Determinants of Board Effectiveness: Evidence from Large Indian Firms

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Abstract

Although the importance of an effective board has generally been accepted, the characteristics that lead to board effectiveness and the mechanism of their action have been topics of debate in business research. The literature in this field is both fragmented and multi-disciplinary in nature, with few attempts to consolidate the same and evolve a holistic view. Most literature of board of directors focuses on Anglo-Saxon system and there is a general dearth of studies relating to emerging economies like India, which have peculiar governance and financial structures. The paper identifies and classifies the board characteristic variables and hypothesizes a conceptual, holistic, governance model of firm performance and tests it using the data from large, listed, Indian firms incorporating firm-level and industry-level control variables. It examines the association of these variables to market-based and accounting-based measures of firm performance.

Key Words : Dependent Variables, Market-based Measure, Accounting-based Measures, Conceptual Governance Model, Duality ,Firm Performance

Introduction

Effectiveness of a firm's corporate governance has become a matter of great concern following the collapse of some globally reputed and respected corporations the world over. Business press and the academic works highlight the importance of practicing good corporate governance (Maher and Andersson, 1999; Coombes and Watson, 2000; Orgill, 2003). There is ample evidence of correlation between good governance practices and firm performance, leading to shareholder value creation (Felton et al., 1996; Coombes and Watson, 2000; Nowell and Wilson, 2002).

A well functioning board of directors is the key to good corporate governance. Board of directors has been recognized as an important institution in corporate governance of firms (Felton et al., 1995, 1996; Ram Charan, 1998; Garrat, 1999; Lawler III, 2002). A board essentially represents a group of people, selected for

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their expertise and reputation, which come together to add value to the organization they lead. While boards are theoretically and legally responsible for the affairs of the company, in practice, management has the expertise, control and time to manage the company. Literature on board of directors recommends several ways by which boards can be empowered or their interests aligned with the shareholders rather than being rubber stamps of the management (Demb and Newbauer, 1992; Firstenberg and Malkiel, 1994; Felton et al, 1996; Garrat, 1999, Hambrick and Jackson, 2000). These include modifying board attributes such as size, diversity, independence, leadership structure etc. to board ownership and compensation.

Though the importance of an effective board has generally been accepted, what characteristics constitute an effective board, and in what way they can be manipulated to improve board effectiveness have been topics of debate in business research (Dalton et al, 1998a; Goilden and Zajac, 2001; Hermalin and Weisbach, 2001). The literature in this field is fragmented and often inconclusive (Bhagat & Black, 2000). The reasons being a poor understanding of the underlying mechanisms, context dependence of the phenomenon, and presence of endogeneity causing methodological problems in establishing clear linkages. The literature having remained confined to different disciplines like economics, finance, organization behaviour, strategic management and few attempts have been made to consolidate the same and evolve a holistic view. Moreover, the existing research outcomes, which mainly relate to Anglo-Saxon countries, may not be valid for a country like India since the governance and financial structures are substantially different from those of the Anglo-Saxon countries. Some key distinguishing features of the Indian system include - concentrated shareholdings, family ownership, institutional and bank ownership, non-existence of an active takeover market and the degree of control of judicial and oversight institutions.

This paper aims to gain insight into attributes of the board of directors that contribute to effectiveness of corporate governance of a firm and hence its performance in the Indian context. The study identifies and classifies the board effectiveness variables and hypothesizes a conceptual, holistic, governance model of firm performance and tests it using data from large, listed, Indian firms incorporating other firm level and industry level control variables. The rest of this paper is divided into five sections. The second section describes the theoretical foundations of corporate governance and the implication that different theories have on structure and functioning of board of directors. The third section reviews the present literature in this area and develops the hypotheses. The fourth section describes the research design and the nature of the data and variables. The fifth section presents the results of the study and discusses their implications and the final section draws out the conclusions, and enumerates the limitations and scope for further research.

Theoretical Foundations

Literature on corporate governance and board of directors is broadly based on two distinct theoretical foundations. On the one hand is the Agency theory, which assumes separation of ownership and control leading to transaction costs required to monitor the agents. Stewardship theory on the other hand assumes alignment of interests of owners and managers in the long run. Other theories such as the Resource dependence or the Resource based theory, Managerial hegemony theory and theories of group behaviour are also sparingly used to explain the structure and functioning of board of directors.

From the Agency perspective, critical functions of the Board are monitoring and evaluation of decisions made by CEOs and executive directors in terms of company performance and protection of shareholders' value. The effectiveness of these monitoring and control functions is usually related to such structural factors as board size, proportion of outsiders on the Board, CEO/Chairman roles held jointly or separately, etc. (Shleifer and Vishny, 1997). Agency and organizational economics theories predict that when the CEO also holds the dual role of chair, then the interests of the owners will be sacrificed to a degree in favour of management, that is, there will be managerial opportunism and Agency loss. Similarly, Agency theory also favours boards to be comprised of majority of outside directors from the similar logic.

Stewardship theory (Davis and Donaldson, 1997) suggests that depth of knowledge, commitment, access to current operating information and technical expertise are important requirements enabling a company to be run effectively. Prescriptions from Stewardship theory are hence mostly opposite to those based on the assumptions of Agency theory. Hence the implications on board structure include preference of insiders on the board rather than outsiders or independent directors. Since inside directors or executive directors are mostly involved in the day to day operations of the firm and are also associated with the firms for longer periods of time, their understanding of the firms business and its environment is superior than the outside directors and so they can make better informed decisions. Outside directors will lack knowledge, time and resources to

monitor management effectively. Also inside directors tend to take decision with a long-term view considering their association with the firms (Donaldson and Davis, 1991). Similarly researchers on Stewardship theory consider dual leadership structure of the board instead of separating the roles of board chair and CEO. It is argued that the economic performance of a firm increases when power and authority are concentrated in a single executive (i.e. a dual CEO / Chairman), who is not distracted by external non-executive directors.

From the perspective of the resource-based theory (Penrose, 1959; Barney, 1991; Wernerfelt, 1984), the board of directors of a firm is considered an essential link between the firm and the resources that it needs for a superior performance. Boards are thus viewed as a potentially important resource for the firm considering its links with external environment. The ability of the board to provide links to critical resources has been considered important in fulfilling its role in strategic planning and implementation (Zahra and Pearce, 1989). Key resources for boards can provide access and which are reported in literature include - information, capital, links to key suppliers, customers and other significant stakeholders. The links that directors have with the firm's environment can be used in obtaining financial resources needed for effective restructuring, or restructuring expertise (Pearce and Zahra, 1991). These links are directly related to Board diversity measured in terms of Board size, the number of outside directors, and the number of outside directorships ('interlocks') each individual Board member holds in other organizations both within the industry and outside (Dalton et al, 1998b; Zahra and Pearce, 1989). The characteristics of the board such as size, diversity and director interlocks are expected to be linked to the effectiveness of the board, and thus associated positively with performance.

The managerial hegemony theory holds that most complex modern organizations boards mainly play a passive or rubber-stamp role and manager in reality control these corporations, because they have the requisite expertise, time and resources to really control what happens in corporations. The boards are assumed to be dominated by the management and hence are ineffective in alleviating Agency conflicts (Herman, 1981). According to this theory, the board's lack of attachment is a result of management's control over the selection of outsiders on the board, which is said to induce the co-optation of compliant directors, who are expected to rubber-stamp management's policies (Wolfson, 1984). Directors, for the fear of jeopardizing board seat and its associated benefits, refrain from overt criticism of management's behaviour. Thus, boards are depicted as ineffective governing institution due to outside directors' lack of independence from the management (Kosnik, 1987).

Literature Review and Hypotheses

In the economic and strategic management literature, boards are considered as the institutions to mitigate the effects of Agency problem existent in the organizations. Empirical literature on board of directors pertains to finding the linkage between some characteristics of the board to a measure of firms' performance. Van-Ees and Postma (2002) describe an input-throughput-output model of corporate performance as affected by board characteristics. According to this model, board characteristics influence the strategic decision-making and task performance of the board, which in turn influence corporate performance. However, Hermalin and Weisbach (2001) point out toward the problem of endogeneity in such a relationship. As per them such empirical studies are plagued by the problem of most variables of interest being endogenous. That is the structure of the board itself is likely to be influenced by the performance of the firm.

The evidence linking characteristics of board of directors and their relation to board effectiveness and performance can be classified into three distinct groups, based on the variables considered in these studies:

- Board Demography: This includes variables related to the composition of the board such as size, independence, presence and structure of committees, leadership structure, diversity and tenure
- Board Ownership and Remuneration: This evidence is related to studies on board ownership, CEO and board remuneration.
- Board Activity: The evidence in this group relates to actual decision-making process of the board and the variable included here are board meeting frequency, attendance and director interlocks etc.

In the following discussion, the literature relating the individual characteristics of the board, which are usually considered in isolation, is reviewed and relevant hypotheses presented. The approach in formulating hypotheses in this study is to take the dominant theoretical foundation as the base in case there are conflicting results in the existing research. Hence the hypotheses developed in this section are based on the Agency theory perspective and Resource based view, as most of the existing research has similar assumptions. The idea is to start with these assumptions, and if the data did not support the

hypotheses, to explain the same with alternative theoretical assumptions.

Board Size

In the economic and strategic management literature, boards are considered as the institutions to mitigate the effects of Agency problem existent in the organizations. As boards are considered to be large decision-making groups, size can affect the decision-making process and effectiveness of the board. Ideal size of the board has been an issue of debate over the years. There are extreme variations in board size across countries. The average board size of a British company in 1996 was 7, where as, on the other extreme some of the Japanese companies were having around 60 directors on their boards (Balasubramanian, 1997).

There is mixed evidence in the empirical literature linking board size to corporate performance. One group of researchers predicts board size to have a positive association with firm performance (Pearce and Zahra, 1992), the other group a negative relationship (Yermack 1996; Eisenber et al., 1998; Hermalin and Weisbach, 2001) and yet another group and non-linear or an inverted 'U' shaped (Vafeas, 1999; Goilden and Zajack, 2001). Bigger boards will have representation of people with diverse backgrounds and thus expected to bring knowledge and intellect to the board. Size is thus assumed to be associated with the breadth of perspectives in the planning process, presence of more outsiders, who foster more careful decision-making policy in firms since the reputation cost if the firm fails is likely to be high in comparison with their private benefit if a project turns out to be profitable. On the flip side larger groups also suffer from a problem of diffusion of responsibility or social loafing, wherein individuals discount the likelihood that others will detect their poor contributions. Based on the above review, it is, hypothesized that:

H1: Board size has a positive influence on firm performance for smaller boards and negative influence for larger boards.

Board Independence

An important feature of board of directors in most countries is the presence of independent or outside directors. Apart from bringing in rationality in appraising board performance, as resource-rich individuals, outside directors bring valuable information, connections, and resources to the firm. On the other hand inside directors are considered as an important source of firm-specific information and their inclusion in the board can lead to a more effective decision-making process (Rosenstein and Wyatt, 1997).

There is ample evidence in favour of outsiders on board in the financial literature, which associates percentage of outside directors with lower probabilities of paying greenmail, lower probability of adopting poison pills, enabling board to perform monitoring function in case of a powerful CEO etc. Proportion of outsiders is also found to influence the process of CEO selection (Borokhovich, 1996) and it is more likely that an outsider is selected as CEO in case of firms with a majority of outside directors. Rosenstein and Wyatt (1990) found that the addition of an outside director on the board resulted in positive abnormal returns. Lee et. al. (1992) found that boards that have majority of outside directors performed better than those dominated by insiders on returns to shareholders. Director share ownership is found to moderate the relationship between the composition of the board and firm financial performance (Hambrick and Jackson, 2000; Rosenstein and Wyatt, 1997). Furthermore, Dalton et al. (1998), and Hermalin and Weisbach (2001) report no relationship between board composition and a firm's financial performance based on either review or meta-analysis of earlier empirical findings in this area.

H2: The proportion of independent directors has a positive association with firm performance

CEO Duality

CEO duality (also referred to as combined leadership in literature) refers to a board leadership structure wherein one individual holds the positions of board chairman and the CEO. As per one school of thought, CEO duality is considered as an inappropriate way of designing one of the most critical power relationships in the board. According to this school of thought, if CEO also holds the board chair, it will result in concentration of power within the board and then it is very likely that the CEO takes decisions in his own self interest rather than considering shareholder value creation in mind (Jensen, 1993; Coles et al. 2001).

The advantages of CEO duality include providing a check and balance to the CEO's self interests and enhancing the effectiveness and independence of the board. The disadvantages are divided authority, costs of potential rivalry between the heads, added bureaucracy and information transfer costs (Kwok, 1998). Despite limited empirical evidence, duality has been blamed, in many cases, for the poor performance and failure of firms to adapt to a changing environment. However, Baliga et al (1996) report of insufficient evidence to show that firms opting for independent leadership out-perform the firms with CEO-duality. There is contrasting evidence on the issue of CEO duality, which is also an important issue of board structure (Rechner and Dalton,

1991; Donaldson and Davis 1991).

H3: Presence of CEO duality (position of CEO and board chair being occupied by same individual) has a negative influence on firm performance. (Alternatively, firms having CEO duality would under-perform firms that do not.)

Institutional Investors and Nominee Directors

Empirical evidence does not show direct linkage on the presence of institutional nominees on board and its effect on corporate governance but there are studies on role of institutional shareholders. Institutional shareholders are considered as powerful outsiders that are able to encourage risky restructuring decisions and to prevent managerial efforts to preserve the status quo (Hill and Snell, 1989). Research from a resource dependence perspective has also emphasized that outside institutional investors play a crucial role in providing the firm with the resources needed to survive and function efficiently (Pfeffer, 1972; Pfeffer & Salanick, 1978; Wagner et al, 1998).

Financial institutions, which are government controlled in India, control a large amount of equity in most Indian firms. They are also significant lenders to most companies. On account of these they have their representatives nominated in many Indian companies' boards. The directors are privy to unpublished price-sensitive information and this leads to a conflict of interests in case they represent institutions, which have equity exposures. It is thus hypothesized that presence of such directors on company boards would affect the decisions made in favour of long term shareholder value maximization and thus would contribute adversely to firm performance.

H4: Presence of nominee directors representing financial institutions is negatively associated with firm performance. (Alternatively, firms having nominees of financial institutions on their boards would under-perform firms that do not have such nominees.)

Executive Compensation

There are several studies relating to CEO and Executive compensation and firm performance. Murphy (1985), based on study of 461 executives in a panel of 73 firms during 1964-1981, found that managers' remuneration was positively related to stock market performance. The study was based on linear regression of the change in the logarithm of total compensation to firm stock performance and firms' sales growth. Mehran (1995) analyzed the relationship between compensation structure and firm performance and found that firm performance (proxied by Tobin's q and return on assets) was positively related to the percentage of executive compensation that was equity based and to the percentage of equity held by managers. Most companies in India pay only a sitting fee to the non-executive directors for attending board and committee meetings. The Companies Act has prescribed an upper ceiling for the sitting fee paid to the non-executive directors. Some companies do offer performance-linked bonuses to non-executive directors.

H5a: Executive directors' remuneration is positively related to firm performance.

H5b: Linking non-executive director compensation to some measure of performance is positively related to firm performance. (Alternatively, companies which have non-executive director remuneration linked to some measure of performance outperform the ones that do not.)

Board Meeting Frequency and Attendance

Board meeting frequency is considered to be an important determinant of board activity and hence contributing to firm performance (Vafeas, 1999). But there are conflicting views regarding the effect of board meetings on firm performance. One view suggests that board meetings are beneficial to shareholders (Conger et al., 1998). According to this view board-meeting time is an important resource in improving effectiveness of a board. It is assumed that the directors in boards that meet more frequently are more likely to perform their duties in accordance with shareholders' interests. The other conflicting view maintains that board meetings serve as a fire-fighting device rather than as a proactive measure for giving direction on policy mattes. This is also because almost invariably CEO's set the agenda for board meetings and the outside directors who often don't interact with each other fail to discuss and exchange ideas without any prior homework. Vafeas (1999), however, maintains that firms use board meeting as effective governance mechanisms and it is much easier and less costly for a firm to adjust the frequency of its board meeting to attain better governance than to change the composition of the board.

H6: Number of board-meetings in a year and attendance at these meetings as a proxy for board activity are positively associated with firm performance.

Extent of Directorate Networks

Usually the outside directors hold directorships in a large number of companies. Though the code of corporate governance in India does not limit external directorships by directors, it recommends that a director should not be a member in more than 10 committees or act as chairman of more than five committees across all

companies in which he is a director. Outside board memberships of directors are often referred to as directors 'social capital' (Geletkanycz, 2001). Empirical evidence shows that external ties of the directors play a critical role in shaping strategy, as well as overall firm performance (Eisenhardt and Schoonhoven, 1996; Geletkanycz and Hambrick, 1997). Directors' networks give the following strategic benefits to firms:

- Help to reduce the level of uncertainty surrounding external resource dependencies
- Provide greater access to strategic information and opportunities
- Confer important legitimacy and status benefits

Directors having large number of directorship are considered resource-rich individuals, which bring valuable information, connections, and resources to the parent organizations. It is also argued that the directors holding directorships in a large number of companies are not able to devote their time and effort in effective strategic planning and monitoring of one company (Harris and Shimizu, 2004). Combining the two argument it is hypothesized that:

H7: The extent of directorate networks is positively related to firm performance at a lower level while negatively at a higher level

Research Design and Methodology

This paper attempts to integrate all board characteristics and other governance, industry and firm characteristics in one holistic model of firm performance. Such a model enables the examination of the tradeoff involved among the choice of board characteristics as Agency control mechanisms. The study takes shareholder value maximization as the sole purpose of the corporation and an Agency theory perspective, that firms employ various mechanisms to align the interests of managers with shareholders and the hypotheses are developed with this basic view.

It is maintained in this paper that the characteristics of board of directors are often complementary to each other and also are influenced by the presence and effectiveness of other mechanisms of corporate governance. For example, the relation of board of directors to corporate performance would depend on the ownership structure of the firm as well as the legal environment of the country in which the firm operates. Also the relationship between one board characteristic variable and firm performance would again depend on the presence and intensity of the other board characteristic variables. For example a firm may decide to alleviate Agency problems by either increasing the number of independent directors on its board or by splitting the position of board chairman and CEO. In a board dominated by majority of independent directors, it is more probable that the board would like to split the position of chairman and CEO. Also, the effect of duality on performance would also be different for a board dominated by inside directors as compared to one with majority of independent directors.

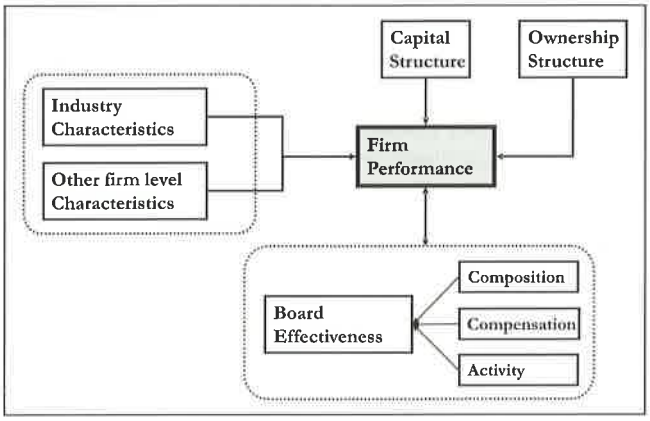

Figure I : The Conceptual Governance Model of Firm Performance

Similar is the case with board meetings. Following a poor performance, a firm may decide to either change board composition by bringing in more outsiders on board, or decide to split the chairman and CEO roles, or just make the board meet more often and take an active part in strategic management of the firm. A firm may also take a decision that involves a combination of the above mechanisms. Thus it becomes all the more important to study the board characteristic variable in conjunction with each other rather than in isolation to gauge their effect on performance. Further, presence of external governance mechanisms such as capital and ownership structure would moderate the influence of board characteristics and performance and should be controlled for in the model. The paper develops an empirical model of firm performance based on the conceptual model as given in Figure 1. As the problem of endogeneity is found to be an important methodological problem by many of the researchers a simultaneous equations approach is attempted to counter this problem.

Variable Description

The variables used are broadly classified into three distinct classes - the dependent variables of firm performance, the independent variables of interest and control variables. The control variables are introduced in the model to improve the overall predictive power of the model. These variables are used to explain the variation

in corporate performance not explained by governance variables. The variables are as described below:

Dependent Variables for Firm Performance

The measures of firm performance used in the literature can be broadly classified as the accounting based (Profitability, ROE, ROCE, EVA etc.) and market based (Shareholder returns, MVA, Market to book value ratio, Tobin's Q). These have been alternatively used by empirical researchers in this area (Kaplan and Reishus, 1990; Mehran, 1995; Rosenstein and Wyatt, 1997; Vafeas, 1999; Coles et al., 2001). EVA, MVA and Tobin's Q appear to be most promising indicators of firm performance considering shareholder value creation as the main purpose. In this paper one accounting based measure (ROCE) and one market based measure of performance (MV/BV) has been taken to see if market perceptions of board effectiveness variables significantly affect valuation. This measure of firm performance is also important in the sense that it represents the value the investors put on the firms shares above the total value of the assets of the firms and thus represents investor confidence, which in turn is one of the indictors of the effectiveness of the corporate governance mechanisms of the firm.

Return on capital employed (ROCE) has been taken as the ratio of net profit after taxes earned by the firm during the year under review and the average total capital employed during the year. In case of market to book value ratio, the market value of equity is calculated by multiplying the average closing price per share by the number of shares outstanding. The book value of the equity is obtained by adding equity capital and reserves and subtracting the revaluation reserve. Since the concern here is the long-term value creation to the shareholder, the short-term fluctuations in share prices have been avoided by taking average of daily closing prices during the last quarter of the year under consideration as the average market price of the share.

Independent Variables of Interest

Board Size:

Board size refers to the number of sitting directors in the company's board. The corporate governance section in the annual reports of listed companies mentions the names of the directors of the firm at the end of the financial year and also the changes taken place in the board during the year. A variable representing square of board size is thus included in the regression model, to check for presence and significance of any non-linearity in this relationship.

CEO Duality:

A dummy variable is used for the presence of CEO duality in the board of a company. The dummy variable assumes a value of 1 if the company has CEO duality, that is, in cases where the position of CEO and board chairman is held by the same individual. In case a particular board does not have a chairman, then also the variable assumes a value of 1. This is under the assumption that in such cases the CEO would be the most powerful individual on the board and the conditions would be similar to one in which the CEO-chair position is joint. In cases of fully non-executive board where both chairman and CEO are not there the variable CEO duality takes a value 0.

Board Independence:

The variable board independence represents the number of independent directors on the board as a percentage of board size. Most of the companies also report the nominees of financial institutions on the boards as independent directors. But for our purpose we have excluded such directors while arriving at the number of independent directors. These directors represent institutions, which are either major shareholders or major lenders to the firm and hence cannot be treated as independent directors.

Intensity of Directorate Network:

Intensity of the directorate network is defined as the average number of external directorships per director. The external network of the directors is expected to bring in access to information and other resources to the firm. However, it is proposed in this study that if the directors' network extends too much it may limit the time and effort the directors can put in the strategic management and control of the firm. Thus a squared term is included to examine if the variable has diminishing effect on performance after certain level.

Number of Board Meetings:

The variable represents the number of board meetings held during the year under consideration. A squared term of this variable is also included in the model to account for any non-linearity in the relationship with firm performance.

Attendance at Board Meetings:

This variable represents the average number of directors attending the board meetings during the year, expressed as a percentage of total number of directors. It is thus the average attendance at the board meetings. If 'N' board meetings were held for a particular firm during the year, and if Ai is the percentage attendance at the ith meeting, then the value of the variable attendance is calculated as ÓAi/N. Attendance of alternate directors in case of companies which had such directors was also considered while calculating the

value of average attendance.

Executive Directors' Remuneration:

The variable for this is the total remuneration per executive director of the firm. This is arrived at by dividing the total remuneration paid to the executive directors (in Rs. Lakh) by the number of executive directors.

Non-executive Directors' Remuneration:

Non-executive directors' compensation plan has been captured by the use of a dummy variable. In case of non-executive directors, a dummy variable is used, which assumes a value of 0 if a company pays only sitting fee to the directors. The dummy variable assumes a value of 1 for the companies who, in addition to paying sitting fees, either pay a commission on profits or have a component in the remuneration that is linked to some measure of performance.

Presence of Nominee Directors:

This characteristic of the board is also captured by a dummy variable. The dummy variable assumes a value of 1 if a particular board has at least one nominee director representing financial institutions. In other cases the dummy variable assumes a value of 0.

Control Variables

Firm Size (Murphy, 1985), R&D Intensity (Kotabe, 1990; Pearl, 2001), Advertizing and Marketing Intensity (Andras and Srinivasan, 2003), Fixed Assest Intensity, Financial Leverage and Extent of Public Shareholding are introduced as control variables to control for the effects on non-governance variables. Also, since industry effects explain typically between 17 to 20% of firm performance (Rumelt, 1991; Powell, 1996), to control for these affects, the firms were divided into 13 broad industry groups. All diversified companies were clubbed into one industry type and industries where there were only up to 3 companies were clubbed together in others category. Dummy variables for these industry groups were introduced while running the regression analysis.

Sample Selection

The data for financial performance of firms and other control variables were taken from the 'Prowess' database of the Centre for monitoring Indian Economy (CMIE). The data on board characteristics of listed firms were collected from the annual reports of companies. In India, from the year 2000-2001 onwards, the listed companies were required to disclose important information on board characteristics (viz. CEO duality, memberships of other boards, proportion of non-executives, compensation, and presence of board committees) and board activity in a separate section on corporate governance in their annual reports. However, in the introductory phase the compliance rate was poor and not many companies had included this information in their annual reports, and the companies which had made the disclosure was also partial and incomplete due to lack of definitional clarity from the side of the regulator. Hence, only two years' data was available, that is 2001-2002 and 2002-2003. There were overall 300 companies, which were common across the two years.

Of the target 300 companies, many companies had data missing for one or more variables included in this study, these companies were excluded from the sample. This finally resulted in a set of 228 companies. This sample was subjected to two screening criteria that eliminated financial institutions and banks as well as public sector companies considering the regulated market in which these companies operate in India. This finally resulted in a sample of 195 firms.

Multivariate regression model of firm performance was developed based on the conceptual model as presented in Figure 1. However, since some variables in the model were suspected to be endogenous, a simultaneous equations approach was employed. It was hypothesized that while board characteristics had a bearing on performance of the firms, performance of the firm itself may precipitate changes in the board. For example, a poorly performing firm may induct more outside directors on the board and cut down on executive remuneration and a better performing firm may pay higher remuneration to its executive directors. Also, boards of poorly performing firms may meet more often during the year to discuss the poor performance as a fire fighting mechanism (Vafeas, 1999). Similarly larger boards might require meeting more often to arrive at decisions to mitigate the problems associated with decision making in bigger groups.

However, since the practice of alteration in boards in India is not very common, only 'executive director compensation' and 'number of board meetings' were considered to be endogenous variables. The system of simultaneous equations as described below assumes that the performance variables (that is, MV/BV and ROCE), 'Executive director compensation' and 'Number of board meetings' are endogenous:

1. ***Firm performance = f(Variables of interest, Control variables, Industry dummies)***
2. ***Executive director compensation = f(Firm performance, firm size, CEO duality, Industry dummies)***

3. *Number of board meetings = f(Firm performance, board size, board independence, CEO duality, Industry dummies)*

However, before resorting to a simultaneous equations model, the system was tested to check whether the simultaneity problem was at a significant level. It is reported in literature that using a simultaneous equations approach in case where problem of simultaneity is not significant can result in estimators that are consistent but not efficient (Gujarati, 1995). Hausman Specification test (Hausman, 1976) was used to detect the presence of simultaneity in the model. It was concluded that there was no severe simultaneity bias in the model. The model was thus treated to be totally exogenous and an Ordinary Least Square (OLS) regression method was employed in all further analyses. In the absence of longitudinal data, the regression was run on the cross-section of 195 firms for the year 2001-2002 and the same was repeated with the data from 2002-2003 to check for temporal stability of the model.

The overall model was checked for presence of multicollinearity of variables by examining the tolerance and variance inflation factors (VIF) of the variable for the overall model for 2002-2003. The collinearity statistics are given in the appendix. Only the squared terms of the variable were found to be correlated at a significant level. Presence of heteroscedasticity was not a problem in the data set considering that the sample consisted mainly of bigger firms (Average sales of Rs.1454 crore in 2001-2002 and Rs.1675 crore in 2002-2003) and hence large variations in firm characteristics were not present. However, the presence of heteroscedasticity was ruled out using White's test. (Cross products of variable were not taken as the number of variables was large)[1].

Results and Discussion

The sample of 195 companies represented 4% of the total number of listed companies. However, these companies accounted for almost 30% of the total sales of all the listed companies taken together and also accounted for 38% of the total market capitalization in the year 2002-03, thus representing the companies having a powerful impact on the overall Indian economy. Other key characteristics of the sample, for the years 2001-2002 and 2002-2003, are presented in Table I. The detailed descriptive statistics is presented in the appendix.

There were 65 firms, which either had combined position of CEO and board chair or had no board chair, while 130 firms had separate positions. The number of firms was similar for both the years under consideration. It was found that the firms with CEO duality outperformed the firms without it on both market to book value ratio and return on capital employed. The number of firms having at least one nominee of a financial institution on their boards in 2001-2002 was 75 and it reduced to 71 firms in the same sample in 2002-2003.

Table I: Key Characteristics of the Sample

Parameter	2001-2002	2002-2003
Number of firms	195	195
Mean Sales (Rs. Crores)	1454.06	1675.48
Mean Market Capitalization (Rs. Crores)	1719.94	1617.03
Mean MV/BV	1.97	1.64
Mean ROCE (%)	20.19	21.11
Firms with CEO duality	65	65
Firms having at least one nominee of FI on board	75	71
Firms having non-executive director compensation linked to performance	86	92
Firms with fully non-executive boards	11	9
Mean board size (No. Of directors)	9.56	9.71
Mean percentage of independent directors	50.59	50.27
Intensity of directorate network (Mean directorships per director)	4.91	4.63
Mean number of meetings in a year	6.45	5.97
Mean attendance at board meetings (%)	75.35	76.03
Mean total remuneration per executive director (Rs. Lacs)	50.72	60.49
Mean public shareholding (%)	22.16	21.51

[1]White's test is considered a superior test for detecting heteroscedasticity as it does not rely on the assumption of normality and also does not require testing each dependent variable separately. The test statistic being nR2 which asymptotically follows a Chi square (χ^2)distribution with degrees of freedom equal to the number of regressors in the auxiliary regression. 'n' is the sample size and R^2 is the coefficient of regression for the auxiliary regression.

$n R^2 \sim \chi^2$

Auxiliary regression is the regression between the squared residuals from the original equation and the original regressors, squares and cross products of the regressors of the original equation.

An independent sample t-test showed that firms, which had nominees of financial institutions on their board (Dummy variable takes a value 1 for such companies), had performed poorly on both the performance measures as compared to firms, which did not have such nominees. Another t-test for independent samples showed that companies that had non-executive director remuneration linked to some measure of performance outperformed the ones that did not. The results of t-test are presented in the appendix.

The results of the overall regression model are presented in Tables II and III. The summary regression output presented here does not report the coefficients and their significance level for the industry dummies as they were used to improve overall explanatory power of the model and are not much relevant to the discussions here.

The regression results did not provide support to Hypothesis-1 as the coefficients of the both the variables 'board size' and 'board size squared' was statistically insignificant, thus, implying that number of directors on boards is not related to corporate performance for large Indian firms. This also corroborates an earlier finding in the Indian context (Dwivedi & Jain, 2005) The result could be explained by the fact that Indian corporate boards are comparatively larger (Average board size >9.5 for the present sample) compared to the British and U.S. boards, from where most of the empirical evidence comes. Apart from the context difference, it is very much evident that researchers who have found a positive relationship between board size and performance would have examined companies with smaller boards, that is, boards that are not so large as to diminish their decision making abilities.

Similarly, there is no evidence in favour of hypothesis 2. This result suggests that Stewardship theory is better able to explain the relationship between board independence and corporate performance than Agency theory. An Agency theory viewpoint would have preferred to have more outsiders (independent directors in case of India), as these directors would have monitored the management better. However, in Indian context as family or promoter ownership is much higher compared to Anglo-Saxon countries from where the evidence supporting Agency theory comes.

Table II: Overall Regression Model for 2001-2002

	Dependent Variable MV/BV			Dependent Variable ROCE		
	Coefficient	t-statistic		Coefficient	t-statistic	
(Constant)	-1.055	-0.253		4.221	0.145	
Firm Size (log(Sales))	0.466	1.912	**	0.297	0.175	
Advt & Mktg. Intensity	0.263	2.359	**	1.046	1.347	*
R&D Intensity	0.160	0.602		-1.670	-0.899	
Fixed Asset Intensity	-0.006	-1.553	*	-0.061	-2.393	***
Financial Leverage	-0.076	-0.681		-0.664	-0.858	
Board Size	-0.340	-0.796		-0.378	-0.127	
Board Size Squared	0.013	0.615		-0.010	-0.073	
Board Independence	-0.018	-1.383		-0.037	-0.405	
Presence of CEO Duality	1.295	2.729	***	7.494	2.264	**
Extent of Directorate Network (EDN)	0.446	1.779	*	4.296	2.456	***
EDN squared	-0.044	-2.177	**	-0.311	-2.224	**
Number of meetings	0.161	0.377		2.272	0.762	
Number of meetings squared	-0.026	-1.014		-0.193	-1.089	
Percentage Attendance	-0.004	-0.252		-0.033	-0.278	
Presence of Nominee Directors	-1.013	-2.114	**	-3.051	-0.912	
Executive Director Remuneration	0.006	2.380	***	0.049	2.731	***
Non_exec Director Remuneration	0.856	1.901	**	6.212	1.978	**
Public Shareholding	-0.031	-1.577	*	-0.110	-0.803	
R2		0.450			0.382	
Adj. R2		0.345			0.264	
F-Statistic		4.302			3.250	
Significance		<1%			<1%	

Asterisks indicate following significance levels

*** 1%
** 5%
* 10%

Table III: Overall Regression Model for 2002-2003

	Dependent Variable MV/BV			Dependent Variable ROCE		
	Coefficient	t-statistic		Coefficient	t-statistic	
(Constant)	-1.172	-0.408		-3.028	-0.120	
Firm Size (log(Sales))	0.218	1.313		0.540	0.369	
Advt & Mktg. Intensity	0.292	3.540	***	1.197	1.644	*
R&D Intensity	0.114	0.755		-1.724	-1.295	
Fixed Asset Intensity	-0.002	-1.049		-0.074	-3.705	***
Financial Leverage	-0.003	-0.053		-0.416	-0.807	
Board Size	-0.300	-0.939		0.935	0.332	
Board Size Squared	0.012	0.782		-0.049	-0.373	
Board Independence	-0.013	-1.183		-0.163	-1.691	*
Presence of CEO Duality	0.797	2.195	**	9.319	2.912	***
Extent of Directorate Network (EDN)	0.477	2.557	***	3.238	1.969	**
EDN squared	-0.044	-2.635	***	-0.349	-2.368	***
Number of meetings	-0.099	-0.231		2.193	0.582	
Number of meetings squared	-0.005	-0.171		-0.213	-0.828	
Percentage Attendance	0.009	0.769		-0.034	-0.329	
Presence of Nominee Directors	-0.561	-1.475	*	-0.382	-0.114	
Executive Director Remuneration	0.004	2.317	**	0.044	2.926	***
Non_exec Director Remuneration	0.552	1.731	*	6.483	2.307	**
Public Shareholding	-0.024	-1.686	*	-0.150	-1.209	
R2		0.435			0.437	
Adj. R2		0.327			0.330	
F-Statistic		4.046			4.086	
Significance		<1%			<1%	

Asterisks indicate following significance levels

***	1%
**	5%
*	10%

There is strong evidence against hypothesis 3 relating to CEO duality. The variable CEO duality is found to have a positive association with both accounting based and market based measures of performance. This finding supports the Stewardship theory viewpoint on the effect of CEO duality. Having the same person occupy the board chair and CEO position, leads to concentration of power and authority. Since such person in most of the firms that have dual positions is usually from the founding family, he sees himself as an extension of the firm. This leads to decisions, which are more directed towards enhancing firm value and hence leads to superior performance.

There is little support for hypothesis 4 in case of MV/BV performance measure. This shows a negative association of presence of institutional investor on performance. As directors are privy to unpublished price-sensitive information, this leads to a conflict of interests in case they represent institutions, which have equity exposures. As hypothesized that presence of such directors on company boards would adversely affect the decisions made in favour of long term shareholder value maximization and thus would contribute adversely to firm performance.

The regression results strongly support hypothesis 5a and 5b relating to executive and non-executive director compensation. The coefficients of the variable 'Executive Director Compensation' are positive and statistically significant in case of both performance measures and the relationship is stable over both the financial years. Similarly, the coefficient of the variable 'Non-executive Director Compensation' are positive and significant at 5% level in case of both performance variables, except in case of MV/BV ratio for the year 2002-2003 where it is significant at 10% level. This supports the viewpoint that remuneration systems that link managerial remuneration with some measure of firm's financial performance may motivate managers to take decisions that result in an increase in that particular financial performance measure.

The multivariate regression results do not support hypothesis 6, as coefficients of both the variables 'Number of meetings' and 'Percentage Attendance' were insignificant in all the cases. As an ex-post analysis we also tried to investigate if the boards which met more often were also the ones which were large and hence had to meet more often to arrive at decisions. The data for 2002-2003 supported this argument. The mean

value of board meetings during 2002-2003 was about 6 and the mean board size was 9.7. However, companies whose board met more than 8 times a year had an average board size of 11.2.

As per hypothesis 7, the extent of directorate networks is positively related to firm value at a lower level while negatively at a higher level. The extent of directorate network is represented by the variable 'Outside Directorships per director', while a squared term was introduced to check for the presence of non-linearity or inverted 'U' type relationship as hypothesized. The results show support for this hypothesis. The coefficients for the variable are positive while the coefficients for the squared terms are negative and both are significant for both the performance measures. The level of significance is, however, different in different cases. This result supports the resource-based view of the firm. As per this view, a firm's performance is contingent upon external resources and environmental contingencies. Boards of directors are viewed as links to external environment and the firm, thus bringing linkages and resources to a firm resulting in reduced environmental uncertainty and reduced transaction costs associated with environmental interdependency.

The extent of directors' external network is thus expected to bring in access to information and other resources to the firm. However, if the directors' network extends too much it may limit the time and effort the directors and put in the strategic management and control of the firm. Thus, beyond a certain level, the extent of directors' external networks may hamper directors' availability in board deliberations. The significant negative coefficient of the squared term supports this argument.

Most of the control variables have their expected signs except for the R&D expenditure, whose coefficients were insignificant. This, however, could be due to the fact that R&D expenses as a percentage of sales in Indian companies are too low (For our sample the mean value is only 0.5% and a median value of 0.1%, also 67 firms did not spend on R&D at all). Public shareholding was used as a control variable to take care of ownership concentration. It was assumed that a higher public shareholding could be a proxy for fragmentation in shareholding. Since fragmentation in ownership leads to dispersion of control from the shareholders, it contributes negatively to performance. The negative sign of the coefficients of this variable in all four cases reinforces this fact. However, this coefficient is significant only in case of MV/BV ratio at less than 10% level. This indicates that the level of public shareholding influences the market perceptions more than the accounting performance of the firms.

Conclusions and Scope for Future Work

The results showed a great deal of disagreement from the earlier research that focuses on European companies and US and takes an Agency theory viewpoint. The major factors influencing the performance of the firms were CEO duality having a significant positive impact on performance, presence of FI nominees having a significant negative impact on performance, the extent of directorate networks having a significant inverted 'U' shaped relationship with performance, the proportion of non-executive directors having a weak positive relationship with performance. The effect of board size, proportion of independent directors, number of board meetings and attendance at these meetings, however, could not be ascertained with confidence in overall model.

Figure II shows the empirically validated conceptual model of firm performance showing only the variables that were found to have significant influence on firm performance. A plus sign on the line showing relationship of a particular variable with firm performance shows that the variables contributes positively to performance while a minus sign indicates the converse. In case of industry effects, since industry dummies were used, the effect of dummy variable had a varied influence on performance. It may be noted, however, that the model is only indicative and does not show the significance levels of relationship of these variables with firm performance and the same are given in detail in the regression results. Also there is some variation in the relationships with the measure of firm performance used.

Most of the evidence supported the Stewardship theory and the Resource based view of the firm, in view of the peculiarities of Indian governance system. Indian industry is dominated by diversified family run businesses (Business Today, 1999). An earlier study showed that 80% of the 500 biggest companies in India were family owned (Dutta, 1997). It may be noted that in our sample of 195 firms, 79 firms belonged to the top 50 business houses and 132 belonged to large business groups. Piramal (1996), in a study of Indian business groups, also showed domination of most firms by business groups and families. As high promoter shareholding and promoters having representation on boards characterized the firms in the sample, Stewardship theory view supported the positive relationship of presence of CEO duality and proportion of non-executive directors with corporate performance. The non-linear positive relation of extent of directorate network with performance also supported the resource

dependence theory view of corporate boards.

The study gives a fresh view to the phenomenon of board effectiveness from the perspective of an emerging economy where corporations often have family dominated boards. Apart from generating new evidence on the relationship with respect to the Indian context, this study develops a holistic model of firm performance using a limited number of variables that affect board performance. The study also points out towards the complementarities of various theories in understanding the determinants of board effectiveness. Our results show that no one theory in isolation can explain the relationship of various board-attributes to its effectiveness. Alternative theoretical explanations help us understand the contribution of various attributes of a decision making body to its effectiveness. For example, while Agency theory explains the positive association of directors' remuneration with corporate performance, Stewardship theory explains the relationship between board independence and duality with corporate performance and Resource-based theory explains the association of the directorate network with corporate performance.

This research has policy level implications in evaluating the effectiveness of the regulations and codes of corporate governance relevant to board structure and practices. The corporate governance codes in India were introduced in the year 2000 and are still in an evolutionary phase. The codes lay a great emphasis on the structure and functioning of the board of directors. The present codes are based, to a great extent, on the Anglo-Saxon codes, without considering the peculiarities of Indian companies and their legal, regulatory, and institutional environments. Lack of research exploring the linkage of board effectiveness and corporate performance prevented us from evaluating various recommendations of the code in the Indian context.

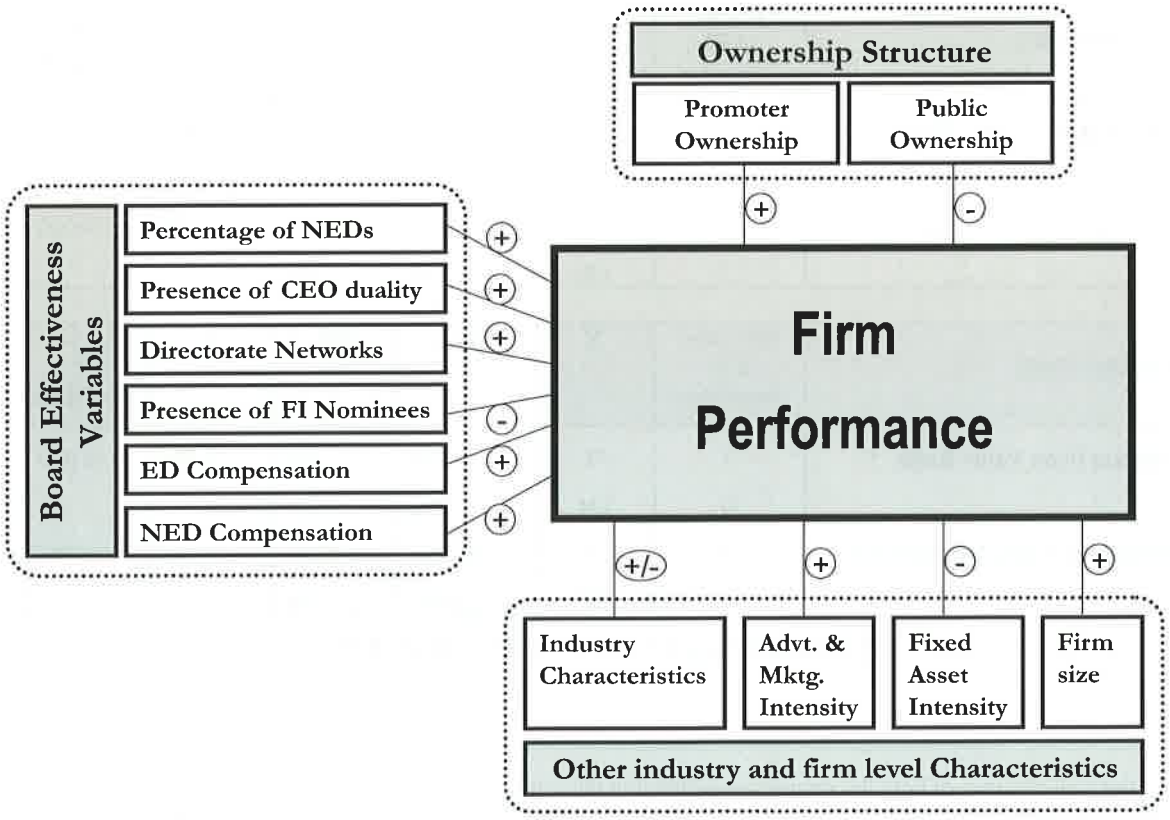

Figure II: The model of firm performance showing influence of variables

Appendix

Independent Sample t-test for Presence of CEO Duality [2]

For 2001-2002	Presence of CEO Duality	N	Mean	Std. Dev.	t	Sig. (2-tailed)
Market-Book Value Ratio	1	65	3.078	4.990	2.607	0.011
	0	130	1.415	1.774		
Return on Capital Employed	1	65	26.117	30.945	2.198	0.031
	0	130	17.229	14.494		

For 2002-2003	Presence of CEO Duality	N	Mean	Std. Dev.	t	Sig. (2-tailed)
Market-Book Value Ratio	1	65	2.165	3.256	1.839	0.070
	0	130	1.380	1.568		
Return on Capital Employed	1	65	26.084	25.640	2.135	0.035
	0	130	18.620	16.545		

Independent Sample t-test for Presence of FI Nominees

For 2001-2002	Presence of FI Nominees	N	Mean	Std. Dev.	t	Sig. (2-tailed)
Market-Book Value Ratio	1	75	0.785	1.049	-5.047	0.000
	0	120	2.709	3.961		
Return on Capital Employed	1	75	13.528	11.805	-4.039	0.000
	0	120	24.356	25.286		

For 2002-2003	Presence of FI Nominees	N	Mean	Std. Dev.	t	Sig. (2-tailed)
Market-Book Value Ratio	1	71	0.849	1.370	-4.399	0.000
	0	124	2.096	2.584		
Return on Capital Employed	1	71	15.983	15.721	-2.965	0.003
	0	124	24.042	22.006		

Independent Sample t-test for NED Compensation

[2] An unequal variance of both the samples is assumed in the t -test. The significance levels are generated by the software itself. The calculated t_{exp} value is obtained by the following formula. Where S_{AB} is the pooled variance of the two samples, n_A and n_B is the sample size of sample A and B respectively. X_A and X_B are the means of two samples.

$$t_{exp} = \frac{|\bar{X}_A - \bar{X}_B|}{S_{AB}\sqrt{\frac{1}{n_A} + \frac{1}{n_B}}}$$

For 2001-2002	NED_Comp. Linked to Performance	N	Mean	Std. Dev.	t	Sig. (2-tailed)
Market-Book Value Ratio	1	86	3.040	4.496	3.800	0.000
	0	109	1.124	1.441		
Return on Capital Employed	1	86	27.526	27.071	4.083	0.000
	0	109	14.405	14.023		

For 2002-2003	NED_Comp. Linked to Performance	N	Mean	Std. Dev.	t	Sig. (2-tailed)
Market-Book Value Ratio	1	92	2.365	3.021	4.153	0.000
	0	103	0.996	0.994		
Return on Capital Employed	1	92	27.915	22.049	4.585	0.001
	0	103	15.028	16.416		

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