409)	(0.4158)	(0.6070)	(0.6403)	(0.4844)	(0.9982)
Foreign share ownership	0.0015*	0.0011*	0.0015**	0.0006	0.0005	0.0003
	(0.0589)	(0.0836)	(0.0255)	(0.1129)	(0.1718)	(0.3590)
Log of total assets	0.0162	0.01211*	0.0157**	0.0047	0.0053	0.0068*
	(0.1258)	(0.0799)	(0.0468)	(0.2553)	(0.1990)	(0.0937)
Advertising intensity	0.0050	0.0047	0.0044	-0.0073*	-0.0073*	-0.0079**
	(0.2386)	(0.2745)	(0.3356)	(0.0677)	(0.0665)	(0.0422)
R & D intensity	-0.0060	-0.0006	-0.0079	-0.0009	-0.0016	-0.0015
	(0.3465)	(0.3508)	(0.2607)	(0.8843)	(0.7895)	(0.7887)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	341	341	341	293	293	293
R^2	0.49	0.48	0.45	0.62	0.63	0.65
F-statistic	14.63***	14.10***	11.67***	21.51***	22.21***	23.64***

Table 8(b): Determinants of Leverage with Ownership Opacity – Low Growth Firms

The table reports the regression results for the determinants of leverage for low growth firms in the presence of ownership opacity. Estimates are for the year 2003 for which detailed ownership data is available. Low growth firms are those with price-earnings ratio below the industry median. Ownership opacitycaptures the fragmented nature of promoters' holdings and its alternative measures are defined in Table 3. The coefficients are 2SLS estimates from the simultaneous equations model for Tobin's Q and leverage. Tobin's Q is market value of equity plus book value of debt divided by book value of assets, and leverage is total debt divided by total assets. The explanatory variables are defined in Table 3. P-values are in parenthesis. Industry dummies are included in the regression but their coefficient estimates are not reported. The symbols ***, **, and * denote the coefficient is significant at the 1%, 5% and 10% level, respectively.

	Standalones			Group Affiliates		
Intercept	-0.0554	-0.0392	0.0079	-0.0539**	-0.0697**	-0.0423
	(0.2396)	(0.4433)	(0.8938)	(0.0649)	(0.0296)	(0.1653)
Tobin's Q	0.9419***	0.9763***	0.6831***	0.8350***	0.8400***	0.7979***
	(0.0002)	(0.0001)	(0.0078)	(<0.0001)	(<0.0001)	(<0.0001)
Promoters' share ownership	-0.0004*	-0.0005**	-0.0006**	-0.0001	0.0001	-0.0001
	(0.0655)	(0.0209)	(0.0422)	(0.6766)	(0.9246)	(0.6492)
Ownership opacity (measure 1)	0.0141			-0.0062		
	(0.2740)			(0.7506)		
Ownership opacity (measure 2)		-0.0321*			0.0365*	
		(0.0629)			(0.0736)	
Ownership opacity (measure 3)			-0.0179			0.0187
			(0.2290)			(0.1485)
Non-debt tax shield	-0.2757***	-0.2812***	-0.2816***	-0.7426***	-0.7675***	-0.7707***
	(0.0032)	(0.0029)	(0.0078)	(0.0003)	(0.0001)	(0.0001)
Asset tangibility	0.0152	0.0123	0.0449	0.0187	0.0167	0.0294
	(0.6413)	(0.7057)	(0.1357)	(0.6220)	(0.6606)	(0.4064)
Risk	0.0151	0.0121	0.0501	0.0211	0.0215	0.0249
	(0.6373)	(0.7533)	(0.1889)	(0.3099)	(0.2857)	(0.2163)
Free cash flow	0.0324	0.0233	0.0822	0.8041**	0.8790**	0.8669**
	(0.8574)	(0.8976)	(0.6818)	(0.0324)	(0.0176)	(0.0182)
Log of total assets	0.0029	0.0009	0.0111	0.0061	0.0059	0.0049
	(0.7547)	(0.9208)	(0.2800)	(0.1668)	(0.1798)	(0.2653)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	340	340	318	292	292	282
R^2	0.72	0.72	0.67	0.77	0.79	0.78
F-statistic	39.51***	39.38***	29.44***	43.48***	43.90***	45.19***