PEPPERDINE UNIVERSITY

The Journal of Entrepreneurial Finance

Volume 9
Issue 2 *Summer 2004*

Article 4

December 2004

Does Corporate Governance Influence Firm Value? Evidence from Indian Firms

Jayesh Kumar
Xavier Institute of Management

Does Corporate Governance Influence Firm Value? Evidence from Indian Firms

Jayesh Kumar*
Xavier Institute of Management

Introduction

This paper examines empirically the effects of ownership structure on the firm performance for a panel of Indian corporate firms, from a corporate governance perspective. We examine the effect of interactions between corporate, foreign, institutional, and directorial ownership on firm performance. Using firm level panel data framework, we show that a large fraction of cross-sectional variation, in firm performance, can be explained by unobserved firm heterogeneity.

We also provide evidence that the shareholding by institutional investors and managers affect firm performance non-linearly, after controlling for observed firm characteristics and unobserved firm heterogeneity. Institutional investors monitor the firm once their stake is more than 14 percent in the firm, and directors have a positive effect on firm performance after 25 percent of the ownership in the firm. We also find that the equity ownership by dominant group influences firm-performance, only in case of directorial ownership. We find no evidence in favor of endogeneity of ownership structure.

In this paper, we examine whether differences in ownership structure across firms can explain their performance differences in an emerging economy like India. Using detailed ownership structure of more than 2000 Indian corporate firms over the period 1994-2000, we provide answer to some of the questions raised herewith. Does ownership structure matter? If it does, then, whether government ownership is more effective than private (including foreign) ownership in maximizing firm value? Does the identity of shareholder matter? What is the comparative efficiency of several forms of private ownership? What is the preferred ownership structure for privately held firms? Is ownership structure really endogenous? Can ownership be a tool to control agency cost? These are some of the important questions, which researchers are trying to explore in the recent literature of corporate finance. In this context, we investigate Indian corporate firms in order to provide new evidence on how ownership structure influence firm value. Corporate Governance is the system of control mechanisms, through which "the

* Jayesh Kumar is currently Assistant Professor of Finance at Xavier Institute of Management, Bhubaneswar. He is a member of the editorial review board of Academy of Accounting and Financial Studies Journal (AAFSJ), the Academy of Accounting Studies Journal (AASJ), and the Academy of Entrepreneurship Journal (AEJ), and a reviewer for Journal of Emerging Market Finance (JEMF). His research interests include Corporate Governance, Financial Management, Applied Econometrics, Game Theory, and Political Economy. Author is grateful to Kausik Chaudhuri and Rajendra Vaidya for their helpful suggestions and comments.

suppliers of finance to corporations assure themselves of getting a return on their investment", (Shleifer and Vishny (1997)). The classical problem lies within the separation of ownership and control, i.e. the agency cost resulting from a divergence of interest between the owners and the managers of the firm (Jensen and Meckling (1976)).

Researchers have extensively studied the conflict between managers and owners regarding the functioning of the firm, although, the research on understanding the differences in behavior of different shareholder identities is limited. Berle and Means (1932) indicates that with an increase in professionalism of management, firms might be operating for the managers' benefit rather than that of the owners. Jensen and Meckling (1976) use principal-agent framework to explain the conflict of interests between managers and shareholders. The agency problem (developed by Coase (1960), Jensen and Meckling (1976) and Fama and Jensen (1983)) is an essential part of the contractual view of the firm. A rich empirical literature has investigated the efficacy of alternative mechanisms in terms of the relationship between takeovers, performance, managerial pay structure and performance of the firm. A rather small literature has attempted to test directly Berle and Means hypothesis. The empirical evidence on this point is mixed. Mork, Shleifer, and Vishny (1988), McConnell and Servaes (1990) provided evidence in favor of significant effect of managerial and institutional shareholding on performance. Recently a growing amount of empirical work has been done for emerging economies including India: Ahuja and Majumdar (1998), Chibber and Majumdar (1998: 1999), Majumdar (1998), Khanna and Palepu (2000), Sarkar and Sarkar (2000),
Qi, Wu, and Zhang (2000), Claessens, Djankov, and Lang (2000), Wiwattanakantang (2001) and Patibandla (2002). Claessens and Fan (2003) provide an excellent survey on Corporate Governance in Asia.

Agrawal and Knober (1996), Himmelberg, Hubbard, and Palia (1999), and Chen, Guo, and Mande (2003) have recently questioned these findings. They did not find any evidence for the relationship between firm value and managerial stock-holdings except Chen, Guo, and Mande (2003) after controlling for unobserved firm heterogeneity, and thus concluded that managerial shareholding are optimally chosen over the long run. Chen, Guo, and Mande (2003) document that managerial shareholding has a linear significant impact on Japanese firm performance, even after controlling for firm fixed effects. However they find that the fixed effect is significant.

Our work continues along these lines. It examines the link between firm performance and shareholding pattern for a panel of more than 2000 publicly traded Indian corporate firms over the years 1994 to 2000. We have contributed in three ways to the existing literature. First, we employ an econometric framework that specifically controls for firm specific unobserved heterogeneity and aggregate macroeconomic shocks. Second, our econometric methodology allows us to control for the unobserved firm heterogeneity caused by the ownership structure and other observed variables. This approach also provides evidence in favor of the fixed effect approach. Thirdly, it uses exact shareholding by different groups of owners, controlling for change in firm value due to small change in shareholding pattern (not exactly changing the dominance of a group), as in most of the cases shareholders dominance does not change dramatically. We also provide the evidence that the ownership structure do change significantly over time in case of emerging economies like India. We document that institutional shareholders including the government (institutional) and in some cases directors' are the group of owners, which confirms to Berle and Means hypothesis after controlling for firm specific fixed effects and some observed firm-specific factors that may influence firm's economic performance.

I. Literature Review

The nature of relation between the ownership structure and firm's economic performance, have been the core issue in the corporate governance literature. From a firms' point of view, firms' profitability, enjoyed by agents, is affected by ownership structure of the firm. In particular, ownership structure is an incentive device for reducing the agency costs associated with the separation of ownership and management, which can be used to protect property rights of the firm (Barbosa and Louri (2002)).

The theoretical literature on corporate governance proposes six main different mechanisms to control the agency costs, i.e. *Ownership Structure (Share holding pattern):* Jensen and Meckling (1976) and Shleifer and Vishny (1986), *Capital Structure and Board Structure:* Jensen (1986), *Managerial Remuneration:* Jensen and Mourphy (1990), *Product Market Competition:* Hart (1983), *Takeover Market:* Fama and Jensen (1983), Jensen and Warner (1988)[1].

While theoretical analysis of corporate governance deliver counteracting mechanisms of control, the empirical literature sheds light on the role of these counteracting mechanisms, suggesting firm value is an outcome of these mechanisms. As large shareholdings are common in the world, except the US and the UK (Porta, Lopez-De-Silanes, and Shleifer (1999)), it is argued that large shareholders' incentive to collect information and to monitor management reduces agency costs (Shleifer and Vishny (1986)).[2] Most of the works in literature have evolved against the backdrop of capitalist economies, while there is very little known (empirically) about such issues in emerging market economies.

In the literature, along with agency cost approach, some other mechanisms are also proposed to explain the differences (relationship) in ownership structure and firm performance. In general, agency theory is used to analyze the relationship between principals and agents. But there is an increasing need to understand the conflict between the different classes of principals. As some owners might have different incentives/strategies to monitor and they may also have better know-how of the market it may result in increased firm performance. The different class of owners may have different 'network effect', for example: group vs. stand-alone firms. There may be 'spillover effect' resulting from diversified owners. Same owners can have holdings in firms that provide inputs for other firms and lower cost than the market, reducing the costs incurred for the 'middle man'. If complete contracts could be written and enforced, ownership structure should not be a matter of concern (Coase (1960), Hart (1983)). In general, public sector firms are argued to be less efficient than private sector firms (in relatively competitive markets) due to low-powered managerial incentives and interest alignment.

There could be ''political'' reasons, as government pursues multiple objectives, some of which, unlike profit maximization, are hard to be contracted upon. Share holding pattern in such cases can make a difference in terms of firms' performance. In 1990s, with the onset of liberalization process, the monitoring of corporations became one of the important issues addressed in corporate governance literature in India. Chibber and Majumdar (1998), using industry level survey data (ASI), compared performance of state-owned enterprises (SOEs), mixed-enterprises (MEs), and private corporations (PCs), using data for 1973-89. They document that efficiency scores averaging 0.975 for private firms are significantly higher than averages of 0.912 for MEs and 0.638 for SOEs. A concern with this study is of the use of

[1] For a detailed survey see Shleifer and Vishny (1997) and Megginson and Netter (2001).

[2] For a survey of empirical studies on the impact of ownership structure on corporate performance (see Short (1994).

aggregated data. In addition, it could provide little insight to explain the efficiency differences across the sectors.

Majumdar (1998) and Ahuja and Majumdar (1998), discuss the relationship between the levels of debt in the capital structure and firm performance. While existing theory posits a positive relationship, Indian data reveals a negative relationship. As supply of loan capital is government owned, they support privatization to increase economic efficiency of firms. Chibber and Majumdar (1998: 1999) examine the influence of foreign ownership on performance of firms operating in India using accounting measures of performance in cross sectional data analysis. Rather than capturing ownership variation through looking at categories such as domestic versus state ownership or joint ventures versus solely owned subsidiaries, they look only at ownership variations that have a legal basis in Indian Companies Act of 1956. They find foreign ownership to have a positive and significant influence on various dimensions of firm performance, but it does so, only when it crosses a certain threshold limit, which is defined by the property rights regime.

Sarkar and Sarkar (2000), using firm level balance sheet data for 1995-96, provide evidence on the role of large shareholders in monitoring company value (Market to Book Value Ratio). They find that block-holdings by directors' increases company value after a certain level of holdings. However, they do not obtain any evidence of active governance from institutional investors. They also highlight that foreign equity ownership has a beneficial effect on company value. By adopting a spline methodology,[3] they documented that for each type of large shareholder, the incentives for monitoring, changes significantly when ownership stakes rise beyond a particular threshold. The use of Market to Book Value Ratio, as a performance measure may not be desirable, as the denominator does not include the investments a firm may have made in its intangible assets. If a firm has a higher ratio of its investment in the total assets as in intangibles, and if the monitoring of intangible assets is more difficult, then the stakeholders are likely to require a higher fraction of managerial shareholding to align the incentives. The firm with higher level on intangible assets will also have a higher performance (measured as a ratio of market value to book value), since the numerator will impound the present value of the cash flows generated by the intangible assets, but the denominator, under current accounting conventions (where book value of assets are reported rather than the current value of assets), will not include replacement cost of these intangible assets. These intangible assets will generate a positive correlation between ownership variables and performance, but this relation is spurious not causal. The market moods may also affect this measure. As for measurement of the market value researcher uses last trading days, closing price for the year, which may be different than the actual value. As during the end of financial year stock market gets more volatile due to certain other factors such as Budget announcement, which may have nothing to do with the specific firm.

Khanna and Palepu (2000), using business group level Indian data from 1993, find that firm performance initially declines with group diversification and subsequently increase once group diversification exceeds a certain level. Gupta (2001), using firm level data of government owned firms from 1993-98, documents that privatization and competition have a complementary impact on firm performance. Patibandla (2002), using firm level data from 1989 to 1999, show that foreign ownership is positively related with the firm performance. However, his analysis is based on industry level panel data, which does not account for unobserved firm heterogeneity.

[3] They have found that linear specification is not able to detect any evidence in favor of relationship between firm performance and ownership structure.

Douma, George, and Kabir (2002), examine how ownership structure, namely the differential role played by foreign individual investors and foreign corporate shareholders affect the firm performance, using firm level data for 2002 from India. They find foreign corporations attribute to positive effect on firm performance. They also document positive influence of domestic corporate shareholding on firm performance. However, all the above-mentioned studies have tried to look into the question using a cross-section of data except Patibandla (2002), which uses firm level panel data for 11 industries chosen for the noticeable level of foreign equity presence in the industries. The study uses industry dummies in a pooled OLS framework, to capture the fixed effects of the panel data (industry level). The study uses only one ownership variable at a time in the regression analysis to avoid multicollinearity, which may not be able to detect any interaction effect between two groups of owners and use only one group of owners in regression analysis at a time and argues that using all the six major groups of owners may lead to problem of multicollinearity, as the six major group of owners account for 100% of shareholding. However, the problem of multicollinearity may be taken care of by using four major groups of owners in the regression study, which does not necessarily add to 100%.

Our study differs from the above mentioned study in the following aspects: first we try to utilize the panel structure of our data accounting for unobserved firm heterogeneity and provide evidence that unobserved firm heterogeneity does exist. Second, we also model the endogeneity that may exist in terms of ownership variables. Finally, we use an extensive set of empirical specifications to examine the relationship between ownership structure and firms' performance. We also use different measures of firm performance, to see if there is any uniformity in the measures chosen or not. Hence, the obtained results are more robust than the earlier studies have documented.

II. Data and Institutional Details

For our study of effects of ownership structure (shareholding pattern) on firm performance, in emerging economy, we focus our attention on Indian corporate sector. We choose this as an experimental setting as Indian corporate sector offers the following advantages over other emerging market economies.

The Indian Corporate Sector has large number of corporate firms, lending itself to large sample statistical analysis. It is large by emerging market standards and the contribution of the industrial and manufacturing sectors (value added) is close to that in several advanced economies (Khanna and Palepu (2000)). Unlike several other emerging markets, firms in India, typically maintain their shareholding pattern over the period of study (Patibandla (2002)), making it possible to identify the ownership affiliation of each sample firm with clarity. It is by and large a hybrid of the *outsider systems*[4] and the *insider systems*[5] of corporate governance (Sarkar and Sarkar (2000)). The legal framework for all corporate activities including governance and administration of companies, disclosures, shareholders rights, has been in place since the enactment of the Companies Act in 1956 and has been fairly stable. The listing agreements of stock exchanges have also been prescribing on-going conditions and continuous obligations for companies.[6] India has had a well-established regulatory framework for more than four decades, which forms the foundation of the corporate governance system in India. Numerous initiatives have been taken by Stock Exchange Board of India (SEBI) to enhance corporate governance practice, in fulfillment of the twin objectives: investor protection and market development, for

[4] The management of the firm have nil or minimal shareholding.
[5] Management of the firm has significant shareholding.
[6] For more discussion on this see Kar (2001), pg. 249.

example: streamlining of the disclosure, investor protection guidelines, book building, entry norms, listing agreement, preferential allotment disclosures and lot more.

Although the Indian Corporate Sector is a mix of government and private firms (which are again a mix of firms owned by business group families, and multi nationals and stand alone firms), it has not suffered from the cronyism that has dominated some of the developing economies. Accounting system in India is well established and accounting standards are similar to those followed in most of the advanced economies (Khanna and Palepu (2000)).

This increases our confidence in the reliability of our data. The firm level panel data for our study is primarily obtained from the corporate database (PROWESS) maintained by CMIE, the Center for Monitoring the Indian Economy. The data used in the analysis consists of all manufacturing firms listed on the Bombay Stock Exchange (BSE), for which we could get their historical share holding pattern. Public Sector firms are not included in the analysis as their performance is influenced by a large number of social obligations, which may be difficult to account for. Firms within financial services segments are removed from consideration.

We confine our analysis to BSE listed firms only because all the listed firms are required to follow the norms set by SEBI for announcing the financial accounts. The BSE also has the second largest number of domestic quoted companies on any stock exchange in the world after NYSE, and more quoted companies than either the London or the Tokyo stock exchange.

We analyze data from 1994 to 2000.[7] We also restrict our analysis to firms that have no missing data (on sales, age, share holding pattern, return and assets) for at least 2 consecutive years.[8] There are 2575 firms (5224 firm years) in our sample, for which there is data required for at least 2 consecutive years.[9] Our final sample consists of 2517 firms with 5,117 observations. For this unbalanced panel of 5,117 observations, we collect the following additional data for each firm observation: advertising, distribution, depreciation, marketing, imports, exports, excise, capital and research and development (R&D) expenditure. Despite the problem of attrition and missing data, our sample provides several distinct advantages over the samples used in earlier studies. We perform our analysis after restricting the performance measure to lie between 1st and 99th percentile to tackle the problem of outliers, which may be influential. This leaves us with 5017 observations for 2478 firms.

III. Key Variables

We include four ownership variables: the managerial shareholding (director),[10] institutional investors shareholding (institutional), foreign investors shareholding (foreign), and corporate shareholding (corporate) and their squares to examine the presence of ownership effect. The squares of the ownership variables are included to distinguish the change in their effect after a certain threshold. Year dummies are also included to control for contemporaneous macroeconomic shocks. We use accounting measure of performance such as Return on Assets (ROA) and Return on equity (ROE).

---

[7] We could not use data beyond year 2000, as the definitions of the ownership variables underwent a dramatic change following the new disclosure pattern since March 2001 according to SEBI. The details of this change are available from the author on request.

[8] We cannot avoid these conditioning because we cannot use firms with observations less than two continuous years of data in our methodology.

[9] We drop observations, where values reported for capital stock, sales and age are missing, zero or negative.

[10] A number of studies, for example, Mork, Shleifer, and Vishny (1988) have used board of directors' equity holdings as a proxy for managerial ownership.

The accounting measures do not take into account the future prospects of firm performance but they do take into account the current status of the firm performance. The share market measures of firm performance may run into severe problems, especially in emerging market context, as most of the firms, go for debt-financing in these economies rather than using finance from the share market. Therefore, share market measures do not reflect the actual profits made by the investors on their investments. However, as a robustness check, we also use some market-based measures: such as MBVR and PQ ratio (As a proxy for Tobin's average Q).

IV. Control Variables

In order to control for the other possible determinants of firm performance not captured by the ownership variables, we also include some observed firm characteristics as control variables. The control variables used in the study have been selected with reference to those employed in earlier empirical studies (Himmelberg, Hubbard, and Palia (1999). We use age, size (as measured by the logarithm of sales) and its square, export intensity, import intensity, advertising intensity, R&D intensity, distribution intensity, marketing intensity, tax intensity, capital intensity and debt intensity as the control variables. We also try to provide a brief justification for these sets of control variables below.

Size: Firm size has an ambiguous effect a priori on the firm performance. Larger firms can be less efficient than smaller ones because of the loss of control by top managers over strategic and operational activities within the firm (Himmelberg, Hubbard, and Palia (1999), Sarkar and Sarkar (2000)).

Lang and Stulz (1994) suggest a decrease in firm value as firm becomes larger and more diversified. On the other hand, large firms may turn out to be more efficient as they are likely to exploit economies of scale, employ more skilled managers and the formalization of procedures that may lead to better performance. It also measures a firm's market power or the level of concentration in the industries in which the firm operates. Such characteristics make the implementation of operations more effective, allowing large firms to generate greater returns on assets and sales as well as to capture more value as a proportion of the value of the production, leading to a higher firm performance. We use the logarithm of sales (lnSale), and its square $(\text{lnSale})^2$ to control for firm size.

Age: Age of the firm has an ambiguous effect a priori on firm performance. As older firms gain experience-based economies of scale based on learning, they can enjoy superior performance compared to new comers and can avoid the liabilities of newness. However, older firms are prone to inertia, and rigidities in adaptability, which may lead to lower performance. We measure age as the number of years since inception to the date of observation.

Capital Intensity: Firms with higher concentration on "hard" capital[11] in their inputs will have better performance. The firms operating with higher capital-to-sales ratio impose entry barrier and enjoy better control over the market, than it would have been otherwise. We use the firms' capital-to-sales ratio as a measure of the relative importance of hard capital in the firm's technology.

R&D Intensity, Advertising Intensity, Distribution Intensity and Marketing Intensity: These expenditures of a firm may yield positive returns in future, improving firm performance. These variables also control for opportunities of discretionary expenditure by management. It is measured as ratio of respective expenditures to sales. These variables are used to control the operational aspects, based on empirical performance studies and literature reviewed in (Cui and Mak (2002)).

[11] "Hard" capital refers to installed capital.

Export Intensity: Exposure to foreign trade exerts pressure on firms to attain superior performance, lower cost and improved quality, and thereby raising competitive intensity and reducing inefficiencies in firms (Chibber and Majumdar (1998)). We use exports to sales ratio as a measure of export intensity.

Import Intensity: Firms with higher level of imported capital in their capital structure may outperform firms with lower share of imported capital goods. We use imports to sales ratio as a measure of import intensity.

Tax Intensity*:* Firms with higher level of net output will be required to pay higher excise tax. This suggests that the tax Intensity would be higher for the firms with higher output level. Due to unavailability of data on actual tax paid, we measure tax Intensity, by the provisions made for the payment of taxes.

Debt Intensity: For the firms with higher level of debt, cost of capital would be higher. In such scenario firm will have to perform better than it would have been otherwise. We measure debt Intensity as the ratio of long-term borrowings to total assets.

V. Empirical Analysis

This section is divided in five sub-sections: sub-section 1 presents the empirical model. The descriptive statistics are presented in sub-section 2. Sub-section 3 presents the regression results. The result from our robustness exercise is being reported in sub-section 4, while sub-section 5 deals with the endogeneity issues regarding the ownership variables. Finally in sub-section 6, we examine the relationship between dominant group shareholding and firm performance.

VI. Empirical Model

Himmelberg, Hubbard, and Palia (1999) have argued that regression of firm performance on ownership variables is potentially miss-specified because of the presence of the firm heterogeneity. Specifically, if some of the unobserved determinants of firm performance are also determinants of ownership, then ownership might spuriously appear to be a determinant of firm performance. Zhou (2001) have argued that the firm-fixed effects is not necessary in terms of ownership, as the ownership structure in general does not vary over time for a specific firm. We provided an explicit test to justify the inclusion of firm-fixed effects in both forms, namely, in terms of our control variables as well as in terms of ownership structures. This leads us to the estimation of the following equation:

$$\text{Performance}_{it} = f(\text{Foreign}_{it}, \text{Institutional}_{it}, \text{Corporate}_{it}, \text{Director}_{it}, \text{lnSale}_{it}, \text{Age}_{it}, \text{Debt Intensity}_{it}, \text{Export Intensity}_{it}, \text{Import Intensity}_{it}, \text{R\&D Intensity}_{it}, \text{Advertising Intensity}_{it}, \text{Distribution Intensity}_{it}, \text{Capital Intensity}_{it}, \text{Marketing Intensity}_{it}) + d_i + g_t + e_{it}$$

Where i and t represent the firm and periods, respectively, d_i is the firm-specific effect, and e_{it} is the error term.

$$\text{Performance}_{it} = a + b\,(\text{Ownership})_{it} + gX_{it} + t_t + d_i + e_{it}$$

Where $(\text{Ownership})_{it}$ variables measures the fraction of the equity of firm i, lying between 0 and 100, that is owned by different group of owners in period t. The X_{it} variables are firm-specific factors. This specification allows for a firm specific fixed effect d_i, time effects that are common to firms captured by year dummies (t_t), and a random unobserved component e_{it}. The main

advantage of a fixed effect estimation model is that it would control for the selection biases (see Gupta (2001)).

Percentage shareholding of different investors (Foreign, Institutional, Corporate and Director) are correlated, because, these shares, along with the shares of 'other top 50 shareholders' and 'others not included above' adds up to '100' percent. In order to avoid the problem of multi-collinearity, we use only four main shareholders, i.e. foreign, institutional, corporate, and director. We also use 1-digit and 2-digit level industry dummies, based on industrial classification of Annual Survey of Industries-National Industrial Classification' (1998) by NSSO (National Sample Survey Organization), which has similar classification as of Standard Industrial Classification (SIC).

VII. Descriptive Statistics

We present a detailed structure of our data in Table 1, which clearly reflects the unbalanced nature of the panel. Table 1 also depicts that most of the firms included in our sample belongs to SIC-1, SIC-2 or in the SIC-3 according to 1-digit industrial classification. Summary statistics relating to the variables used in the analysis is given in Table 2. Inspection of Table 2 reveals that the mean *director* ownership level for the whole sample is 17.29 percent. The mean percentage shareholders holding of *corporate*, in the whole sample is 26.12 percent. Our sample includes large as well as small firms with respect to sales and assets. Sales (mean Rs.179.66 crore) vary between Rs. 40.91 to Rs. 20,301.39 crore, with the median level at Rs. 4075 Crore. The mean ROA is 0.1057 with a maximum of 0.3836 and a minimum of -0.2519. It once again reinforces wide variation that exists in our sample.

Zhou (2001) has argued that fixed effect estimation should not be used in such analysis because of less variation in ownership structure. We provide results from the t-test for the change in ownership structure during the sample period for the common firms, providing evidence in favor of the hypothesis that change in ownership structure is significant. Table 3 can be read as follows: let us take 1994-1995 as an example. The p-values for t-test for foreign is 0.011 implying that foreign ownership significantly changes, even at 1% level of significance between 1994 and 1995 for the common set of firms.[12] Taking 1998-2000 as another example, we obtain that ownership of all categories change significantly for the common set of firms during this period. This table enables us to conclude that there is change in ownership structure over the period though may not be successive years. We strongly feel that if we have a longer time series of ownership pattern or a wider cross-section these ownership changes would be more significant.

In sum, we find that ownership do change significantly over time if not between consecutive years, thus enabling us to use Fixed Effect Panel Data Models.[13] We use 'ROA' as the measure of firm's performance in all regression analysis, if not otherwise stated. The change in ownership structure allows us to counter the argument against use of fixed-effect panel data approach by Zhou (2001).

VIII. Regression Results

Table 4 reports the results from cross-sectional regressions with 1-digit industry dummy to mitigate the findings of previous studies in Indian context. We find that results vary across years in case of ownership variables. Foreign ownership has linear and positive impact on firm performance in 1994, 1997 and in 1998. The institutional investors' share has negative linear

[12] Common firms are those, which exists in both periods.

[13] Later, we also provide more support for using Fixed Effect Panel Data Models.

effect and positive effect in squares in 1994. This trend reverses in year 1996 and continues till 1998. We also find that industry dummies are significant at 1% level for all the years except for 1994 and 1999. In sum, our cross-sectional results indicate that none of the ownership variables effect is consistent over the years. We report results of pooled OLS without any firm, time dummy in Table 5 (column 1). In pooled regression without any time or industry dummy, we find that 'foreign' and 'director' have significant role to play in the firm's performance and the impact is non-linear. Column 2 of Table 5 reports the results with two-digit industry dummy (NIC-2) and time dummies. The results in terms of foreign ownership are same as in Column 1, but the coefficient of the square of directors' ownership becomes insignificant. We also document the evidence that industry and time dummies are significant.[14]

We then proceed with firm-fixed effect model (column 3 of Table 5). We also present the results whether the fixed effect is at all required in such cases or not. To do this, we include fixed effect control for the ownership variable and for the other firm specific control variables. We test their effect separately and jointly as well.[15] We document that controlling for unobserved firm heterogeneity (the firm fixed effect) is important (the firm fixed effect is significant) in all cases in terms of both: ownership as well as control variables, along with time effect.[16]

Column 3 of Table 5 documents that both the institutional investors' and directors' holding have significant impact on firm performance even after controlling for unobserved firm heterogeneity. The impact is also non-linear in nature (the square of director's ownership $(director)^2$ and that of institutional investors ownership $(institutional)^2$ is significant). The estimated threshold point occurs at around 15% for the institutional investors while for directors' it occurs at 24%.[17] This implies that ROA declines as institutional (director's) share increases by 1% staring from 0 to 15% (24%) and then increases. Our result is in sharp contrast with previous studies: we do not obtain any significant relationship between foreign (corporate) ownership and firm performance. The results show that the some of the control variables, like age, size of the firm, import and debt intensity are also significant. Column 4 of Table 5 reports the analysis where we restrict the sample with a foreign holding less than 50%.[18] The reported results almost remain the same as in case of Column 3 of Table 5. To provide additional evidence of the relationship between group affiliation and firm performance, we have created a dummy variable taking the value of one if the firm belongs to a group. We have interacted this variable with the shareholding data of different ownership variable, namely, foreign, institutional, corporate and director. The results are presented in the last column of Table 5. The variable (director*group) is positive although not significant and in sharp contrast to the strong negative impact of director. This implies that the owner managers in case of group firms influences firm performance positively although not significantly. This is in sharp contrast to Douma, George, and Kabir (2002). To check whether ownership's collinearity has anything to do with the obtained results, we use each ownership group separately (same as Patibandla (2002)). We report these results in

[14] Results of the F-Test at the end of the Table 5 indicate this.

[15] We define fixed effect control as mean value of the variable at the firm level for full sample. For example: if firm A has observations for 4 years and the mean value of 'foreign' of 4 years is 10%, then we use 10% as the fixed effect control for 'foreign'.

[16] We have provided four different tests in this regard. The term Control Group Effect gives the p-value from an F-Test whether the firm specific dummies are required to control for unobserved firm heterogeneity for control variables like (age, size etc.). Ownership Group Effect gives the p-value from an F-Test whether the firm specific dummies are required to control for unobserved firm heterogeneity in case of ownership, where as, Group Effect for both control as well as ownership variables. The term Joint Effect denotes the case with both: firm specific fixed effects and time-effects.

[17] The same threshold is also obtained by Sarkar and Sarkar (2000) in case of directors' holding.

[18] Douma, George, and Kabir (2002) have also used this restriction.

Table 6. The results remain unchanged in terms of institutional and director as reported in Table 5. We also restrict our sample to one industry (NIC-2) as our sample indicates that most of the observations belong to this industry. The result is given in the last column of Table 6. We, however, include the entire ownership category in this case. In this case, although, 'institutional' still continues to be significant, 'director' looses its significance. To focus more on the obtained results, we also use two different specifications by estimating the spline specification in terms of ownership variable in the regression. The first one includes two piece-wise linear terms in ownership variables (*foreign1, foreign2, director1, director2, institutional1, institutional2, and corporate1, corporate2*) Specifically,

Foreign1	= Foreign ownership level	if foreign ownership level < 25,
	25	everywhere else;
Foreign2	= 0	if foreign ownership level < 25,
	Foreign ownership level minus 25	if foreign ownership level > 25.

Similarly we specify piece-wise linear terms for ('director') and ('corporate'), but in case of ('institutional') we use 15%.[19] In second specification we include again two piece- wise linear terms in ownership variables (*Foreign1, Foreign2, Director1, Director2, Institutional1, Institutional2, and Corporate1, Corporate2*). However, here we use 25% of all four categories.

The result with the spline estimation is reported in Table 7. Column 1 of Table 7 reports the case with first spline, where as in column 3, we report the case with the second one. In column 2 of Table 7, the result with the first spline specification is reported for those firms where the foreign ownership is less than 50%. The estimates from column 1 show that ROA significantly increases by 0.7% for every 1% increase in directors' holdings after 25% and significantly decreases by 0.2% for every 1% increase in institutional investors' holdings below 15%. Use of threshold points at 25% for the spline does not alter the results, except that institutional and its square is marginally insignificant (column 4 of Table 7).

We do some robustness test with restriction on the sample properties in terms of year and report the result in Table 8. In column 1, we report the results for the first three years of observations (1994-1996), where as in column 2, we do the same for the last three years (1998-2000). Column 3 and 4 report the results for the first four and the last four years respectively. The coefficients associated with institutional and its square is not significant in the first three years while it becomes significant for the last three. The result remains the same if we include the year 1997 in our observations. The coefficient of 'institutional' in level is negative and nearly significant.

However, for the last four years, our conclusion remains the same as in the case of the whole sample. The coefficient associated with directors' holdings looses its significance if we break the sample. Our results in terms of the role played by the institutional investors as a group, is not consistent with Khanna and Palepu (2000).[20] In order to understand this, we further decompose financial institutions in three parts: governments share (Govt.), financial institutions, for example, government sponsored banks, insurance companies and mutual funds (Fin. Inst.) and development financial institutions (Dev. Fin. Inst.). The results are presented in column 1 of Table 9. The firms' performance as measured by ROA decreases as Dev. Fin. Inst.'s share increases from 0 to 15% and then increases. It suggests that the 'Dev. Fin. Inst' monitors the firm

[19] Recall that from our regression results of column 2 (Table 5), we obtain 15% as the threshold point in case of 'Institutional'.

[20] This may be because of not controlling for unobserved firm heterogeneity, which exists in case of Indian corporate firms.

once they have at least 15% stakes in it. This is consistent with the findings of Sarkar and Sarkar (2000).

However, our results are definitely an improvement in the preciseness of the non-linearity. We find that the institutional investors have positive impact on the firm performance, when their stake is higher than the 15% (whereas Sarkar and Sarkar (2000) finds this threshold level to be at 25%). One possible explanation for the difference could be given with the help of the performance measurement. As they use MBVR as a performance measure, the difference can be explained with the unobserved firm heterogeneity. Development financial institutions have both debt and equity holding while the others just has equity holdings.

Our results almost remain the same if we restrict our analysis to the set of firms where the foreign ownership is less than 50%. Here the ownership by government sponsored banks, insurance companies and mutual funds becomes also significant in influencing firm performance if their ownership holding crosses 19%.

IX. Robustness of the Results

To check the robustness of our results, we report some further findings in Table 10. In column 1, firms with positive ROA are considered for the regression analysis. The results indicate that except institutional, none of the other ownership variables are significant. The same feature holds true for firms with firms having a manufacturing intensity higher than 50%, although the square of the directors' shareholding significantly increases performance of the firms (column 3). Performance of firms with positive net worth does not share a significant relationship with ownership (column 2). In column 5, we report the case for top 25% firms according to gross sales and bottom 25% in column 6. We find that performance of firms in top 25% class or in bottom 25% class does not change with change in ownership structure, but their performance does change for top 25% of the firms classified by age variable with the ownership of institutional investors (column 7).

We have stated earlier that to mitigate the problem of outliers, we restrict the dependent variable (ROA) to lie between 1% and 99%. We test the sensitivity of this by restricting ROA to lie between 10% and 90%. Column 1 of Table 11 reports the results. We still find the institutional is significant in level and also in its square, however, the variable director looses its significance. The threshold point for institutional is found to be at 18%. It implies that ROA decreases when institutional increases up to 18% and then starts increasing. Omitting firms where foreign ownership is more than 50% does not alter our results (column 2 of Table 11).

We also perform our analysis in terms of other performance variable: Return on Equity (ROE), Market to Book value ratio (MBVR) and PQ ratio (PQ_A). In all these cases, we restrict the dependent variable to lie between 10% and 90% and we impose the additional restriction that foreign ownership ('foreign') to be less than 50%. When we use ROE as dependent variable, 'institutional' still has negative effect on firm performance in level and positive effect with its squares, which is similar with ROA as performance measure. The threshold point turns out to be at 19% in case of ROE.[21] Use of market-based measure such as MBVR does not change the results in terms of institutional ownership, however, here the holding by corporate increases firm value in level.[22] The last column of Table 11 reports the result where we PQ_A as our

[21] Restricting ROE to lie between 1% and 99% does not alter our results. The results are not presented although available on request.

[22] Without restriction on foreign ownership gives the same qualitative result in case of MBVR as reported in Table 11. However, if we restrict MBVR to lie between 1% and 99%, ownership variable is not significant in influencing MBVR.

performance. In this case, we find that only the directors' holding increases the value of the firm if the directors' holding crosses 18%.

X. Is Ownership Endogenous?

There has been increasing concern about the endogeneity issue of ownership variables in literature Himmelberg, Hubbard, and Palia (1999). We try to mitigate this problem in this part of our paper. The results are given in Table 12. Column 2 of Table 12 reports the results where we use 2nd lag and the difference between 1st and 2nd lag of the ownership variable as instruments. Results from the endogeneity and over-identification test are reported in Table 12. We find that ownership variables are not endogenous. We also document that use of instruments satisfies the over-identification test. In the last column of Table 12, we also report the results from the first-differenced model.[23] Our results document that changes in institutional investors influences the changes in firm performance significantly and the effect is non-linear. Here the directors' shareholding is no longer significant. We also show that if the foreign ownership increases over 13%, then the changes in foreign ownership exerts a negative influence on firm performance.

XI. Does the Dominant Owner Influences Performance?

In order to examine whether the dominant owner influences firm performance, we construct a variable that acts as a proxy for the dominant shareholding equity of an owner group. For each observation, we use the maximum of the shareholding of the four owners as the dominant ones. We use that shareholding representing the stake of the dominant group and use zeros for the others.[24] To be consistent with our previous specification, we also include the square of the shareholding by the dominant owner. The results are reported in Table 14. We obtain that if the directors' act as a dominant group, it influences firm performance even after controlling for unobserved firm heterogeneity. The impact is non-linear in nature (although the level is not significant, the square term is significant). The estimated threshold point occurs at around 21%.

XII. Conclusion

This study has examined empirically the relationship between the ownership structure and firm performance using a panel of Indian corporate firms over 1994-2000. We document that unobserved firm heterogeneity explains a large fraction of cross-sectional variation in shareholding pattern that exists among Indian corporate firms. We conclude that the foreign shareholding pattern does not influence the firm performance significantly. This result is in sharp contrast with other existing studies with respect to India and other developing countries, which find that foreign ownership lead to higher performance. We document that institutional investors especially the development financial institutions affect firm performance positively once their ownership crosses a threshold level. Financial institutions monitor the firm once they have at least 15% equity stakes in it. The shareholding by the directors' also influences the performance of the firm beyond a certain threshold. This is consistent with the fact that many Indian corporate are family dominated enterprises. Our analysis also document that the effect of managerial shareholding and firm performance does not differ significantly across group and stand-alone firms. Our results also document that ownership variable is not endogenous. Given the contradictory results produced by the current study and the prior studies using Indian data, it is

[23] First differencing is another approach to remove the fixed effects.

[24] For example, for firm i in year t, suppose that the holdings by the foreign, institutional, corporate and director stand at 16%, 4%, 12% and 27% respectively. In our construction, we would classify the directors' as the dominant group with a shareholding of 27% and the rest as zero.

clear that there are many questions relating to the relationship between share holding pattern and performance of the firm, which remain unsolved.

There remains the task of finding out the mechanisms for the determination of shareholding pattern and corporate governance practices. One other useful extension of this analysis would be to include additional policy variables measuring changes in the market conditions such as trade or tax policy changes, to see whether ownership structure changes dramatically or not, if so to what extent and why? Do companies in emerging markets actually raise substantial equity finance? Who are the buyers of this equity? If they are dispersed minority shareholder, why are they buying equity despite the apparent absence of minority protections? However, these are left for future research.

REFERENCES

Agrawal, A., and C. Knober, 1996, Firm performance and mechanisms to control agency problems between managers and shareholders, *Journal of Financial and Quantitative Analysis* 31, 377–397.

Ahuja, Gautam, and Sumit K. Majumdar, 1998, An Assessment of the Performance of Indian State-Owned Enterprises, *The Journal of Productivity Analysis* 9, 113–132.

Barbosa, Natalia, and Helen Louri, 2002, On The Determinants of Multinationals' Ownership Preferences: Evidence from Greece and Portugal, *International Journal of Industrial Economics* 20, 493–515.

Berle, Adolf A., and Gardiner C. Means, 1932, *The Modern Corporation and Private Property*. (Larcourt, Brace & World Inc. New York (Republished: 1968)).

Chen, Carl R., Weiyu Guo, and Vivek Mande, 2003, Managerial ownership and firm valuation: Evidence from Japanese firms, *Pacific-Basin Finance Journal* 11, 267–283.

Chibber, Pradeep K., and Sumit K. Majumdar, 1998, State as Investor and State as Owner: Consequences for Firm Performance in India, *Economic Development and Cultural Change* 46,no.3, 561–580.

Chibber, Pradeep K., and Sumit K. Majumdar, 1999, Foreign Ownership and Profitability: Property Rights, Control, and the Performance of Firms in Indian Industry, *The Journal of Law and Economics* XLII, 209–238.

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

Claessens, Stijn, and Joseph P. H. Fan, 2003, Corporate Governance in Asia: A Survey, *International Review of Finance* 3(2), 71–113.

Coase, Ronald, 1960, The Problem of Social Cost, *The Journal of Law and Economics* 1, 1–44.

Cui, Huimin, and Y. T. Mak, 2002, The relationship between Managerial Ownership and Firm Performance in High R&D Firms, *Journal of Corporate Finance* 8, 313–336.

Douma, Sytse, Rejie George, and Rezaul Kabir, 2002, Foreign and Domestic Ownership, Business Groups and Firm Performance: Evidence from a Large Emerging Market, Titenburg University Working Paper.

Fama, Eugene F., and Michael C. Jensen, 1983, Separation of Ownership and Control, *The Journal of Law and Economics* 26, 301–325.

Gupta, Nandini, 2001, Partial Privatization and Firm Performance, William Davidson Institute Working Paper: 426.

Hart, Oliver D., 1983, The Market Mechanism as an Incentive Scheme, *The Bell Journal of Economics* 14(2), 366–382.

Himmelberg, Charles P., R. Glenn Hubbard, and Darius Palia, 1999, Understanding the Determinants of Managerial Ownership and the Link Between Ownership and Performance, *The Journal of Financial Economics* 53, 353–384.

Jensen, Michael C., 1986, Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers, *AEA Papers and Proceedings* 76(2), 323–329.

Jensen, Michael C., and William H. Meckling, 1976, Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, *The Journal of Financial Economics* 3, 305–360.

Jensen, Michael C., and K. J. Mourphy, 1990, Performance pay and top management incentive, *Journal of Political Economics* 98, 225–264.

Jensen, Michael C., and J. Warner, 1988, The distribution of Power among corporate managers, shareholders, and directors, *The Journal of Financial Economics* 20, 3–24.

Kar, Pratip, 2001, Corporate Governance in India in *Corporate Governance in Asia – A Comparative Perspective* (An OECD Publication).

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

Lang, Larry H. P., and Rane M. Stulz, 1994, Tobin's q, Corporate Diversification and Firm Performance, *Journal of Political Economics* 102,no.6, 1248–1280.

Majumdar, Sumit K., 1998, Capital Structure and Performance: Evidence from a transition economy on an aspect of Corporate Governance, *Public Choice* 98, 287–305.

McConnell, John J., and Henri Servaes, 1990, Additional Evidence on Equity Ownership and Corporate Value, *The Journal of Financial Economics* 27, 595–612.

Megginson, William L., and Jeffery M. Netter, 2001, From State to Market: A Survey of Empirical Studies on Privatization, *Journal of Economic Literature* XXXIX, 321–389.

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

Patibandla, Murali, 2002, Equity Pattern, Corporate Governance and Performance: A Study of Indian corporate Sector, Copenhagen Business School, Working Paper.

Porta, Rafel La, Florencio Lopez-De-Silanes, and Andrei Shleifer, 1999, Corporate Ownership Around the World, *The Journal of Finance* LIV, No.2, 471–517.

Qi, Daqing, Woody Wu, and Hua Zhang, 2000, Shareholding structure and corporate performance of partially privatized firms: Evidence from listed Chinese companies, *Pacific-Basin Finance Journal* 8, 587–610.

Sarkar, Jayati, and Subrata Sarkar, 2000, Large Shareholder Activism in Corporate Governance in
Developing Countries: Evidence From India, *International Review of Finance* 1,no.3, 161–194.

Shleifer, Andrei, and Robert W. Vishny, 1986, Large Shareholders and Corporate Control, *Journal of Political Economics* 94,no.3, 461–488.

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

Short, Helen, 1994, Ownership, Control, Financial Structure and the Performance of Firms, *Journal of Economic Surveys* 8,no.3, 203–209.

Wiwattanakantang, Yupana, 2001, Controlling shareholders and corporate value: Evidence from Thai-land, *Pacific-Basin Finance Journal* 9, 323–362.

Zhou, Xianming, 2001, Understanding the determinants of managerial ownership and the link between ownership and performance: comment, *The Journal of Financial Economics* 62, 559–571.

Table I
List of Variables

Abbreviation	Description
Performance Measures:	**ROA, ROE, MBVR, PQ A**
ROA	We measure Return on Assets as the ratio of return to total assets, where return is defined as the difference between operating revenues and expenditure before tax and interest payments (i.e. pbdit) and total asset of firm includes fixed assets, investments and current assets. R&D expenditures are included in operating expenditure in the year incurred, even though the R&D results may produce technical breakthroughs that will benefit the firm for years to come. We treat, therefore, R&D as investment rather than as current expenditure. Total assets include value of fixed assets, investments and current assets. ROA = Profit Before Depreciation, Interest and Tax (PBDIT) / Total Assets
ROE	We measure Return on Equity Capital as the ratio of return to equity capital. Equity Capital is the total outstanding paid up equity capital of the firm as at the end of the accounting period. Shares issued but not paid-up or pending allotments do not form part of equity capital. This includes bonus equity shares issued, if any, by the firm in the past. ROE = PBDIT/ Equity Capital
PQ_A	Proxy for Tobin's Average Q is defined as the ratio of the value of the firm divided by the replacement value of firm. For firm value, we use the market value of common equity plus total borrowings (includes all form of debt, interest bearing or other wise), and for the replacement value, we use total assets. We use last trading day's closing price for calculating market value of the firm. PQ_A = (Total Borrowings + Market Value (Equity))/ Total Assets
MBVR	Market to Book Value Ratio is defined as the ratio of the market value of the firm divided by the book value of firm. For market value of firm, we use the market value of common equity plus total borrowings (includes all form of debt, interest bearing or other wise). We use last trading day's closing price for calculating market value of the firm. MBVR = (Total Borrowings + Market Value (Equity))/ Book Value (Equity)
	Ownership Variables
Foreign	Foreigners' Share Holding is share held by foreigners as percentage of total equity shares. These include foreign collaborators, foreign financial institutions, foreign nationals and non-resident Indians.
Institutional	Governments' and Financial Institutions' Share Holding is equity shares held by government companies as percentage of total equity shares. These includes insurance companies, mutual funds, financial institutions, banks, central and state government firms, state financial Corporations and other government bodies.
Corporate	Corporates' Share Holding is equity held by corporate bodies as a percentage of total equity shares. These include corporate bodies excluding those already covered.
Director	Directors' Share Holding is equity held by Directors of the firm as defined in section 6 of the Companies Act, 1956. Which includes the share held by the family members of the director.

Table I, continued

	Control Variables
Age	Age is defined as the number of years since its inception. Where incorporation year pertains to the most recent incarnation year of the firm. In the case of firms that were reorganized, the year of incorporation may not reflect the true age of a firm (age calculated as above may give negative ages also). Therefore, we restrict our analysis to those firm-years whose age is non-negative, as calculated.
lnSale	Defined as natural logarithm of Gross Sales. Gross Sales denotes the revenue generated by an enterprise during a given accounting period. It excludes other income and income from non-recurring transactions, income of extra-ordinary nature and prior period income. Sales are always taken gross of indirect taxes such as excise duties.
Manufacturing Intensity	Measured as the ratio of manufacturing sales over gross sales. Sales of Manufacturing Goods are the sales generated through sale of its ownership manufactured goods.
Export Intensity	Export Intensity is the total revenue earned from exports of goods and services, income earned in foreign currency by ways of interest, dividend, royalties, and consultancy fees divided by gross sales.
Import Intensity	Import Intensity is defined as the ratio of total imports to gross sales. Total imports include not only import of raw materials etc, but also import of capital good.
R&D Intensity	R&D Intensity is the ratio of total expenditure (capital and current account) incurred by the firm in research and development to gross sales.
Debt Intensity	Debt Intensity is the ratio of long-term borrowings (total borrowings + short term bank borrowings - commercial paper) to total assets.
Capital Intensity	Capital Intensity is the ratio of total assets to gross sales. Advertising Intensity Advertising Intensity is defined as the ratio of advertising expenditure of the firm to the sales.
Marketing Intensity	Marketing Intensity is the ratio of marketing expenses of the firm to its gross sales.
Distribution Intensity	Distribution Intensity is the ratio of distribution expenditure to gross sales.
Tax Intensity	Tax Intensity is defined as the ratio of provisions for indirect taxes to gross sales.

Table II
Data Structure for NIC-1 digit Industry code

NIC-1 Digit	1994	1995	1996	1997	1998	1999	2000	Total
1-Mining and Quarrying	42	107	202	194	290	143	297	1275
2-Automobile	114	203	407	458	635	336	607	2760
3-Machinary	29	49	111	130	179	90	177	765
4-Electricity, Gas and Construction	4	4	4	4	11	2	6	35
5-Wholesale and Retail Trade	0	0	1	1	0	0	1	3
6-Transport, Storage and Communications	0	0	2	0	0	0	0	2
7-Computer and Related Activities	0	9	18	15	31	29	51	153
9-Diversified	7	10	19	23	33	12	21	125
Total	196	382	764	825	1179	612	1160	5118

Table III
Descriptive Statistics

	No. Obs.	Mean	Std. Dev.	Min.	Median	Max.
ROA	5118	0.10579816	0.09074905	-.25188968	0.11030981	0.38360327
ROE	5115	1.5522589	3.3072623	-6.1428571	0.85074621	128
MBVR	4458	1.0523628	63.651713	-2104.2915	1.0001218	1907.5856
PQ_A	5031	1.7642334	23.84846	0.000	0.65035522	1343.3507
Foreign	5118	10.839275	16.636828	0.000	3.51	100
Corporate	5118	26.122939	20.888978	0.000	22.395	100
Director	5118	17.291008	19.189895	0.000	10.64	97.489998
Institutional	5118	1.7013443	5.1933267	0.000	0.000	60.060001
Age	5118	22.373388	20.696271	0.000	15	175
Sales	5118	180.32264	617.75599	0.000	40.91	20301.391
Indirect Taxes	5118	21.516125	130.08161	0.000	1.63	4121.04
Advertising	5118	1.9561665	16.793921	0.000	0.01	737.88
Marketing	5118	3.0516979	10.009763	0.000	0.27000001	152.09
Distribution	5118	4.6680656	23.45774	0.000	.245	555.35999
Total Exports	5118	18.584603	67.118458	0.000	0.000	1948
Total Imports	5118	25.610522	135.43354	0.000	2.245	5176.6899
R&D	5017	0.00744277	0.44964938	0.000	0.000	31.837309
PBDIT	5118	28.996	124.36893	-96.709999	4.7750001	4788.4399
Equity Capital	5118	16.758396	48.404546	0.000	6.135	1054.75
Total Assets	5118	240.76723	948.37371	0.22	45.77	29368.82
Net Worth	5118	85.031118	376.00086	-1626.39	14.2	11211.69
Total Borrowing	5118	96.587882	397.83844	0.000	15.455	11520.24
Long term Borrowing	5118	75.048759	358.04356	0.000	8.8050003	10871.43
Book Value	4912	131.48838	983.82617	-2580.6599	11.42	27639.061

Table IV
p-values of T-test for changes in ownership over time

	Foreign	Institutional	Director	Corporate
1994 - 1995	0.0106*	0.0141*	0.4303	0.3647
1995 - 1996	0.5559	0.6805	0.0871+	0.1635
1996 - 1997	0.0040**	0.7565	0.2008	0.0664+
1997 - 1998	0.9079	0.4014	0.1731	0.3985
1998 - 1999	0.1349	0.1036	0.4824	0.6291
1999 - 2000	0.2053	0.0699+	0.9901	0.4347
1994 - 1997	0.0034**	0.1422	0.9695	0.0349*
1997 - 2000	0.0107*	0.5382	0.0001**	0.0042**
1994 - 2000	0.3394	0.5123	0.8737	0.0001**
1994 - 1996	0.0627+	0.1356	0.7307	0.1778
1996 - 1998	0.0603+	0.5815	0.0688+	0.3496
1998 - 2000	0.0081**	0.0683+	0.0029**	0.0007**

Table V
Cross-sectional regression results with 1-digit industry dummy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Age	0.000	0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.994)	(0.478)	(0.108)	(0.065)+	(0.000)**	(0.016)*	(0.044)*
lnSale	0.033	0.029	0.040	0.044	0.042	0.020	0.022
	(0.000)**	(0.000)**	(0.000)**	(0.000)**	(0.000)**	(0.001)**	(0.000)**
$lnSale^2$	-0.003	-0.003	-0.003	-0.003	-0.002	0.000	-0.000
	(0.001)**	(0.001)**	(0.000)**	(0.000)**	(0.000)**	(0.703)	(0.373)
Marketing Intensity	-0.356	-0.208	-0.024	-0.104	0.033	-0.077	-0.068
	(0.146)	(0.164)	(0.783)	(0.549)	(0.643)	(0.525)	(0.386)
Advertising Intensity	-0.547	-0.152	-0.015	0.212	0.285	0.428	-0.018
	(0.150)	(0.593)	(0.863)	(0.253)	(0.013)*	(0.007)**	(0.910)
R&D Intensity	-0.132	2.461	-0.627	0.010	-0.073	0.006	0.058
	(0.933)	(0.226)	(0.615)	(0.975)	(0.022)*	(0.000)**	(0.899)
Distribution Intensity	0.094	0.055	0.168	0.016	-0.122	-0.056	-0.267
	(0.644)	(0.396)	(0.036)*	(0.777)	(0.127)	(0.529)	(0.012)*
Export Intensity	0.000	0.006	-0.010	-0.023	0.008	0.057	0.030
	(0.993)	(0.714)	(0.440)	(0.099)+	(0.398)	(0.001)**	(0.015)*
Import Intensity	-0.028	0.000	0.000	-0.010	-0.007	-0.035	0.001
	(0.067)+	(0.731)	(0.843)	(0.330)	(0.041)*	(0.109)	(0.700)
Tax Intensity	0.079	0.047	0.016	0.003	0.007	0.077	-0.003
	(0.265)	(0.388)	(0.681)	(0.943)	(0.563)	(0.193)	(0.269)
Debt Intensity	-0.112	-0.017	-0.087	-0.098	-0.114	-0.128	-0.090
	(0.001)**	(0.647)	(0.000)**	(0.000)**	(0.000)**	(0.000)**	(0.000)**
Capital Intensity	-0.000	0.000	0.000	0.000	0.000	-0.000	-0.000
	(0.750)	(0.701)	(0.001)**	(0.000)**	(0.000)**	(0.625)	(0.920)
Foreign	0.003	0.000	0.001	0.001	0.001	0.001	0.000
	(0.017)*	(0.846)	(0.186)	(0.015)*	(0.002)**	(0.275)	(0.296)
$Foreign^2$	-0.000	0.000	0.000	-0.000	-0.000	-0.000	-0.000
	(0.372)	(0.566)	(0.438)	(0.283)	(0.035)*	(0.588)	(0.498)
Institutional	-0.004	-0.001	0.002	0.001	0.000	-0.001	-0.002
	(0.099)+	(0.652)	(0.096)+	(0.159)	(0.954)	(0.218)	(0.080)+
$Institutional^2$	0.000	0.000	-0.000	-0.000	-0.000	0.000	0.000
	(0.012)*	(0.342)	(0.074)+	(0.044)*	(0.817)	(0.776)	(0.320)
Director	0.001	0.001	0.001	0.000	0.001	0.001	0.000
	(0.161)	(0.181)	(0.148)	(0.565)	(0.004)**	(0.021)*	(0.428)
$Director^2$	-0.000	-0.000	-0.000	0.000	-0.000	-0.000	0.000
	(0.669)	(0.334)	(0.214)	(0.802)	(0.085)+	(0.102)	(0.704)
Corporate	0.002	-0.000	-0.000	0.000	0.000	-0.000	0.001
	(0.206)	(0.894)	(0.974)	(0.430)	(0.306)	(0.451)	(0.165)
$Corporate^2$	-0.000	0.000	0.000	-0.000	-0.000	0.000	-0.000
	(0.723)	(0.734)	(0.351)	(0.371)	(0.596)	(0.097)+	(0.237)
Observations	187	365	734	806	1163	600	1155
Industry Effect	**0.82**	**0.00**	**0.00**	**0.04**	**0.02**	**0.91**	**0.00**

Numbers in parentheses are p-values of t-statistics. Standard Errors are robust to heteroskedasticity.
Intercept term is used in the regression but not reported here. + significant at 10%; * significant at 5%; ** significant at 1%. Dependent Variable is restricted to be between 1% and 99%.

Table VI
Regression Results with 2 digit industry, time and firm dummies

	(1)	(2)	(3)	(4)	(5)
Age	-0.000	-0.000	-0.016	-0.016	-0.016
	(0.000)**	(0.000)**	(0.000)**	(0.000)**	(0.000)**
lnSale	0.030	0.031	0.019	0.019	0.019
	(0.000)**	(0.000)**	(0.002)**	(0.003)**	(0.002)**
$lnSale^2$	-0.001	-0.001	0.007	0.006	0.007
	(0.000)**	(0.000)**	(0.000)**	(0.000)**	(0.000)**
Marketing Intensity	-0.078	-0.093	-0.090	-0.085	-0.096
	(0.064)+	(0.039)*	(0.484)	(0.510)	(0.455)
Advertising Intensity	0.054	0.045	-0.260	-0.230	-0.260
	(0.323)	(0.436)	(0.004)**	(0.016)*	(0.004)**
R&D Intensity	0.006	0.005	0.014	0.174	0.017
	(0.000)**	(0.000)**	(0.691)	(0.473)	(0.628)
Distribution Intensity	-0.072	-0.070	-0.019	-0.038	-0.022
	(0.020)*	(0.036)*	(0.844)	(0.703)	(0.826)
Export Intensity	0.011	0.011	0.023	0.025	0.022
	(0.033)*	(0.040)*	(0.166)	(0.156)	(0.189)
Import Intensity	0.000	0.000	-0.002	-0.002	-0.002
	(0.841)	(0.367)	(0.000)**	(0.001)**	(0.000)**
Tax Intensity	-0.000	-0.001	-0.009	-0.008	-0.008
	(0.841)	(0.691)	(0.000)**	(0.000)**	(0.000)**
Debt Intensity	-0.105	-0.098	-0.111	-0.109	-0.112
	(0.000)**	(0.000)**	(0.000)**	(0.000)**	(0.000)**
Capital Intensity	0.000	0.000	0.000	0.000	0.000
	(0.002)**	(0.001)**	(0.152)	(0.167)	(0.149)
Foreign	0.001	0.001	0.000	-0.000	0.000
	(0.000)**	(0.000)**	(0.869)	(0.960)	(0.444)
$Foreign^2$	-0.000	-0.000	-0.000	0.000	-0.000
	(0.004)**	(0.008)**	(0.354)	(0.995)	(0.219)
Institutional	0.000	0.000	-0.003	-0.003	-0.002
	(0.892)	(0.872)	(0.069)+	(0.082)+	(0.120)
$Institutional^2$	-0.000	-0.000	0.000	0.000	0.000
	(0.441)	(0.413)	(0.082)+	(0.096)+	(0.090)+
Director	0.001	0.001	-0.001	-0.001	-0.001
	(0.000)**	(0.000)**	(0.093)+	(0.103)	(0.038)*
$Director^2$	-0.000	-0.000	0.000	0.000	0.000
	(0.073)+	(0.128)	(0.023)*	(0.025)*	(0.025)*
Corporate	0.000	0.000	0.000	0.000	0.000
	(0.249)	(0.396)	(0.918)	(0.873)	(0.792)
$Corporate^2$	0.000	0.000	-0.000	-0.000	-0.000
	(0.885)	(0.819)	(0.688)	(0.671)	(0.670)
Foreign*Group					-0.000
					(0.378)
Institutional*Group					-0.000
					(0.903)
Corporate*Group					-0.000
					(0.825)
Director*Group					0.001
					(0.219)
Observations	5017	5017	5017	4684	5017
Time Effect	**0.00**	**0.000**	**0.027**	**0.013**	**0.030**
Industry Effect		**0.00**			
Control Group Effect			**0.00**	**0.00**	**0.00**
Own Group Effect			**0.003**	**0.004**	**0.003**
Group Effect			**0.000**	**0.000**	**0.000**
Joint Effect			**0.000**	**0.000**	**0.000**

Numbers in parentheses are p-values of t-statistics. Standard Errors are robust to heteroskedasticity. Intercept term is used in the regression but not reported here. + significant at 10%; * significant at 5%; ** significant at 1%. Dependent Variable is restricted to be between 1% and 99%.

Table VII
One ownership at a time with firm dummies

	(1)	(2)	(3)	(4)	(5)
Age	-0.016	-0.016	-0.016	-0.016	-0.017
	(0.000)**	(0.000)**	(0.000)**	(0.000)**	(0.000)**
lnSale	0.019	0.019	0.019	0.019	0.014
	(0.002)**	(0.002)**	(0.002)**	(0.002)**	(0.071)+
$lnSale^2$	0.007	0.006	0.006	0.006	0.008
	(0.000)**	(0.000)**	(0.000)**	(0.000)**	(0.000)**
Marketing Intensity	-0.093	-0.097	-0.092	-0.091	0.040
	(0.479)	(0.457)	(0.483)	(0.486)	(0.818)
Advertising Intensity	-0.255	-0.250	-0.247	-0.249	-0.559
	(0.004)**	(0.006)**	(0.006)**	(0.005)**	(0.006)**
R&D Intensity	0.015	0.007	0.011	0.012	0.010
	(0.667)	(0.826)	(0.742)	(0.731)	(0.737)
Distribution Intensity	-0.022	-0.024	-0.025	-0.027	-0.038
	(0.824)	(0.804)	(0.796)	(0.780)	(0.848)
Export Intensity	0.022	0.023	0.022	0.022	0.031
	(0.192)	(0.177)	(0.201)	(0.204)	(0.262)
Import Intensity	-0.002	-0.002	-0.002	-0.002	-0.002
	(0.001)**	(0.001)**	(0.001)**	(0.001)**	(0.000)**
Tax Intensity	-0.009	-0.009	-0.009	-0.008	-0.011
	(0.000)**	(0.000)**	(0.000)**	(0.000)**	(0.000)**
Debt Intensity	-0.108	-0.108	-0.106	-0.107	-0.142
	(0.000)**	(0.000)**	(0.000)**	(0.000)**	(0.000)**
Capital Intensity	0.000	0.000	0.000	0.000	0.000
	(0.153)	(0.151)	(0.145)	(0.147)	(0.321)
Foreign	0.000				0.001
	(0.984)				(0.202)
$Foreign^2$	-0.000				-0.000
	(0.481)				(0.105)
Institutional		-0.002			-0.003
		(0.090)+			(0.082)+
$Institutional^2$		0.000			0.000
		(0.095)+			(0.086)+
Director				-0.001	-0.001
				(0.126)	(0.451)
$Director^2$				0.000	0.000
				(0.019)*	(0.150)
Corporate			-0.000		-0.000
			(0.872)		(0.864)
$Corporate^2$			-0.000		0.000
			(0.906)		(0.912)
Observations	5017	5017	5017	5017	2706
Control Group Effect	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Own Group Effect	**0.079**	**0.170**	**0.677**	**0.037**	**0.092**
Group Effect	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Time Effect	**0.023**	**0.020**	**0.014**	**0.022**	**0.027**
Joint Effect	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

Numbers in parentheses are p-values of t-statistics. Standard Errors are robust to heteroskedasticity. Intercept term is used in the regression but not reported here. + significant at 10%; * significant at 5%; ** significant at 1%. Dependent Variable is restricted to be between 1% and 99%.

Table VIII
Spline specification with firm dummies

	(1)	(2)	(3)	(4)
Age	-0.016	-0.016	-0.016	-0.016
	(0.000)**	(0.000)**	(0.000)**	(0.000)**
lnSale	0.019	0.019	0.019	0.019
	(0.002)**	(0.003)**	(0.002)**	(0.002)**
$lnSale^2$	0.007	0.006	0.007	0.006
	(0.000)**	(0.000)**	(0.000)**	(0.000)**
Marketing Intensity	-0.086	-0.082	-0.085	-0.081
	(0.507)	(0.527)	(0.512)	(0.535)
Advertising Intensity	-0.260	-0.227	-0.258	-0.225
	(0.004)**	(0.017)*	(0.004)**	(0.017)*
R&D Intensity	0.010	0.176	0.010	0.172
	(0.762)	(0.466)	(0.762)	(0.473)
Distribution Intensity	-0.021	-0.041	-0.021	-0.041
	(0.833)	(0.683)	(0.830)	(0.682)
Export Intensity	0.023	0.025	0.024	0.026
	(0.164)	(0.152)	(0.161)	(0.149)
Import Intensity	-0.002	-0.002	-0.002	-0.002
	(0.000)**	(0.001)**	(0.001)**	(0.001)**
Tax Intensity	-0.009	-0.009	-0.009	-0.009
	(0.000)**	(0.000)**	(0.000)**	(0.000)**
Debt Intensity	-0.110	-0.108	-0.111	-0.109
	(0.000)**	(0.000)**	(0.000)**	(0.000)**
Capital Intensity	0.000	0.000	0.000	0.000
	(0.151)	(0.165)	(0.150)	(0.164)
Foreign: (.,25)	-0.000	-0.000	-0.000	-0.000
	(0.824)	(0.655)	(0.812)	(0.640)
Foreign: (25,.)	-0.001	0.001	-0.001	0.000
	(0.226)	(0.645)	(0.237)	(0.662)
Institutional: (.,15)	-0.002	-0.002		
	(0.096)+	(0.097)+		
Institutional: (15,.)	0.002	0.002		
	(0.155)	(0.150)		
Director: (.,25)	-0.000	-0.000	-0.001	-0.001
	(0.246)	(0.259)	(0.240)	(0.253)
Director: (25,.)	0.001	0.001	0.001	0.001
	(0.078)+	(0.086)+	(0.079)+	(0.086)+
Corporate: (.,25)	-0.000	-0.000	-0.000	-0.000
	(0.648)	(0.630)	(0.629)	(0.636)
Corporate: (25,.)	-0.000	-0.000	-0.000	-0.000
	(0.674)	(0.736)	(0.693)	(0.742)
Institutional: (.,25)			-0.001	-0.001
			(0.126)	(0.134)
Institutional: (25,.)			0.005	0.005
			(0.109)	(0.116)
Observations	5017	4684	5017	4684
Time Effect	**0.02**	**0.01**	**0.02**	**0.01**

Numbers in parentheses are p-values of t-statistics. Standard Errors are robust to heteroskedasticity. Intercept term is used in the regression but not reported here. + significant at 10%; * significant at 5%; ** significant at 1%. Dependent Variable is restricted to be between 1% and 99%.

Table IX
Results with three and four years common observations

	(1)	(2)	(3)	(4)
Age	-0.018	-0.012	-0.022	-0.013
	(0.001)**	(0.015)*	(0.000)**	(0.000)**
lnSale	0.049	0.042	0.053	0.064
	(0.021)*	(0.270)	(0.001)**	(0.013)*
$lnSale^2$	0.002	0.004	0.005	0.000
	(0.424)	(0.330)	(0.012)*	(0.907)
Marketing Intensity	-0.164	-0.104	-0.013	-0.287
	(0.693)	(0.736)	(0.965)	(0.193)
Advertising Intensity	-0.588	-0.303	0.102	-0.247
	(0.218)	(0.615)	(0.756)	(0.218)
R&D Intensity	-0.267	-0.633	0.010	-0.048
	(0.828)	(0.110)	(0.961)	(0.302)
Distribution Intensity	-0.787	-0.044	-0.340	-0.003
	(0.129)	(0.900)	(0.276)	(0.991)
Export Intensity	0.140	-0.014	0.077	-0.038
	(0.109)	(0.836)	(0.068)+	(0.397)
Import Intensity	-0.002	-0.073	-0.003	-0.039
	(0.020)*	(0.148)	(0.094)+	(0.141)
Tax Intensity	-0.118	-0.528	-0.178	-0.274
	(0.217)	(0.024)*	(0.080)+	(0.172)
Debt Intensity	-0.170	-0.191	-0.136	-0.149
	(0.001)**	(0.011)*	(0.000)**	(0.000)**
Capital Intensity	0.001	0.001	0.001	0.001
	(0.265)	(0.072)+	(0.093)+	(0.017)*
Foreign	0.000	0.002	-0.001	0.001
	(0.918)	(0.374)	(0.552)	(0.238)
$Foreign^2$	0.000	-0.000	0.000	-0.000
	(0.541)	(0.356)	(0.485)	(0.169)
Institutional	-0.003	-0.011	-0.004	-0.007
	(0.293)	(0.075)+	(0.124)	(0.050)+
$Institutional^2$	0.000	0.000	0.000	0.000
	(0.455)	(0.043)*	(0.222)	(0.031)*
Director	-0.000	-0.001	0.001	-0.002
	(0.988)	(0.603)	(0.429)	(0.185)
$Director^2$	0.000	0.000	-0.000	0.000
	(0.820)	(0.415)	(0.661)	(0.266)
Corporate	-0.000	-0.001	-0.000	-0.001
	(0.705)	(0.738)	(0.875)	(0.443)
$Corporate^2$	0.000	0.000	0.000	0.000
	(0.368)	(0.898)	(0.807)	(0.542)
Observations	1282	2335	2100	3335
Control Group Effect	**0.00**	**0.00**	**0.00**	**0.00**
Own Group Effect	**0.006**	**0.124**	**0.021**	**0.074**
Group Effect	**0.000**	**0.000**	**0.000**	**0.000**
Time Effect	**0.820**	**0.861**	**0.853**	**0.059**
Joint Effect	**0.000**	**0.000**	**0.000**	**0.000**

Numbers in parentheses are p-values of t-statistics. Standard Errors are robust to heteroskedasticity. Intercept term is used in the regression but not reported here. + significant at 10%; * significant at 5%; ** significant at 1%. Dependent Variable is restricted to be between 1% and 99%.

Table X
Results of Fixed Effect regression with more disaggregated ownership structure

	(1)	(2)
Age	-0.016	-0.016
	(0.000)**	(0.000)**
lnSale	0.018	0.018
	(0.007)**	(0.007)**
$lnSale^2$	0.007	0.007
	(0.000)**	(0.000)**
Marketing Intensity	-0.121	-0.118
	(0.354)	(0.364)
Advertising Intensity	-0.251	-0.221
	(0.007)**	(0.025)*
R&D Intensity	0.015	0.189
	(0.674)	(0.442)
Distribution Intensity	-0.019	-0.035
	(0.851)	(0.735)
Export Intensity	0.035	0.036
	(0.042)*	(0.045)*
Import Intensity	-0.002	-0.002
	(0.001)**	(0.001)**
Tax Intensity	-0.009	-0.008
	(0.000)**	(0.000)**
Debt Intensity	-0.119	-0.118
	(0.000)**	(0.000)**
Capital Intensity	0.000	0.000
	(0.178)	(0.177)
Foreign	0.000	0.000
	(0.798)	(1.000)
$Foreign^2$	-0.000	0.000
	(0.332)	(0.966)
Director	-0.001	-0.001
	(0.120)	(0.133)
$Director^2$	0.000	0.000
	(0.028)*	(0.032)*
Corporate	0.000	0.000
	(0.849)	(0.764)
$Corporate^2$	-0.000	-0.000
	(0.602)	(0.535)
Dev. Fin. Inst.	-0.003	-0.003
	(0.077)+	(0.106)
Dev. Fin. Inst. ^{2}	0.000	0.000
	(0.081)+	(0.112)
Fin. Inst.	-0.001	-0.001
	(0.331)	(0.141)
Fin. Inst. ^{2}	0.000	0.000
	(0.238)	(0.089)+
Govt.	-0.001	-0.002
	(0.314)	(0.205)
Govt. ^{2}	0.000	0.000
	(0.472)	(0.470)
Observations	4852	4529
Control Group Effect	**0.00**	**0.00**
Own Group Effect	**0.021**	**0.019**
Group Effect	**0.000**	**0.000**
Time Effect	**0.023**	**0.012**
Joint Effect	**0.000**	**0.000**

Numbers in parentheses are p-values of t-statistics. Standard Errors are robust to heteroskedasticity. Intercept term is used in the regression but not reported here. + significant at 10%; * significant at 5%; ** significant at 1%. Dependent Variable is restricted to be between 10% and 90%.

Table XI
Results of Fixed Effect regressions for sub-samples

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Age	-0.012	-0.015	-0.016	-0.010	-0.010	-0.017	-0.008
	(0.000)**	(0.000)**	(0.000)**	(0.000)**	(0.023)*	(0.000)**	(0.010)**
lnSale	0.025	0.028	0.024	0.030	0.029	-0.010	0.018
	(0.002)**	(0.000)**	(0.001)**	(0.568)	(0.002)**	(0.460)	(0.071)+
$lnSale^2$	0.003	0.004	0.007	0.003	0.008	0.010	0.005
	(0.001)**	(0.000)**	(0.000)**	(0.470)	(0.052)+	(0.000)**	(0.011)*
Marketing Intensity	0.068	0.037	-0.092	-0.014	0.106	-0.235	0.096
	(0.633)	(0.738)	(0.512)	(0.940)	(0.533)	(0.164)	(0.608)
Advertising Intensity	-0.266	-0.114	-0.233	-0.446	-0.159	-0.599	-0.354
	(0.041)*	(0.145)	(0.071)+	(0.193)	(0.275)	(0.114)	(0.019)*
R&D Intensity	-0.049	0.007	0.023	0.043	0.030	0.320	0.317
	(0.748)	(0.842)	(0.458)	(0.784)	(0.456)	(0.479)	(0.265)
Distribution Intensity	-0.313	-0.122	0.001	-0.327	-0.096	-0.483	-0.322
	(0.018)*	(0.168)	(0.991)	(0.118)	(0.497)	(0.013)*	(0.135)
Export Intensity	0.043	0.030	0.024	0.077	-0.022	0.058	0.039
	(0.003)**	(0.041)*	(0.221)	(0.127)	(0.614)	(0.066)+	(0.215)
Import Intensity	-0.003	-0.001	-0.009	-0.024	-0.001	-0.071	0.001
	(0.001)**	(0.002)**	(0.123)	(0.292)	(0.106)	(0.063)+	(0.695)
Tax Intensity	-0.027	-0.006	-0.008	-0.128	-0.013	-0.251	-0.009
	(0.413)	(0.001)**	(0.001)**	(0.114)	(0.007)**	(0.002)**	(0.002)**
Debt Intensity	-0.100	-0.123	-0.117	-0.078	0.021	-0.127	-0.082
	(0.000)**	(0.000)**	(0.000)**	(0.029)*	(0.659)	(0.000)**	(0.014)*
Capital Intensity	0.001	0.000	0.000	-0.007	0.000	0.000	0.000
	(0.010)**	(0.008)**	(0.118)	(0.265)	(0.209)	(0.739)	(0.579)
Foreign	0.000	0.000	0.000	0.000	0.002	-0.000	-0.002
	(0.967)	(0.869)	(0.848)	(0.931)	(0.627)	(0.906)	(0.280)
$Foreign^2$	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	0.000
	(0.305)	(0.291)	(0.358)	(0.546)	(0.797)	(0.444)	(0.433)
Institutional	-0.002	-0.002	-0.003	0.000	0.000	-0.004	-0.000
	(0.100)+	(0.130)	(0.073)+	(0.781)	(0.996)	(0.021)*	(0.942)
$Institutional^2$	0.000	0.000	0.000	-0.000	-0.000	0.000	0.000
	(0.116)	(0.137)	(0.121)	(0.747)	(0.846)	(0.040)*	(0.859)
Director	-0.000	-0.000	-0.001	0.000	-0.002	-0.002	-0.000
	(0.660)	(0.521)	(0.165)	(0.824)	(0.228)	(0.254)	(0.777)
$Director^2$	0.000	0.000	0.000	-0.000	0.000	0.000	0.000
	(0.291)	(0.317)	(0.049)*	(0.762)	(0.219)	(0.548)	(0.781)
Corporate	0.000	-0.000	0.000	0.000	-0.003	-0.000	0.000
	(0.861)	(0.527)	(0.401)	(0.881)	(0.321)	(0.636)	(0.933)
$Corporate^2$	-0.000	0.000	-0.000	-0.000	0.000	0.000	-0.000
	(0.609)	(0.724)	(0.260)	(0.759)	(0.325)	(0.838)	(0.843)
Observations	4468	4678	4489	1276	1196	1278	1251
Control Group Effect	**0.00**	**0.00**	**0.00**	**0.04**	**0.01**	**0.00**	**0.00**
Own Group Effect	**0.024**	**0.013**	**0.003**	**0.489**	**0.846**	**0.158**	**0.191**
Group Effect	**0.000**	**0.000**	**0.000**	**0.114**	**0.038**	**0.000**	**0.003**
Time Effect	**0.146**	**0.119**	**0.010**	**0.314**	**0.897**	**0.034**	**0.800**
Joint Effect	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

Numbers in parentheses are p-values of t-statistics. Standard Errors are robust to heteroskedasticity. Intercept term is used in the regression but not reported here. + significant at 10%; * significant at 5%; ** significant at 1%. Dependent Variable is restricted to be between 1% and 99%.

Table XII
Results of Fixed Effect regressions with other Performance Measures

	(1)	(2)	(3)	(4)	(5)
Age	-0.010	-0.010	-0.067	0.009	-0.055
	(0.000)**	(0.000)**	(0.000)**	(0.622)	(0.000)**
lnSale	0.024	0.024	-0.047	-0.029	-0.022
	(0.000)**	(0.000)**	(0.329)	(0.678)	(0.251)
$lnSale^2$	0.003	0.003	0.093	0.037	-0.000
	(0.000)**	(0.001)**	(0.000)**	(0.001)**	(0.881)
Marketing Intensity	-0.083	-0.097	-1.205	1.074	-0.039
	(0.276)	(0.211)	(0.366)	(0.504)	(0.939)
Advertising Intensity	-0.165	-0.158	-0.672	-0.061	-0.176
	(0.157)	(0.184)	(0.614)	(0.973)	(0.747)
R&D Intensity	-0.014	-0.021	1.794	-4.670	0.724
	(0.922)	(0.933)	(0.466)	(0.442)	(0.738)
Distribution Intensity	-0.290	-0.301	-1.960	-0.139	0.284
	(0.001)**	(0.000)**	(0.111)	(0.927)	(0.594)
Export Intensity	0.046	0.049	0.112	0.059	0.004
	(0.000)**	(0.000)**	(0.440)	(0.829)	(0.968)
Import Intensity	-0.001	-0.001	-0.002	0.113	-0.009
	(0.060)+	(0.068)+	(0.567)	(0.455)	(0.082)+
Tax Intensity	-0.015	-0.013	-0.375	0.471	0.016
	(0.591)	(0.645)	(0.405)	(0.258)	(0.893)
Debt Intensity	-0.064	-0.066	-0.018	0.092	0.490
	(0.000)**	(0.000)**	(0.918)	(0.686)	(0.000)**
Capital Intensity	0.000	0.000	-0.003	-0.002	-0.000
	(0.059)+	(0.055)+	(0.020)*	(0.379)	(0.633)
Foreign	0.000	-0.000	-0.002	0.005	-0.000
	(0.965)	(0.424)	(0.861)	(0.681)	(0.965)
$Foreign^2$	-0.000	0.000	-0.000	0.000	0.000
	(0.205)	(0.624)	(0.732)	(0.210)	(0.535)
Institutional	-0.002	-0.002	-0.035	-0.034	0.003
	(0.064)+	(0.049)*	(0.019)*	(0.067)+	(0.571)
$Institutional^2$	0.000	0.000	0.001	0.001	-0.000
	(0.100)+	(0.079)+	(0.061)+	(0.073)+	(0.594)
Director	-0.000	-0.000	-0.004	-0.005	-0.003
	(0.654)	(0.700)	(0.506)	(0.357)	(0.225)
$Director^2$	0.000	0.000	0.000	0.000	0.000
	(0.447)	(0.529)	(0.498)	(0.234)	(0.056)+
Corporate	0.000	0.000	0.001	0.013	-0.000
	(0.500)	(0.748)	(0.837)	(0.066)+	(0.883)
$Corporate^2$	-0.000	-0.000	-0.000	-0.000	0.000
	(0.146)	(0.285)	(0.146)	(0.310)	(0.361)
Observations	4096	3871	3814	3354	3833
Control Group Effect	**0.000**	**0.00**	**0.00**	**0.00**	**0.00**
Own Group Effect	**0.015**	**0.008**	**0.001**	**0.000**	**0.038**
Group Effect	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Time Effect	**0.309**	**0.466**	**0.992**	**0.000**	**0.000**
Joint Effect	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

Numbers in parentheses are p-values of t-statistics. Standard Errors are robust to heteroskedasticity. Intercept term is used in the regression but not reported here. + significant at 10%; * significant at 5%; ** significant at 1%. Dependent Variable is restricted to be between 10% and 90% for all columns and Foreign<50% other than the first column.

Table XIII
Results from Instrumental Variable and First-Differenced Model

	(1)	(2)
Age	-0.020	-0.014
	(0.000)**	(0.011)*
LnSale	0.014	0.028
	(0.456)	(0.000)**
$lnSale^2$	0.006	0.006
	(0.038)*	(0.000)**
Marketing Intensity	0.084	-0.166
	(0.774)	(0.245)
Advertising Intensity	0.090	-0.098
	(0.893)	(0.594)
R&D Intensity	0.535	0.014
	(0.639)	(0.857)
Distribution Intensity	-0.173	-0.135
	(0.689)	(0.356)
Export Intensity	-0.029	0.005
	(0.663)	(0.866)
Import Intensity	-0.015	-0.002
	(0.746)	(0.000)**
Tax Intensity	0.036	-0.025
	(0.792)	(0.580)
Debt Intensity	-0.094	-0.114
	(0.131)	(0.000)**
Capital Intensity	0.000	0.000
	(0.695)	(0.007)**
Foreign	0.000	0.001
	(0.981)	(0.303)
$Foreign^2$	0.000	-0.000
	(0.825)	(0.035)*
Institutional	0.055	-0.007
	(0.169)	(0.018)*
$Institutional^2$	-0.002	0.000
	(0.175)	(0.040)*
Director	-0.005	-0.000
	(0.512)	(0.777)
$Director^2$	0.000	0.000
	(0.567)	(0.650)
Corporate	-0.004	-0.000
	(0.471)	(0.521)
$Corporate^2$	0.000	0.000
	(0.465)	(0.789)
Observations	1175	1987
Number of group	562	
Time Effect	**0.14**	
Instrumented : $Foreign^2$ $Institutional^2$ $Director^2$ $Corporate^2$		
Test of overidentifying restrictions		
	0.8416	
Davidson-MacKinnon test of exogeneity		
	0.5072	

Numbers in parentheses are p-values of t-statistics. Standard Errors are robust to heteroskedasticity. Intercept term is used in the regression but not reported here. + significant at 10%; * significant at 5%; ** significant at 1%. Dependent Variable is restricted to be between 1% and 99%.

Table XIV
Results with Dominant Owner Group

Age	-0.016
	(0.000)**
LnSale	0.019
	(0.002)**
$LnSale^2$	0.006
	(0.000)**
Marketing Intensity	-0.095
	(0.465)
Advertising Intensity	-0.251
	(0.005)**
R&D Intensity	0.017
	(0.632)
Distribution Intensity	-0.027
	(0.786)
Export Intensity	0.022
	(0.192)
Import Intensity	-0.002
	(0.001)**
Tax Intensity	-0.009
	(0.000)**
Debt Intensity	-0.109
	(0.000)**
Capital Intensity	0.000
	(0.146)
Max_Foreign	0.001
	(0.397)
$Max\_Foreign^2$	-0.000
	(0.198)
Max_Institutional	-0.004
	(0.142)
$Max\_Institutional^2$	0.000
	(0.192)
Max_Director	-0.001
	(0.202)
$Max\_Director^2$	0.000
	(0.033)*
Max_Corporate	0.000
	(0.959)
$Max\_Corporate^2$	-0.000
	(0.843)
Observations	5017
Control Group Effect	**0.000**
Own Group Effect	**0.010**
Group Effect	**0.000**
Time Effect	**0.027**
Joint Effect	**0.000**

Numbers in parentheses are p-values of t-statistics. Standard Errors are robust to heteroskedasticity. Intercept term is used in the regression but not reported here. + significant at 10%; * significant at 5%; ** significant at 1%. Dependent Variable is restricted to be between 1% and 99%.