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Business Groups and Profit Redistribution: A boon or bane for firms?

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Abstract

This study investigates how profit redistribution affects the performance of firms affiliated to business groups. It shows that inefficient profit redistribution causes group-affiliated firms to perform poorly relative to independent firms. This underperformance persists even after controlling for other explanations such as diversification and resource transfers to unlisted firms. The study also shows that profit redistribution is more pronounced for groups of larger size and greater corporate control. The results of the study lend support for the inefficient profit redistribution explanation of the 'business group discount'.

1. Introduction

The organizational form of business groups is widely prevalent in many developed economies and most emerging markets. An extensive body of literature has examined Japanese *Keiretsus* (Berglof and Perotti, 1994; Weinstein and Yafeh, 1995; Lincoln, Gerlach and Ahmadjian, 1996; Hoshi and Kashyap, 2001; Gramlich, Limpaphayom and Rhee, 2004). In Europe, Bianco and Casavola (1999), Perotti and Gelfer (2001), Faccio and Lang (2002) and Buyschaert, Deloof and Jegers (2004) document the presence of business groups in several countries including Belgium, France, Italy, Russia and Sweden. Among the emerging economies, Bae, Kang and Kim (2002), Joh (2003) and Baek, Kang and Park (2004) study Korean *Chaebols*, Keister (2000) investigates Chinese business groups, and Khanna and Palepu (2000a, 2000b) provide evidence from India and Chile. Two recent cross-country studies by Khanna and Rivkin (2001) and Claessens, Fan and Lang (2002) further attest to the ubiquitous nature of business groups in emerging economies.

An important feature of a business group is that it can exploit its internal capital market by redistributing financial resources across firms. Resource transfers take place in many different ways varying from transfer prices, loans at non-market interest rates, new equity issues and asset sales to the extreme form of cash appropriation. Since it is very hard to verify such practices, one can only use an indirect approach to measure these transfers. Moreover, redistribution of resources can also affect the performance of group-affiliated firms. The purpose of this study is to provide empirical evidence on these issues.

A widely cited study by Bertrand, Mehta and Mullainathan (2002), hereafter BMM, explores the effect of resource transfers by controlling shareholders of business groups. Our study complements their study in several ways. BMM consider one-way resource transfers from firms lower down the pyramid to those higher up the pyramid, whereas we analyze the effect of resource transfers across firms regardless of their position in the pyramid. Moreover, resource transfer in our study is not restricted to pyramidal structures only, but also applicable to firms with cross share holdings. BMM analyze the prevalence of tunneling resources among group-affiliated firms, whereas our study also incorporates the phenomenon of negative tunneling (or propping): the possibility of lower performing or loss-making firms receiving transfers thereby benefiting even the minority shareholders of these firms.

In addition to documenting redistribution of resources among group-affiliated firms, we relate it with the extent of control exercised by controlling shareholders. Claessens, Djankov, Fan and Lang (2002) document that in a business group the influence of controlling shareholders on firm performance varies with the degree of control. We examine if higher levels of control result in the controlling shareholders possessing greater opportunities to redistribute profits. Furthermore, we investigate the influence of the size of the business group on the process of profit redistribution. This is important because groups consisting of a larger number of firms could be more prone to the phenomenon of profit redistribution.

Finally, we investigate whether profit redistribution among group-affiliated firms takes place efficiently i.e. resources are transferred to more profitable firms, or inefficiently i.e. deserving group firms are starved of new investments while less deserving group firms are subsidized. In the former case, significant positive

differences in capital expenditures between high and low performing firms should exist, whereas in the latter case no such difference should be observed. The efficiency or inefficiency of the redistribution process ultimately plays a vital role in determining the over or under performance of group-affiliated firms.

We analyze these issues using a large sample of group-affiliated and independent Indian firms. Indian business groups present an interesting staging ground for empirical analysis due to various reasons. Business groups are well defined in India. Each firm is typically a member of only one corporate group, and there are very few mergers between firms belonging to different groups. In many other countries, on the other hand, the classification of firms into groups is not clear-cut. Another appealing aspect is that there is a prevalence of a large number of both group-affiliated and unaffiliated listed firms in India. This feature enables us to perform a statistically reliable comparison between these two categories of firms. It is in contrast to many other countries where a substantial proportion of listed firms are affiliated with large business groups only. Finally, with the country in the second decade of an ongoing liberalization process, many of the erstwhile policies which tended to favor group-affiliated firms have been progressively dismantled. This necessitates an up-to-date analysis of these two competing organizational structures (group-affiliated firms and stand-alone firms).

Resource transfers within the internal capital market of business groups is comparable to those of conglomerates which has received attention in recent literature (Billet and Mauer, 2003). Yet, there exist some important differences between these two organizational forms. A conglomerate firm typically owns several divisions, while a business group is a collection of legally independent firms with distinct

shareholdings. Firms usually decide whether to extend operations into multiple industries whereas firms cannot decide whether to join a business group or even leave a business group. As mentioned by Lins and Servaes (2002), a firm's group-affiliation is basically fixed as it does not change over time. Finally, empirical evaluation of the performance of separate (non-traded) divisions of conglomerate firms requires estimation of *imputed* values. This *imputed* valuation approach has been subject to criticism owing to sample selection bias. On the other hand, an investigation of performance of firms affiliated to a business group does not require calculation of *imputed* values. Group-affiliated firms are separate entities, many of which are also quoted on a stock exchange. The financial information pertaining to these firms is also audited and disclosed regularly. This yields a potentially rich source of financial data that can be usefully employed to determine performance of these individual firms in a relatively unbiased manner.

The results of this study can be summarized as follows. First, we observe that group-affiliated firms significantly under-perform independent firms. The result is robust to alternative performance measures and differences in group size. The extent of underperformance is also economically significant. Our results show that group-affiliated firms experience a decline in return on assets (ROA) of 3 - 5% (in a sample where the mean ROA is almost 14%) and a reduction in the average value of Q of 17 - 20% (in a sample where the mean Q is 1.25). Second, we document the existence of profit redistribution among group-affiliated firms. We find that group firms exhibiting a higher level of performance subsequently undergo a lower level of performance, and vice versa. The phenomenon of profit redistribution persists even after controlling for the presence of unlisted firms in the group. Third, we show that the extent of profit redistribution is influenced by the degree of control exercised by the controlling

shareholders as well as the size of the business group. Higher levels of controlling shareholder ownership and larger group size result in greater profit redistribution. Fourth, we document inefficient profit redistribution occurring among group-affiliated firms. We analyze capital expenditures of firms and observe that resources are transferred from more deserving firms to less deserving firms. Our evidence on inefficient cross-subsidization among group firms offers an explanation for the earlier observed ‘business group discount’. This result remains robust to alternative explanations of underperformance of group-affiliated firms like diversification and resource transfers to unlisted firms.

The remainder of the paper is organized in the following manner. The next section presents a brief discussion of business groups and, in particular, those in India. Subsequently, we develop the hypotheses and illustrate the methodology and the data used in the study. We then present the results of our study and provide some concluding remarks.

2. Business groups

Business or corporate groups are a collection of legally independent firms with some commonality of ownership and management by family members. The family members who control a business group can do so through any or a combination of the following devices: dual-class shares, pyramids and cross-shareholdings.¹ These three mechanisms usually enable controlling shareholders to maintain a complete lock on

¹ Non-equity sources of exercising control such as interlocking directorates are also employed by some groups.

the control of a company while holding less than a majority of the cash flow rights associated with its equity.²

Business groups are characterized by diverse features. Khanna (2000) and Khanna and Rivkin (2001) provide a detailed exposition of these features prevalent in different countries. Strachan (1976) points out that although some features like family ties, geographical ties and interlocking directorates tend to be common among business groups, the key characteristics that distinguish a full fledged business group from other types of organizations are diversity of affiliated firms, coalition of individuals and families, and binding relationship. Leff (1978) suggests that members of business groups are linked by interpersonal trust that is formed on the basis of a similar personal, ethnic or communal background.

Business groups in India used to depict caste and provincial origins. Most of these traditional groups come from the trading communities (e.g. *banias*) and their initial activities can be traced back to certain parts of the country, although, in more recent times some of the larger groups have assumed a pan-Indian operational character. Groups increased the number of companies under their fold when assets belonging to the erstwhile British companies were acquired. Traditionally, the management of most of these groups was via the managing agency system. Under this system, each of the participating firms signs a management contract with a managing agency which is owned by the group itself. Several of the largest business groups in India like the *Tatas* and the *Birlas* were initially run by managing agencies owned by them. However, this system of managing groups has only historical relevance as the

² However, the degree and tightness of control exerted among these three mechanisms differ, and are modeled in Bebchuk, Kraakman and Triantis (2000). Pyramids for instance, regardless of whether they are coupled with dual-class shares, result in voting rights being concentrated in the hands of a single company or shareholder, while with cross-shareholdings, the voting rights are distributed over the entire group.

managing agency system was abolished in 1969 as a consequence of amendments in the statute governing corporations in India. In more recent times, control over group firms is exercised through inter-corporate equity investments, holding companies and interlocking directorates.

The identification of business group firms in India can be done with a high degree of accuracy because firms publicly disclose their affiliation to a particular group. The information is revealed in annual reports and/or filings with regulatory authorities. Like many other countries, business group membership in India is also exogenous. Firms are not free to join a particular group. Despite the institution of a takeover code in the 1990s that facilitates mergers and acquisitions, the practice of group firms interchanging group affiliations is relatively uncommon. Another remarkable feature is that of diversity of Indian business groups. The largest groups are active in a wide variety of sectors, ranging from automobile production to educational publishing. They cover vast tracts of the industrial sector and contribute to a significant chunk of the country's industrial output. On the other hand, the bulk of the business groups can be categorized as small and medium sized, with the scale and scope of their activities being considerably modest. Whereas many prior studies confine the analysis to the few largest business groups (like big-6 *Keiretsus* in Japan, top-30 *Chaebols* in Korea), we examine all business groups. A final important feature of Indian business groups is that they are not centered on a financial intermediary. Unlike Japanese *Keiretsu* firms, banks are not both creditors and major shareholders of Indian group firms.

3. Hypotheses

3.1. Performance of business groups

Similar to conglomerates, business groups are associated with benefits and costs which predominantly accrue as a consequence of the operation of internal capital market. The benefits emanate from the bright side of the operations of the internal capital market where groups can help firms that have difficulties in obtaining financing from the external capital market (Gertner, Scharfstein and Stein, 1994; Stein, 1997; Claessens, Fan and Lang, 2002). Groups can allocate resources efficiently to more deserving firms by transferring funds away from slow growing, cash generating firms to those that are expanding rapidly but need new funds. Business groups also provide co-insurance benefits derived from increased debt capacity and reduction of bankruptcy costs. Prowse (1992) argues that group-affiliated firms help other firms that suffer from adverse economic conditions in order to ensure group's long-term survival. Khanna and Palepu (2000a) argue that business groups in emerging countries generate added value by imitating beneficial functions of several institutions that are prevalent in many advanced countries. Groups can also reduce informational asymmetry problems and can raise funds from the external capital market relatively more easily and at a lower cost than independent firms. Gramlich et al. (2004) document that business groups enable high tax-rate member firms to shift income to affiliates with relatively low tax-rates. Finally, group-affiliated firms can benefit from increased economies of scale, operating synergies and market power.

Other studies, on the other hand, argue that there are relatively more costs than benefits associated with business groups. Group-affiliated firms suffer from the

consequences of the dark side of the internal capital market (Shin and Stulz, 1998; Scharfstein and Stein, 2000; and Rajan et al., 2000). A significant portion of costs also comes from increased agency problems and conflicts of interest leading to expropriation of minority shareholders by controlling shareholders of business groups (Claessens, Djankov and Lang, 2000; Joh, 2003). In addition, Johnson, La Porta, Lopez-de-Silanes and Shleifer (2000) argue that controlling shareholders in a business group can adopt certain practices of tunneling corporate resources for their own benefits which are detrimental to the minority shareholders as well as the value of the individual firm. Business group firms may also engage in over-investments of free cash flows in other firms (Shin and Park, 1999; Ferris, Kim and Kitsabunnarat, 2003).

The empirical evidence examining the impact of these benefits and costs on the performance of group-affiliated firms is also mixed. Chang and Hong (2000) find that *Chaebol*-affiliated firms in Korea show higher performance than unaffiliated firms. Khanna and Rivkin (2001) in a cross-country study of fourteen emerging markets find that in some economies group affiliation is positively associated with performance while for others the effect is either negative or insignificant. Lins and Servaes (2002), on the other hand, in a cross-country study of seven emerging economies, document lower performance for firms associated with industrial groups. Campbell and Keys (2002), Ferris et al. (2003) and Joh (2003) find that South Korean *Chaebols* exhibit lower performance compared to unaffiliated firms. While Khanna and Palepu (2000a) find that the largest and the most diversified Indian business groups exert a significant positive influence on firm performance, they find a

significant negative influence on firm performance for firms belonging to small and intermediate sized groups.³

Overall, both theoretical arguments and empirical evidence suggest that the consequence of the associated benefits and costs of group affiliation on firm performance is difficult to predict *a priori*. Therefore, we propose the following hypothesis:

H1: The benefits (costs) associated with group affiliation outweigh the costs (benefits), and consequently, group-affiliated firms over (under) perform unaffiliated firms.

3.2. Profit redistribution in business groups

The presence of an internal capital market in a business group can lead to resources of one firm being transferred to fund operations of another affiliated firm. Redistribution takes place because there is a real need for new investments for firms that do not have any other means to get adequate resources. Redistribution can also occur because of the benefits accruing to controlling shareholders (and family members) and the principle of solidarity within the business group to keep struggling firms afloat. Another reason for profit redistribution is put forward by Gramlich et al. (2004). They argue that business groups will engage in income-shifting activities among affiliated firms in order to benefit from reduced combined tax liabilities. Fisman and Khanna (2004) emphasize a related argument for redistribution. They

³ These small and intermediate sized group firms actually constitute the bulk of their sample (as much as ninety percent of Indian group firms).

argue that business groups in some developing countries try to benefit from transferring profits to its affiliates located in underdeveloped regions that receive preferential incentives and tax shields from the government. Cestone and Fumagalli (2005) propose that business groups can channel funds to an affiliated firm in order to help it compete more aggressively than other rival firms in the industry. Redistribution is thus considered as a necessary response to changes taking place in a group-affiliated firm's competitive environment.

These arguments clearly suggest that business groups espouse profit redistribution by transferring resources from highly profitable firms to firms with lower profitability. Although no one casts doubt on resource transfers regularly taking place within a business group, there exists no hard evidence of this phenomenon. Johnson et al. (2000) suggest that transfers made by groups encompass assets being moved out of firms, profits being siphoned off firms and troubled firms being propped up. Bertrand et al. (2002) also note that cash resources can be transferred across firms in many ways: firms can give each other high (or low) interest rate loans, manipulate transfer prices, sell assets to each other at above or below market prices, etc. Any empirical analysis to quantify redistribution activities is practically an impossible task because firms carry out these activities in a subtle manner without making any public announcement or disclosing these in annual reports.

An indirect way to detect these transfers is to use the methodology employed by Lincoln, Gerlach and Ahmadjian (1996) and Gedajlovic and Shapiro (2002). They argue that the outcome of the redistribution process is such that highly profitable firms will subsequently experience lower profitability while firms with low

profitability will subsequently benefit. Accordingly, we propose the following hypothesis:

H2: For group-affiliated firms, profit redistribution entails that firms with higher (lower) prior profitability will suffer (gain).

Larger corporate groups are usually involved in a wide range of industries. The differences in individual firm sizes and the wide dispersion of industries in which they operate could result in a greater variance in inter-firm profitability of larger business groups. On the other hand, business groups emphasize profit stability because it ensures their long-term survival (Nakatani, 1984; Prowse, 1992; Ferris et al., 2003). It is, therefore, more likely that larger business groups engage in more profit redistribution in order to minimize or smoothen differences in individual firm profitability. Larger groups may also consist of more unlisted firms which depend on internal group resources to meet their capital requirements. This in turn leads to a higher probability that capital will be redistributed to a greater extent among firms in larger business groups.

Larger business groups could also include firms with more nebulous ties to the controlling family. Since it is reasonable to expect that the degree of profit redistribution is influenced by the extent of family control, it would be prudent to account for this fact. It is widely known that family members in a business group exercise more control by means of their shareholdings in other group firms. Therefore, we expect the profit redistribution effect to be stronger for firms affiliated to higher levels of corporate control.

Consequently, our third hypothesis is the following:

H3: For group-affiliated firms, the degree of profit redistribution is influenced by the size of the group and the extent of corporate control of these firms.

3.3. (In)efficiency of profit redistribution

So far, we focused on profit redistribution in business groups and linked it with some important characteristics of business groups like group-size and corporate control. In this section, we examine whether profit redistribution is efficient i.e. resources are shifted to more profitable firms, or inefficient i.e. resources are diverted to less profitable firms. When the resource allocation mechanism works efficiently among group-affiliated firms, groups transfer resources from firms with poor investment opportunities to firms with good investment opportunities. This will imply that there should be a significant positive difference in capital expenditures between high and low performing firms. On the other hand, inefficiencies will be apparent if deserving group firms are not receiving their due as far as investments are concerned, while less deserving group firms are subsidized. Therefore, we posit the following hypothesis:

H4: For group-affiliated firms, efficient profit redistribution entails that capital expenditures of high performing firms will be higher than low performing firms.

4. Methodology

In order to test if group-affiliated firms are more or less profitable than unaffiliated firms, we estimate the following specification using ordinary least squares regression:

$$\text{Performance}_{i,t} = \alpha + \xi \text{Group} + \delta X_{i,t} + \varepsilon_{i,t} \quad (1)$$

The dependent variable is a measure of performance of firm i in period t . Following prior literature, we consider both accounting and stock market-based performance measures. The first measure is return on assets (ROA) defined as the earnings before interest, taxes and depreciation over the book value of total assets. The second measure is Q defined as the market value of equity plus the book value of total debt over book value of total assets.

The main explanatory variable of interest is *Group* which is a dummy variable that takes on the value of one when a firm is affiliated with a group, and zero otherwise. The estimated coefficient ξ measures the impact of group affiliation. If group affiliation causes firm performance to decline, then ξ should be negative. Khanna and Palepu (2000a) argue that the overall performance of a business group is influenced by the size of the group. Therefore, in a separate specification, we analyze the effect of group size by dividing groups into three size categories: *Group1* (groups with one or two listed firms), *Group2* (groups with three or four listed firms) and *Group3* (groups with five or more listed firms).⁴

⁴ We also perform several robustness checks using alternative definitions of group-size: dummies representing groups with up to four listed firms versus groups with five or more listed firms; dummies representing total number of both listed and unlisted firms; and logarithm of total number of listed and unlisted firms in the group.

We include a vector of additional control variables ($X_{i,t}$) that influence firm performance. This vector comprises ownership, firm size, firm age, leverage and industry affiliation. Several ownership categories are used in various parts of our empirical analysis to control for the effect of ownership on performance. We define these variables by calculating the percentage of total outstanding common shares held by different categories of investors. Three important variables are first used to represent the percentage of a company's outstanding common shares held by financial institutions (FINI), non-financial corporations (CORP), and directors and their relatives (DIR). Earlier studies (e.g. Chibber and Majumdar, 1999) have shown the importance of distinguishing between domestic and foreign shareholders in an emerging market context. The performance impact of these shareholders can be different at a disaggregated level. Therefore, we construct separate ownership variables by decomposing aggregate ownership into its major components: shareholdings by foreign non-financial corporations (FORC), shareholdings by foreign financial institutions (FORI), shareholdings by domestic non-financial corporations (DOMC) and shareholdings by domestic financial institutions (DOMI).

As control over group firms by the family is exercised primarily through other group firms which is reflected through shareholdings by domestic corporations (DOMC), we examine this variable more closely by decomposing it into three separate variables: domestic corporate shareholding of less than 26% (DOMC1); domestic corporate shareholding of 26% and above but less than 51% (DOMC2); and domestic corporate shareholding of 51% and above (DOMC3).⁵ This classification

⁵ The rationale for choosing these ownership thresholds is that they constitute critical levels as far as control over a firm is exercised. A shareholding of 26% enables one to block a *special* resolution that is required to effect crucial decisions relating to changing the line of business, reduction in share capital, mergers, etc. This effectively means that a shareholder wishing to radically change the nature of the firm has to garner the support of 75% of the shareholding of the firm for the proposal to be approved.

enables us to determine the performance impact on group firms due to escalating thresholds of group control over its firms.

The second test performed in this study is that of the profit redistribution effect (*Hypothesis 2*). A group-affiliated firm generating higher cash flows may be required to transfer these resources to another affiliated firm that lacks adequate cash flows. The consequence of this transfer will be that a highly profitable firm will subsequently exhibit a reduction in its profit while a low profitability group firm will subsequently benefit. Lincoln et al. (1996) argue that in order to ascertain a significant effect on profitability, the length of the time period in which performance is measured should be long enough for a transfer to occur and its economic impact to become apparent. For example, if redistribution involves channeling funds for new investments in a firm, then it will require a considerable amount of time before the impact of it on the operating performance of that firm is discernible. Accordingly, we consider a time period of one year to be reasonably long enough in order to detect any effect of profit redistribution.⁶

The profit redistribution process is facilitated by the extent of control exercised by the group's controlling shareholders. We use domestic corporate shareholdings as a proxy for the extent of control because it primarily represents inter-corporate shareholdings of the group. A phenomenon like profit redistribution is not expected to occur among independent firms. Therefore, we estimate the following regression specification for group-affiliated firms only:

There exists an unambiguous devolution of property rights at a shareholding level of 51% and the ability to pass *ordinary* resolutions. We also perform a robustness check using an alternative classification involving two domestic corporate thresholds: DOMC less than 51%, and DOMC of 51% and above.

⁶ One can argue that the effect of profit redistribution can also be examined using semi-annual data. Unfortunately, data limitations prevents us from doing such an analysis.

$$\begin{aligned} \text{Performance}_{i,t} = & \alpha + \lambda \text{Performance}_{i,t-1} + \phi \text{Control}_{i,t} * \text{Performance}_{i,t-1} \\ & + \delta X_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (2)$$

The profit redistribution effect is empirically captured through the coefficient ϕ of the interaction term: $\text{Control}_{i,t} * \text{Performance}_{i,t-1}$. A negative value of ϕ implies that higher performance of a group-affiliated firm in one period (which is used by the controlling shareholders to reallocate resources to some other affiliated firms that lack these resources) is followed by lower performance in the subsequent period. *Specification (2)* includes several control variables to account for differences in corporate ownership, firm size, firm age, leverage, diversification, number of unlisted firms and industry affiliations.

Probing deeper into the phenomenon of profit redistribution, a question that is of considerable interest is whether redistribution among group firms is greater with larger group size and higher levels of corporate control (*Hypothesis 3*). To investigate this, we employ the following specification:

$$\begin{aligned} \text{Performance}_{i,t} = & \alpha + \sum_k \xi \text{Group Size} + \lambda \text{Performance}_{i,t-1} \\ & + \sum_l \phi \text{Control}_{i,t} * \text{Performance}_{i,t-1} \\ & + \sum_k \sum_l \phi \text{Control}_{i,t} * \text{Performance}_{i,t-1} * \text{Group Size} \\ & + \delta X_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (3)$$

where the summation subscripts k and l denote three group size dummies and control thresholds, respectively. The explanatory variable *Control* includes three different levels of domestic non-financial corporate shareholdings. Similarly, the variable *Group Size* includes three group size categories. These variables form the basis for a

set of interactions terms that are employed to determine the joint effect of the degree of corporate control and the extent of group size on profit redistribution. In order to test *Hypothesis 3*, we focus on the coefficient of the interaction term representing the highest level of corporate control and the largest group size.

The fourth hypothesis is concerned with the efficient allocation of profits among firms affiliated to a group. To examine this, we divide both group and non-group firms on the basis of Q and compare the levels of capital expenditures of these two categories of firms. If profit redistribution takes place efficiently, then high Q group firms are more likely to receive additional funds. This will be reflected in capital expenditures of high Q firms being significantly higher than that of low Q firms. On the other hand, in case of inefficient profit redistribution, we would expect either no such difference or high Q group firms receiving significantly lower capital expenditures in comparison to low Q group firms.

5. Data

The data come from a database called “Capitaline 2000” which contains balance sheet, income statement and ownership information for a large number of Indian listed companies. For this study, we analyze firms listed on the Bombay Stock Exchange, which is the oldest, and one of the two main stock exchanges operating in India. Prior published studies related to India also use the stocks listed on this exchange for their analysis. We eliminate financial, utility, real estate, trading and government firms (defined as firm with a total government holding of 50 percent and more) from our sample. We also drop those firms that are subsidiaries of foreign firms (defined as firm with a total foreign shareholding of fifty percent and above). This

precludes any ambiguity in identifying Indian firms and enhances the validity of our analysis of group-affiliated firms.

The database clearly identifies firms that are affiliated to a group. The identification of business groups in India is relatively easy and non-controversial because firms are usually members of only one group. Whether a firm is affiliated to a group or not is determined using a variety of sources like public announcements made by individual corporations and groups, and regulatory filings.⁷ The data we analyze belong to the fiscal years 1998-2000. The period is relatively recent compared to earlier published studies on India. The final sample comprises a total of 844 companies of which 476 (56%) are non-group firms and 368 (44%) are group firms.

Table 1 provides summary statistics on the firms in our sample. All variables used in this study are defined in the *Appendix*. To facilitate comparison, we present the information on non-group and group firms separately. We use both accounting and stock market-based performance measures, the descriptive statistics of which are presented in *Table 1*. The mean return on assets (ROA) of non-group (group) firms is 13.98% (13.42%) while the median ROA of non-group (group) firms is 14.07% (14.00%).⁸ These differences are negligible and statistically insignificant. On the other hand, the mean Q of non-group firms (1.35) is found to be significantly higher than that of the group firms (1.11). Khanna and Palepu (2000a) also find insignificant differences in ROA but significant differences in Q between non-group and group firms. We also find that the variability of profits as measured by the standard

⁷ We also perform an independent check on group affiliation of 100 large Indian corporations and come to the conclusion that the classification made by the database is accurate.

⁸ Outliers usually distort the analysis of financial statement data. Instead of eliminating them from the sample (which leads to a reduction in the number of observations), we winsorize the performance measures at their 1st and 99th percentile values.

deviation of ROA and Q is higher among non-group firms than group firms. An F-test for the equality of variances indicates that these differences are also statistically significant.

Table 1 also presents information on the ownership structure of non-group and group firms. We observe that non-group firms have lower percentages of shareholdings by financial institutions (FINI) and non-financial corporations (CORP). These two categories of investors hold, on average, 6.21% and 24.35% of shares of non-group firms, respectively, compared to 12.28% and 41.10%, respectively for group firms. The differences in both mean and median values with regard to non-group firms are statistically significant. A decomposition of these aggregate ownerships reveals that ownership by domestic financial institutions (DOMI) as well as domestic non-financial corporations (DOMC) is significantly higher in group-affiliated firms. The average ownership by domestic financial institutions and domestic corporations in non-group firms is 5.42% and 21.86% respectively, compared to 10.37% and 38.10% respectively for group firms.

We also find that the fraction of shares held by directors and their relatives (DIR) is very low for group firms. For the non-group sample, the mean (median) director share holdings are 23.42% (20.79%) while, for group-affiliated firms, the corresponding values are as low as 7.87% (1.54%). This difference is due to the fact that group firms are substantially larger than independent firms. It is important to note that the low director shareholdings in group-affiliated firms do not reflect the actual degree of control exercised by the controlling family. Ownership by domestic corporations plays by far the most important role in this regard.

Summary information on other control variables is also presented in *Table 1*. We observe that there are statistically significant differences in these variables between non-group and group firms. The average group-affiliated firm is much larger as can be observed from higher total sales. The median group firm is about four times larger than the median unaffiliated firm. Group firms are also much older and have substantially higher amount of debt. The median group firm is 24 years old compared to 15 years for the non-group firm. Similarly, the debt-equity ratio of the median group firm is 5.59 compared to 2.17 for the median independent firm. Finally, it should also be noted that the sample of firms represents many different industries. The empirical analysis that follows controls for all these factors.

6. Empirical results

In this section, we present and discuss the results obtained from different regressions. To determine whether group-affiliated firms over or under-perform, we estimate *specification (1)* and present the findings in *Table 2*. *Panel A* reports regression results for performance as measured by ROA and *Panel B* presents those for Q. Since many factors other than group affiliation can influence firm performance, all of our regression models include several control variables. We use the shareholdings by different categories of owners to control for the ownership structure effect, the log of the number of years since establishment to control for the age of the firm, the log of total sales to control for the firm size effect, and the ratio of total debt to total equity to control for the leverage effect. We also include industry dummy variables to control for industry-specific influences on corporate performance. In total, we have eight regressions that have different configurations of group and ownership variables.

The results in *Panel A* show that the performance of group-affiliated firms is lower than that of unaffiliated firms. We observe that in each regression, the coefficient of the group dummy variable is negative and statistically significant. It indicates that after controlling for firm characteristics like ownership, size, leverage etc., group affiliation is negatively related with corporate performance. In regression *Models (1) and (2)*, the estimated coefficients of the group dummy variable suggest that group-affiliated firms have about 3 – 4 percent lower profitability than independent firms.

Khanna and Palepu (2000a) report earlier that the performance of group-affiliated firms differs with respect to the size of the group. Therefore, as an additional check, we examine separately the profitability of three categories of groups: small groups, medium-sized groups and large groups. The results of regression *Models (3) and (4)* show that the coefficient of each category of group variable is negative and statistically significant. The discount varies between 3 to 5 percent depending on the size of the group and the regression model. Thus, the empirical finding of a significant underperformance of group firms is pervasive regardless of group size differences.

To assess whether the negative group affiliation/performance relationship is also consistent with the stock market-based measure of performance, we perform additional regressions in which the dependent variable is Q. The regressions results are presented in *Panel B*. Group-affiliated firms have a significantly lower Q, as can be observed from regression *Models (5) and (6)*. Similar to the ROA models presented earlier, we estimate *Models (7) and (8)* wherein groups are categorized into different size classes. The results also indicate an underperformance of group-affiliated firms. The magnitude of decline in Q varies between 17 to 20 percent (in a

sample in which the average Q is 1.24) depending on the model specification. These results confirm our previous finding from *Panel A* that firms affiliated to business groups exhibit lower performance, and thus, provide strong support for *Hypothesis 1*. This finding is also invariant to the exclusion of one or the other control variables.

Apart from examining the performance of group-affiliated firms, the main aim of this study is to examine profit redistribution and its impact on group firms. In order to do so, we analyze the sample of group-affiliated firms separately. The results of regressions estimated using *specification (2)* are presented in *Table 3*. Since profit redistribution is facilitated by the extent of control exercised by business group's controlling shareholders, we present the regression results with / without various ownership variables. As before, these regressions also control for other firm characteristics and industry effects. We also control for two additional factors that could be major determinants of the performance of group firms. First, Lins and Servaes (2002) report that diversification by group-affiliated firms has a negative impact on performance. Consequently, to control for the effect of diversification among group-affiliated firms, we add a diversification dummy as an additional explanatory variable.⁹ Second, one can argue that controlling shareholders of listed group firms might also favor profit redistribution to unlisted firms belonging to the same group. This could systematically reduce profitability of listed group firms. The problem could be more severe as the number of unlisted firms within the group increases. We therefore add a new variable to capture this effect. We employ two constructs for this variable: a dummy representing the presence of unlisted firms in

⁹ A firm is considered as diversified if its total sales are spread over two or more two-digit segments and less than 90% of its sales accounts for one segment.

the group and the logarithm of the number of unlisted firms affiliated to a group. Since the findings are not different, we report results only for the second variable.

We obtain the following empirical results. For group-affiliated firms, we observe in *Table 3* that the estimated coefficient of the interaction variable DOMC * ROA(-1) is negative and highly statistically significant. The finding indicates that a group-affiliated firm with higher (lower) profit in one year experiences a profit reduction (improvement) in the following year.¹⁰ The evidence is consistent with the fact that profit redistribution occurs among group-affiliated firms. It also shows that the channel facilitating profit redistribution is control exercised by domestic corporations. The evidence provided here is consistent with *Hypothesis 2*.¹¹

The estimated relationship between prior period profitability, domestic corporate ownership and current period profitability is depicted in *Figure 1*. The figure portrays, using parameter estimates from *Model (1)*, the profit redistribution effect at various levels of domestic corporate ownership. It clearly shows that at low levels of control the current period profitability is not materially different from that of the prior period. However, when the level of control increases, a significant improvement in profitability takes place in case of firms with low prior profitability while a significant deterioration occurs for firms with high prior profitability.¹²

¹⁰ Although our hypothesis is solely concerned with group-affiliated firms, one can argue that the observed reversion in profits can also take place among independent firms. To examine this possibility, we estimate regression *specification (2)* for the non-group sample, and find that the coefficient of the interaction variable is statistically insignificant.

¹¹ We also obtain similar results when we use Q as an alternative performance measure. This suggests that the effect of redistribution can also be captured by stock market-based variables. For reasons of brevity, we do not present these results.

¹² In order to illustrate the economic importance of this effect further, we compute the change in predicted ROA at high and low levels of prior period ROA using the estimated coefficients at the mean

Thus far, the results have shown that group-affiliated firms are characterized by the phenomenon of profit redistribution. In order to provide further evidence on the degree of profit redistribution (*Hypothesis 3*), we estimate *specification (3)* for all group firms. We construct three variables representing different group sizes to examine the influence of group size. We also decompose aggregate domestic corporate ownership into three variables with various thresholds to examine the influence of different levels of control. Our key interest now lies on the variable representing the interaction between domestic corporate ownership thresholds, lagged profitability and various categories of group size. The results are presented in *Table 4*.

We observe that when we split the aggregate domestic corporate ownership variables into three separate thresholds (*Model (1)*), the profit redistribution effect is still prevalent in all three categories of group firms. More interestingly, we now observe from *Models (2) and (3)* that the coefficient of the interaction variable associated with the largest domestic ownership and the largest group size (DOMC3 * ROA (-1) * Group3) is negative and statistically significant. On the other hand, the two interaction terms representing small and intermediate group sizes are not statistical significant. It implies that firms that are affiliated with the largest business groups and that have the highest domestic corporate control experience severe profit redistribution. Overall, our finding is consistent with the *Hypothesis 3*.¹³

value of DOMC. For example, we find that the predicted ROA is lower (16%) when prior period ROA was higher (30%), while it is higher (-9%) when prior ROA was lower (-25%).

¹³ The economic significance of this redistribution effect can be estimated by adding the corresponding regression coefficients while keeping the three DOMC variables at their respective mean levels. A graphical plot (not shown) depicts that the impact on the fitted values of ROA is quite striking. The redistribution effect also persists when we use alternative definitions of group size as discussed in footnote 4.

Next, we examine the efficiency of profit redistribution among group-affiliated firms (*Hypothesis 4*). If business groups allocate resources efficiently, high Q group firms should receive more funds, while low Q group-affiliated firms should not be subsidized. We, therefore, expect a significant positive difference in capital expenditures between these two categories of group-affiliated firms. Independent firms are not subject to any distortion in internal resource transfers, and consequently, rely more on the external capital market. This should equivalently be reflected in a significant positive difference in capital expenditures between high Q and low Q non-group firms.

Both independent and group-affiliated firms are classified into two categories based on their median Q values.¹⁴ From the results shown in *Table 5*, we find a significant difference in capital expenditures between the two non-group firm categories. The mean (median) capital expenditures for high Q non-group firms are 10% (5.2%) which are significantly higher than those of corresponding low Q firms. On the other hand, the mean (median) capital expenditures of high Q group-affiliated firms are 8.5% (4.7%) which are not significantly different from low Q group-affiliated firms. The lack of a statistically significant difference in capital expenditures between high Q and low Q group firms indicates that large inefficiencies persist in the resource allocation of group-affiliated firms. The results do not provide support for *Hypothesis 4*. Since resource allocation of such nature represents a transfer of wealth from deserving firms to undeserving firms, it offers an explanation to the previously documented underperformance of group-affiliated firms.

¹⁴ We also split the sample using $Q > 1$ as the cut-off value and find qualitatively similar results.

7. Conclusions

The study contributes to the literature by documenting profit redistribution as an explanation for the performance difference of firms affiliated to business groups. We find that group-affiliated firms in India under-perform relative to independent firms: return on assets is 3 to 5% lower and Q is about 17 to 20% lower. This result is consistent with Campbell and Keys (2002), Ferris et al. (2003) and Joh (2003) who investigate the performance of firms affiliated to South Korean business groups, and Lins and Servaes (2002) who examine groups from several emerging countries.

Apart from this general finding, we provide empirical evidence on resource transfers among group-affiliated firms. Our analysis shows the presence of a significant profit redistribution effect within business groups: group-affiliated firms with higher performance subsequently experience a significant decline in performance, and vice versa. We then seek to determine whether the profit redistribution effect is related to the extent of control exercised by the controlling shareholders and the size of the business group. More family control and larger number of firms are expected to induce more resource transfers. We observe that firms that have high levels of control and that belong to the largest business groups are indeed characterized by severe profit redistribution.

As domestic corporations controlled by family members play a significant role in managing firms affiliated with business groups, the driving force behind profit redistribution is likely to be solidarity between these shareholders. An interesting question is whether this solidarity interferes with sound economic decision-making and results in a sub-optimal allocation of resources. The evidence presented in this study reveals that the process of redistribution among business group firms is

associated with resources being transferred from higher performing firms to lower performing firms. Our finding shows that the utilization of resources by less deserving firms represents an important form of inefficiency among group-affiliated firms. We believe that this inefficient profit redistribution is a key determinant of the underperformance of group-affiliated firms, and thus provides a major explanation for the observed 'business group discount'.

Appendix

Definition of variables

ROA: Return on assets defined as the earnings before interest, taxes and depreciation over the book value of total assets

Q: Market value of equity plus the book value of total debt over book value of total assets

Group: Dummy measure of group affiliation which takes a value of one for a firm affiliated with a group and zero otherwise

Group1: Dummy measure of group affiliation for groups with two or less listed firms

Group2: Dummy measure of group affiliation for groups with three and four listed firms

Group3: Dummy measure of group affiliation for groups with five or more listed firms

FINI: Shareholding by foreign and domestic financial institutions

CORP: Shareholding by foreign and domestic corporations

FORI: Shareholding by foreign financial institutions

FORC: Shareholding by foreign non-financial corporations

DOMI: Shareholding by domestic financial institutions

DOMC: Shareholding by domestic non-financial corporations

DOMC1: Domestic corporate shareholding of less than 26%

DOMC2: Domestic corporate shareholding of 26% and above but less than 51%

DOMC3: Domestic corporate shareholding of 51% and above

DIR: Shareholding by directors and their relatives

Age: Years since the incorporation of the firm

Sales: Total sales of the firm

Leverage: Defined as the ratio of total debt to equity capital

Capex: Capital expenditures defined as the ratio of the difference between the purchase and sale of fixed assets over lagged value of total assets

DIVDUM: Diversification dummy which takes a value of one if a firm's sales are spread over two segments and less than 90% of its sales are in a single segment, and zero otherwise

Unlisted: The number of unlisted firms affiliated to a group firm

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Table 1
Descriptive statistics

This table reports the summary statistics of the principal variables used in the study. The sample consists of 476 non-group and 368 group firms listed on the Bombay Stock Exchange. All variables are calculated for the fiscal year 1999-2000, and are defined in the Appendix. The asterisks *** and ** denote that the mean and the median values between non-group and group firms are statistically significant at 1% and 5% levels, respectively.

<i>Variables</i>	Non-Group			Group		
	<i>Mean</i>	<i>Median</i>	<i>Std. Dev</i>	<i>Mean</i>	<i>Median.</i>	<i>Std. Dev.</i>
<i>ROA (%)</i>	13.98	14.07	12.80	13.42	14.00	10.82
<i>Q ratio</i>	1.35**	0.80	1.74	1.11	0.79	1.19
<i>FINI (%)</i>	6.21***	1.67***	9.42	12.28	9.63	11.93
<i>CORP (%)</i>	24.35***	18.74***	20.65	41.10	41.98	21.20
<i>DIR (%)</i>	23.42***	20.79***	19.59	7.87	1.54	13.20
<i>DOMC (%)</i>	21.86***	16.17***	19.61	38.10	39.13	20.02
<i>DOMI (%)</i>	5.42***	1.24***	8.45	10.37	7.01	10.48
<i>Sales (Mil. Rupees)</i>	1,323***	409***	5,831	4,381	1,517	11,269
<i>Age (Years)</i>	20***	15***	15	29	24	20
<i>Leverage</i>	3.70***	2.17***	4.66	7.11	5.59	6.15

Table 2
Regression results on the impact of group affiliation on firm performance

This table reports the results of regression *specification (1)* in which the dependent variable is return on assets (ROA) in Panel A and Q in Panel B. The sample consists of 844 group and non-group firms. All variables are defined in the Appendix. The regression estimates are corrected for heteroskedasticity using White's heteroskedasticity consistent covariance. Statistical significance is represented by the asterisks ***, ** and * which denote significance at 1%, 5% and 10% levels, respectively.

Panel A: ROA regressions

	(1)	(2)	(3)	(4)
<i>Intercept</i>	-21.560***	-25.648***	-21.806***	-25.768***
<i>Group</i>	-3.812***	-2.946**		
<i>Group1</i>			-3.291***	-2.615***
<i>Group2</i>			-4.381**	-3.234**
<i>Group3</i>			-5.392***	-3.992***
<i>FINI</i>	-0.162***		-0.157***	
<i>CORP</i>	0.034*		0.038**	
<i>FORI</i>		0.003		-0.001
<i>FORC</i>		0.118**		0.120***
<i>DOMI</i>		-0.127***		-0.120***
<i>DOMC</i>		0.074***		
<i>DOMC1</i>				0.100
<i>DOMC2</i>				0.066**
<i>DOMC3</i>				0.082***
<i>DIR</i>		0.110***		0.106***
<i>Log Age</i>	-0.178	-0.313	-0.116	-0.269
<i>Log Sales</i>	3.883***	3.809***	3.904***	3.820***
<i>Leverage</i>	-0.504***	-0.534***	-0.514***	-0.541***
<i>Industry dummies</i>	Included	Included	Included	Included
<i>Adjusted R²</i>	0.225	0.242	0.226	0.240
<i>F-statistic</i>	9.764***	9.703***	9.183***	8.616***

Panel B: Q regressions

	(5)	(6)	(7)	(8)
<i>Intercept</i>	-0.029	-0.109	-0.030	-0.253
<i>Group</i>	-0.244**	-0.217**		
<i>Group1</i>			-0.246**	-0.248**
<i>Group2</i>			-0.260**	-0.215*
<i>Group3</i>			-0.213	-0.108
<i>FINI</i>	0.009		0.009	
<i>CORP</i>	0.005***		0.005**	
<i>FORI</i>		0.053**		0.051**
<i>FORC</i>		0.014***		0.014***
<i>DOMI</i>		0.001		-0.000
<i>DOMC</i>		0.006**		
<i>DOMC1</i>				0.016**
<i>DOMC2</i>				0.010***
<i>DOMC3</i>				0.006**
<i>DIR</i>		0.003		0.003
<i>Log Age</i>	-0.154	-0.121	-0.154	-0.131
<i>Log Sales</i>	0.086*	0.067	0.085*	0.069
<i>Leverage</i>	-0.010	-0.008	-0.010	-0.008
<i>Industry dummies</i>	Included	Included	Included	Included
<i>Adjusted R²</i>	0.338	0.353	0.336	0.353
<i>F-statistic</i>	16.376***	15.865***	15.250***	14.158***

Table 3
Regression results on profit redistribution among group-affiliated firms

This table reports the results of regression *specification (2)* in which the dependent variable is return on assets (ROA). The sample consists of 368 group-affiliated firms. All variables are defined in the Appendix. The regression estimates are corrected for heteroskedasticity and autocorrelation using Newey-West heteroskedasticity and autocorrelation consistent covariances. Statistical significance is represented by the asterisks ***, ** and * which denote significance at 1%, 5% and 10% levels, respectively.

	<i>(1)</i>	<i>(2)</i>
<i>Intercept</i>	0.657	-4.295
<i>ROA (-1)</i>	0.677***	0.651***
<i>DOMC</i>	0.066**	0.087**
<i>DOMC*ROA (-1)</i>	-0.006***	-0.006***
<i>FORI</i>		-0.034
<i>FORC</i>		0.128**
<i>DOMI</i>		-0.037
<i>DIR</i>		0.080*
<i>DIVDUM</i>	0.153	0.311
<i>Log Unlisted</i>	0.288	0.481
<i>Log Age</i>	-1.463*	-1.128
<i>Log Sales</i>	1.139***	1.407***
<i>Leverage</i>	-0.108	-0.134*
<i>Industry dummies</i>	Included	Included
<i>Adjusted R²</i>	0.422	0.433
<i>F-statistic</i>	9.927***	9.248***

Figure 1

Profit redistribution in group-affiliated firms

The figure plots the predicted return on assets (PrROA) from regression results presented in *Model (1)* of *Table 3* using coefficients of previous period's ROA (ROA (-1)), domestic corporate ownership (DOMC) and the interaction coefficient DOMC*ROA (-1). It shows how a firm's previous period profitability is related to current period profitability at various levels of corporate control.

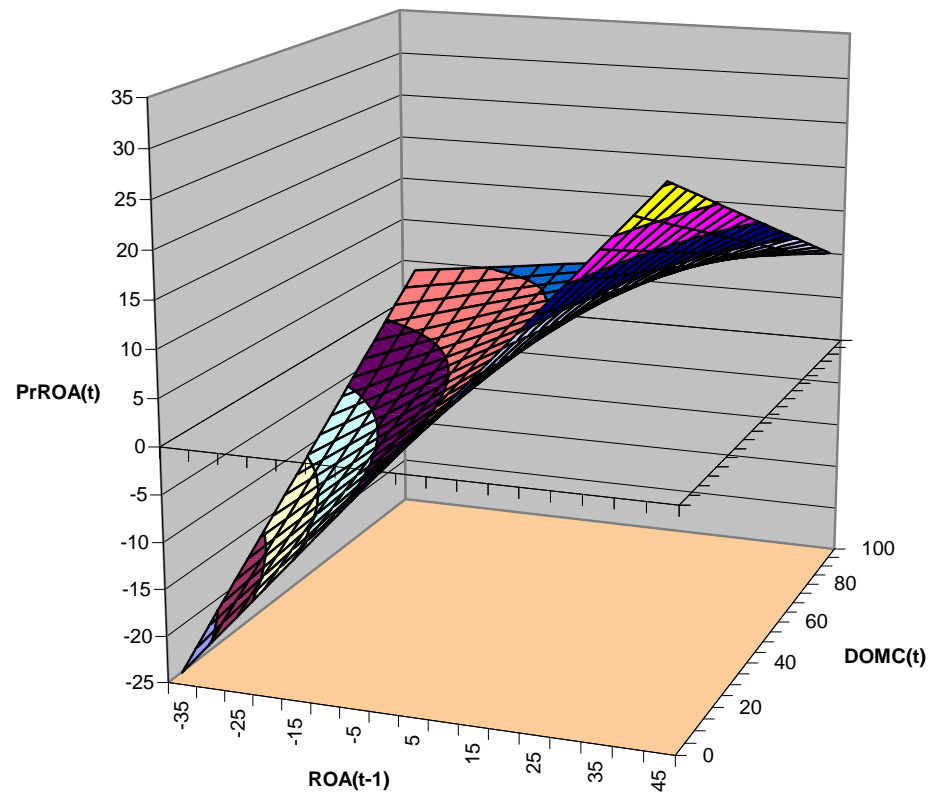


Table 4
Regression results on profit redistribution with varying group sizes and corporate controls

This table reports the results of regression *specification (3)* in which the dependent variable is return on assets (ROA). The sample consists of 368 group firms. All variables are defined in the Appendix. The regression estimates are corrected for heteroskedasticity and autocorrelation using Newey-West heteroskedasticity and autocorrelation consistent covariances. Statistical significance is represented by the asterisks ***, ** and * which denote significance at 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)
<i>Intercept</i>	-1.188	-1.413	-1.369
<i>ROA (-1)</i>	0.790***	0.501***	0.736***
<i>Group2</i>	-1.020	-1.158	-1.308
<i>Group3</i>	-4.051***	-2.189*	-3.554**
<i>DOMC1</i>	0.183	0.076	0.195*
<i>DOMC2</i>	0.049	-0.010	0.064
<i>DOMC3</i>	0.103***	0.046**	0.108***
<i>DOMC1*ROA (-1)</i>	-0.018**		-0.014
<i>DOMC2*ROA (-1)</i>	-0.009**		-0.009**
<i>DOMC3*ROA (-1)</i>	-0.009***		-0.006***
<i>DOMC1*ROA (-1)*Group1</i>		-0.002	-0.004
<i>DOMC2*ROA (-1)*Group2</i>		0.000	0.002
<i>DOMC3*ROA (-1)*Group3</i>		-0.008***	-0.005*
<i>DIVDUM</i>	0.168	0.444	0.406
<i>Log Unlisted</i>	1.629*	1.587*	1.740*
<i>Log Age</i>	-1.358*	-1.279	-1.327
<i>Log Sales</i>	1.286***	1.318***	1.260***
<i>Leverage</i>	-0.139**	-0.135*	-0.137**
<i>Industry dummies</i>	Included	Included	Included
<i>Adjusted R²</i>	0.439	0.428	0.444
<i>F-statistic</i>	8.965***	8.614***	8.506***

Table 5
Capital expenditure differences between non-group and group firms.

This table reports mean (median) Q and capital expenditures (Capex) of 424 non-group and 341 group firms classified into two categories based on their median Q values. The asterisks *** denotes that the mean and the median values between high Q and low Q firms are statistically significant at the 1% level. The t-test is used to determine the equality of means whereas the Wilcoxon/Mann-Whitney test is used to determine the equality of medians.

	<i>Non-Group</i>		<i>Group</i>	
	<i>Q</i>	<i>Capex</i>	<i>Q</i>	<i>Capex</i>
High Q firms	2.105 (1.224)	0.100 (0.052)	1.607 (1.060)	0.085 (0.047)
Low Q firms	0.579 (0.610)	0.064 (0.033)	0.628 (0.654)	0.073 (0.045)
Difference in capital expenditures		0.036*** (0.019)***		0.012 (0.002)