INTRODUCTION:

Corporate Governance has become a global phenomenon in recent times. The stages of development of Corporate Governance and its systems synchronize with the evolution of the economy, corporate structure, political and legal developments of a country. In India, studies about Corporate Governance have been focusing on its divergent issues and varying methodologies. Prior to the economic reforms of 1992, the development of Corporate Governance in India was slow, but post liberalization rapid strides have been made in its development to converge with global practices. This paper extends the existing literature on Corporate Governance, firstly by constructing a Corporate Governance index and then finding its relationship with financial performance using cross sectional and panel regressions. The study also covers other mechanisms of Corporate Governance and Board structures.

This study is organized as follows.

Chapter 1 describes the evolution of Corporate Governance, its theoretical cum regulatory framework and development of indices. Chapter 2 provides a detailed discussion on the relationship between Corporate Governance and financial performance with a focus on index based studies. It also details studies on Board structures and other mechanisms of Governance. Chapter 3 details the methodology used in the construction of governance index and sub indices. It provides details of data and usage of statistical and econometric techniques with Tobin’s Q, MVBV and ROA as proxies for financial performance. Methodologies related to other mechanisms of CG have also been included here. Chapter 4 discusses the results of the study and compares it with the findings of other researchers. The data analyses contain individual year wise and combined analyses of five years. The regressions include multiple, pooled, fixed effects, random effects and dynamic panel data models with different control variables. Chapter 5 provides the conclusions and points out the implications of the study with directions for further research.
CHAPTER 1: Introduction to Corporate Governance:

This chapter covers the Origin and development of Corporate Governance; Definition, Theories and Models of Corporate Governance; Development of regulatory framework; Issues in Corporate Governance; Corporate Governance indices and firm performance; Development of Corporate Governance in India and Indian model of Corporate Governance.

1.1 Definition of Corporate Governance:

There is no universal definition of Corporate Governance. In this regard the objective of studying various definitions is to come to an understanding of what constitutes good governance, quantification of the attributes and its implications on firm performance. The following definition captures the current essence of Corporate Governance.

The Financial Times Lexicon (2010) defines Corporate Governance as “How a company is managed, in terms of the institutional systems and protocols meant to ensure accountability and sound ethics. The concept encompasses a variety of issues, including disclosure of information to shareholders and board members, remuneration of senior executives, potential conflicts of interest among managers and directors, supervisory structures, etc”.

1.2 Theories of Corporate Governance:

Various theories have been developed describing the various phenomenon of Corporate Governance and some of the important theories which form the basis of this study are Agency theory, Stewardship theory, Resource dependence theory, Stakeholder Theory, Managerial Hegemony Theory etc.,

Agency theory: This theory is about the conflicts that arise between the Principal and the Agent because of differences in the goals resulting in additional costs to the firm thereby eroding the wealth of the firm and its shareholders.

Stewardship theory: Stewardship theory has a more social-oriented perspective and non-economic assumptions on Corporate Governance. The dominant non-monetary motive, which directs managers to accomplish their job, is their desire to perform
excellently because their reputations are at stake (Davis et al, 1997; Burkart, Gromb, & Panunzi, 1997).

**Resource dependence theory:** This theory focuses on the resources, the directors can provide to the firm for its effective operations and profitability.

**Stakeholder Theory:** Stakeholder is a term originally introduced by the Stanford Research Institute (SRI) referring to “those groups without whose support the organization would cease to exist”.

5) **Managerial Hegemony Theory:** Managerial hegemony theory states that CEOs and Management dominate the boards of directors resulting in passive roles for NED and independent directors (Mallete & Fowler, 1992).

### 1.3 Models of Corporate Governance:

Depending upon the business practices, customs and culture, the process of Corporate Governance differs from country to country. Besides, the variety of capitalism in which countries are embedded with, explains the considerable variations in Corporate Governance models around the world. The important models are

1) The Anglo American model
2) The German Model and
3) The Japanese Model

The Indian Model is a hybrid model based on the Anglo American and German models.

### 1.4 Issues in Corporate Governance:

The issues in Corporate Governance are ethical, Accountability and efficiency.

### 1.5 Corporate Governance in India

The Corporate Governance history in India can be distinctly bifurcated, based on the initiation of economic reforms in the year 1992, into two distinct historical time periods: pre1992 era and post 1992 era.

**Current Indian model of Corporate Governance:**

It is a hybrid model based on Anglo-American and German models. Unlike the dual class system prevalent in US, single class is the dominant model prevailing in India.
This model can be best described by grouping businesses in India in the following way.

- Highly dispersed shareholding and professional management (L&T, ICICI Bank, Infosys).
- The founder, his family, and associates closely hold the company and exercise maximum control over the activities of the company (Tata group-Birla group, Reliance group, Wipro etc).
- Public sector with government ownership and professional management (SBI, ONGC, BHEL, etc).
- Multinational corporations (ABB, HUL, Siemens, etc).

1.6 Development of Corporate Governance regulatory framework in India:

The regulatory framework is mainly modeled on the lines of Cadbury committee report of 1992 and Sox Act of 2002. Indian CG laws for listed firms are enunciated by the Companies Act, 1956 and SEBI’s listing agreements, primarily the Clause 49.

Development of Corporate Governance Indices:

All over the world an objective assessment of Corporate Governance practices is by developing metrics. Metrics in the form of an index facilitates better assessment and monitoring of the Corporate Governance practices of a firm.

A Corporate Governance index, in its simplest form, is a tool summarizing in a measurable form, the various Corporate Governance factors which influence the performance of a firm. It is an indicator to benchmark the Corporate Governance quotients of companies, and through it the capital markets of countries.

CHAPTER 2: Literature Review

The literature review covers studies about developed and emerging markets. Section 2.1 details firm level cross country studies about the relationship between Corporate Governance and firm’s financial performance (LLSV, 2002; Amman et al., 2011 and others). Section 2.2 covers country/firm specific studies about the relationship between Corporate Governance index and financial performance (Gompers et al., 2003; Brown & Caylor, 2006; Aggarwal & Williamson, 2006; Garay & Gonzales,
2008 and others). These studies elaborate the development process of CG indices, using both binary and weightage methods. The positive relationship between Corporate Governance and financial performance is well documented in these Studies. This section also covers other mechanisms of Corporate Governance such as promoters’ holding, issue of ADR/GDRs etc. Section 2.3 deals with studies by Yermack (1996); Singh and Harianto (1989); Elsayed (2007); Bliss (2011); Jensen and Meckling (1976); Dalton et al., (1998) and others about Board structures comprising of Board size, CEO Duality and Board independence. Section 2.4 covers studies about internal and external mechanisms of Corporate Governance. Section 2.5 deals with studies about Corporate Governance in India. From the point of Index based studies, there have been two studies so far (Mohanty, 2003 & Balasubramanian et al., 2010). Board structure studies in India include Jackling and Johl (2009); Kaur and Gill (2008); Mayur and Saravanan (2008); Lange and Sahu (2008); Dwivedi and Jain (2005). Studies about promoters’ holding by Sarkar and Sarkar (1999 and 2005); Kumar (2005); Pattanayak (2008) have been included in this section.

**CHAPTER 3: Research methodology:**

Section 3.1 discusses the need for the present study. Sections 3.2, 3.3 and 3.4 discuss respectively, the objectives, hypotheses and data description. Section 3.5 discusses the methodologies adopted and parameters considered in the computation of governance index.

**3.1 Need for the present study**

**a) Corporate Governance and financial performance:** A number of studies to explore the relationship between Corporate Governance, as measured by index and firm performance have been conducted both in developed countries and in emerging markets. However, in India on this aspect, only two studies-1) Balasubramanian et al., (2010) covering the year 2005-06 and 2) Mohanty (2003) covering the year 2002, have been carried out. Therefore, there is a dearth of index-based studies on Corporate Governance in India. Mohanty’s (2003) study is on general Corporate Governance attributes with a focus on stakeholders (Customers, society, employees and others). It does not cover any of the regulations of clause 49 which came into force in the year 2000. The study of Balasubramanian et al., (2010) is a survey based one. This kind of study has its limitations. Moreover, this was conducted prior to the
amendment to clause 49 of the listing agreements which came into force from 1st January, 2006. The amendment reflects many of the provisions of the post Enron’s SOX Act, 2002. As these studies cover only one year period, dynamics of the relations between Corporate Governance and firm value using panel data could not be examined.

Apart from the Corporate Governance Index based study, this study covers other individual attributes of Corporate Governance mechanisms and financial performance.

b) Board size, Board independence and CEO duality and firm values: Some research studies in Indian context about board size, board independence and CEO duality are; Jackling and Johl’s (2009) study covering a period of one year (2005-06) about large companies; Lange and Sahu’s (2008) study covering a period of 3 years from 2005 to 2007 of NIFTY 50 companies; Kaur and Gill’s (2008) study covering a period from 2001 to 2006; Dwivedi and Jain’s (2005) study covering a period of 5 years from 1997 to 2001. The findings of these researchers are mixed. Hence there is a need to revisit the issue.

c) Promoters’ holding and firm performance: The ownership structure influences the Corporate Governance and firm values. Khanna and Palepu (1999) and Pattanayak (2008) report that the insider ownership has positive and significant impact on firm value. Sarkar and Sarkar (1999, 2005); Saravanan (2009) investigate the relation between promoters’ shareholding and its impact on firm values. The first study of Sarkar and Sarkar reports a non-linear relationship between promoters’ holding and firm values. On the other hand, in their second study, they find that promoters’ holding has no impact on firm values in case of low growth firms while it has positive impact on firm values for high growth firms. Saravanan (2009) studied the Corporate Governance characteristics of Family Owned (not less than 51% shareholding) and Non-Family Owned businesses of India. He documents that value of the firm as measured by Tobin’s Q is not affected by type of the firm. The results of these studies are ambiguous. Therefore, it warrants closer scrutiny.

d) Other governance mechanisms: Corporate Governance is affected by the size and sector of the firm and listing on foreign bourses. There have been few studies in India on these aspects. Kumar (2005) and Pattanayak (2008) have used sales as a proxy for
firm size in their study about ownership structures and firm values. Mohanty (2003), Sarkar and Sarkar (2000) have used log of assets as a control variable. To the best of my knowledge, the impact of GDR/ADR on firm valuation has only been examined by Balasubramanian et al., (2010). Again no study has been conducted on the non-linear relationship between CGI and Financial performance in India. The present study aims to examine these issues.

There is a boom in the Indian Economy. Business firms are pursuing growth strategies acquiring foreign firms. In the recent past there has been financial crisis in US and Europe affecting the economies of many countries of the world, including India. All these have a profound impact on the Governance processes, warranting a fresh study.

3.2 Objectives of the study

a) To examine the relationship between Corporate Governance index and firm values/ performance of companies as measured by Tobin’s Q, MVBV and ROA.

b) To ascertain whether the relationship between Corporate Governance index and firm values is linear or not.

c) To assess the impact of Board structures comprising of Board size, Board independence, CEO Duality on firm values as measured by Tobin’s Q.

d) To explore the relation between sales, assets and margin on firm performance/ valuation.

e) To investigate the relationship between promoters’ holding and financial performance as measured by Tobin’s Q.

f) To examine the differences in valuation/ performance across manufacturing and services sectors as measured by Tobin’s Q, MVBV and ROA.

g) To ascertain the differences in performance/ valuation between large tangible and small tangible asset intensive companies.

h) To examine the impact of sales differentials on firm performance/ valuation.

i) To examine the differences in firm values/ performance between the firms which have issued ADRs/GDRs and those which have not.
3.3 Hypotheses

The following hypotheses have been evaluated:

**H⁰¹:** There is no relationship between Corporate Governance index and financial performance as measured by Tobin’s Q, MVBV and ROA.

**H⁰²:** There is no relationship between sales and financial performance as measured by Tobin’s Q, MVBV and ROA.

**H⁰³:** There is no relationship between assets and financial performance as measured by Tobin’s Q, MVBV and ROA.

**H⁰⁴:** There is no relationship between margin and financial performance as measured by Tobin’s Q, MVBV and ROA.

**H⁰⁵:** There is no relationship between promoters’ holding and financial performance as measured by Tobin’s Q, MVBV and ROA.

**H⁰⁶:** The relationship between Corporate Governance index and financial performance measured by Tobin’s Q is not linear.

**H⁰⁷:** There is no relationship between the Board size and firm values as measured by Tobin’s Q.

**H⁰⁸:** The number of independent directors in the board composition does not impact firm performance measured by Tobin’s Q.

**H⁰⁹:** CEO duality has no impact on firm value.

**H¹⁰:** There is no difference in financial performance/ valuation across sectors.

**H¹¹:** There is no difference in firm valuations/ performance between large tangible asset companies and small tangible asset companies.

**H¹²:** The impact of sales differential on financial performance/ valuation is non-existent.

**H¹³:** Margin differentials cast no influence on valuation/ performance of the firms.

**H¹⁴:** There is no difference in firm valuations/ performance between firms which have issued Depository receipts and which have not.
3.4 Data description and sample

The study comprises of BSE 100 index companies. The sample period is five years from 2004-2008. The data required to construct Corporate Governance index and board structure and composition were obtained 1) Company web sites 2) SEBI EDIFAR site 3) NSE/BSE web site and 4) Commercial agencies like Report junction, Cygnus etc. The financial data used in the study has been obtained from the data base of Centre for Monitoring of Indian Economy (CMIE). The data consisted of sales, assets, and promoters’ holding, EBIT, book value of debt and Market price of equity shares. For the purposes of uniformity all financial data is for the month ending December of the particular year. Some of the companies were eliminated from the sample due to non-availability of data. The number of companies that formed the sample, ranged from 78 to 100. The number of companies in the years 2004, 2005, 2006, 2007 and 2008 were 78, 83, 91, 96 and 100 firms respectively. In all, 448 firm-years observations were available.

3.5 Methodology adopted in analyzing the relationship between Corporate Governance index and financial performance

3.5.1 Construction of Corporate Governance Index

This has been done in three stages. First stage consisted of the selection of parameters which form the basis of Governance index. Second stage consists of assigning binary values-‘1’ for positive factor of governance and ‘0’ otherwise. Finally computation of the index scores for each year for each firm over the 5 year period was done.

3.5.1.1 Selection of parameters for this research study

21 parameters have been considered in this research study for the computation of overall Corporate Governance index. The reasons for selecting 21 parameters are:

a) The reporting of these parameters in the Annual reports has been consistently available which facilitated panel data analysis.

b) They are uniform across all the sectors and all firms.

The 21 parameters have certain commonality with the parameters considered by researchers like Balasubramanian et al., (2010) who have considered 49 parameters in their survey and some of them are privy in nature or not mandatory. In the
Governance index constructed by Mohanty (2003) almost all the parameters are not the reporting requirements of clause 49 of the listing agreement, old and revised. Perhaps this is the reason for the same not being considered in the survey of Balasubramanian et al., (2010). These 21 parameters have been categorized into the following four sub-indices.

1 Board structure index

B1-Attendance-75% and above; B2-Board meetings 5 and above; B3-Remuneration/compensation committee composed of fully independent directors; B4-Nomination committee exists; B5-Attendance of each Director is indicated in the last Annual General Meeting.

2 Auditing systems index

A1-Totally independent audit committee; A2-Audit committee attendance-75% and above; A3-Audit committee meetings 5 and above; A4-No Qualified audit report .ie no adverse remarks from the statutory Auditors regarding financial statements.

3 Investor management & Disclosures index

I1- The composition of investors’ Grievance committee consists of independent directors; I2-Firm puts annual/quarterly financial statements on web; I3-Share holding pattern indicated; I4- Not accused of insider trading; I5-Provision of postal ballot facility; I6-No significant changes are made in accounting policies impacting sales and profits

4 External Control Mechanisms index

E1- Listing on foreign bourses including its parent company; E2- Existence of Whistle Blower policy; E3- Issuance of ESOPS to its employees and Directors; E4-Whether Management Discussion and analysis report is a part of annual report; E5-Whether disclosures of materially significant related party transactions have been indicated; E6- Whether disclosure of contingent liabilities, which are likely to impact on the future, is made

Each firm was studied for Corporate Governance practices based on the above mentioned parameters. Score of 1 was assigned in case the company was adopting a particular parameter or the reply is affirmative, if not 0 score was assigned. Thus each
firm could score a maximum of 21 and a minimum of 0 depending on the firm’s Corporate Governance practices. This formed the basis for overall Corporate Governance index of a firm. Thus the overall Corporate Governance index is the sum of values of each sub index.

BRD-IND + ADT-IND + INV-IND + ECM-IND=5+4+6+6=21

Based on this method Corporate Governance indices have been computed for each of the firms belonging to the BSE 100 index of the Bombay stock exchange for each year over a five year period from 2004-2008.

3.5.2 Estimation methods: The correlation between dependent variables Tobin’s Q, MVBV and ROA have been low/medium. Hence separate multiple regressions using these dependent variables have been conducted. The independent variables considered in the multiple regressions are CGI index, Log sales, Log assets, Margin and promoter’s holding. The regressions also include sales, asset, margin, GDR and sector dummy variables. Sector dummy is set to one if the firm belongs to manufacturing sector and ‘0’ otherwise. Assets have been divided into two groups based on the median value of assets. Asset dummy is set to one if the firm falls in the above median asset group and ‘0’ otherwise. Similarly based on the median values of sales firms are divided into two groups. Sales dummy is set to one if the firm falls in the above median sales group and ‘0’ otherwise. Based on the median values of margin (EBIT/Sales) firms are divided into two groups and Margin dummy is set to one if the firm falls in the above median margin group and ‘0’ otherwise. Companies which have issued ADRs/GDRs /FCCBs have been identified. GDR dummy is set to one if the firm has issued depository receipts and ‘0’ otherwise.

To analyze the non linear relationship of CGI, multiple regressions of Tobin’s Q on CGI index, CGI square, Log sales, Log assets, margin and promoter’s holding have been conducted. To analyze further the association between CGI and Tobin’s Q, companies were sorted on the basis of the CGI score. The mean CGI score was used to divide the companies into two groups; one above mean and other below the mean. To analyze the relationship between the components of Board structures and firm performance, regressions of Tobin’s Q on Board size, Board independence, CEO duality, Log sales, Log assets, margin and promoter’s holding have been run.
Diagnostic test of regression consisted of multi-collinearity, heteroscedasticity and autocorrelation. Multicollinearity was diagnosed using correlation and variance inflation factor. VIF values less than 10 have been considered (Myers, 1999). The standard errors were calculated using white’s heteroskedasticity-consistent standard errors. The hypotheses were tested using usual t-test.

3.5.2.1 Panel regression: Panel data refers to the combination of time series and cross-sectional observations. Panel regressions include Pooled, Fixed effects, Random effects and Dynamic panel data estimations.

3.5.2.2 Pooled regression: Pooled regression analysis combines time series for several cross-sections and facilitates to test the impact of a large number of dependent variables within the framework of a multivariate analysis (Schmidt, 1997). It is extensively used in Corporate Governance and other studies (Kumar, 2005; Black et al., 2010).

The equation for pooled regression

\[ Y_t = \alpha + \beta_1 (\text{log sales}) + \beta_2 (\text{log assets}) + \beta_3 (\text{Margin}) + \beta_4 (\text{Pro hol}) + \beta_5 (\text{CGI}) + \beta_6 (\text{Sales dum}) + \beta_7 (\text{Asset dum}) + \beta_8 (\text{Mrgn dum}) + \beta_9 (\text{GDR dum}) + \beta_{10} (\text{Sect dum}) + \epsilon_t \]

(Tobin’s Q = \alpha + \beta_1 (\text{log sales}) + \beta_2 (\text{log assets}) + \beta_3 (\text{Margin}) + \beta_4 (\text{Pro hol}) + \beta_5 (\text{Log brd siz}) + \beta_6 (\text{Log brd ind}) + \beta_7 (\text{CEO duality}) + \epsilon_t \)

Where: \( \alpha \) = intercept; \( \beta_1, \beta_2, \beta_3, \ldots, \beta_{10} \) are the slopes of the corresponding independent variables; \( \epsilon_t \) = error term; \( Y_t \) = dependent variable (Tobin’s Q/MVBV/ROA)

3.5.2.3 Fixed and Random Effects

In the classic view, a fixed effects model treats unobserved differences between individuals as a set of fixed parameters that can either be directly estimated, or partialled out of the estimating equations. In a random effects model, unobserved differences are treated as random variables with a specified probability distribution. Statistically, fixed effects are always a reasonable thing to do with panel data (they always give consistent results) but they may not be the most efficient model to run. Random effects will give better p-values as they are a more efficient estimator, so one
should run random effects if it is statistically justifiable to do so. Random effects methods also typically have less sampling variability than fixed effects methods. In general, random effects is efficient, and should be used (over fixed effects) if the assumptions underlying it are believed to be satisfied.

The equations for fixed effects model /random effects model are similar to the pooled regression model except for the error term $e_t$ which is substituted with $\mu_i + u_{it}$. Where $\mu_i$ is the individual error component and $u_{it}$ is the combined time series and cross-section error component. However for the selection, between Random and Fixed effects models, Hausman specification test needs to be conducted after running both these tests. In addition to this Breusch and Pagan Lagrangian multiplier test for Random effects are also run.

Estimation with the panel data has been undertaken by testing the null that all intercepts are equal. If this null is accepted then the data is poolable. If the null is rejected, Hausman test is applied. If the null is not rejected, random effects are used. The equality of the intercept can be tested by using Lagrangian multiplier test for random effects developed by Breusch and Pagan. The null here is that there is no random effect (Kennedy, 2008).

### 3.5.2.4 Dynamic panel data:

Arellano, Bond, and Bover developed one and two step general methods of moments (GMM) estimators for panel data analysis. GMM is usually robust to deviations of the underlying data generation process to violations of heteroskedasticity.

**CHAPTER 4: Results and discussions**

#### 4.1 Analysis of results of Corporate Governance and Firm Performance

**CGI and financial performance:** The analyses of the results and inferences about the relationship between Corporate Governance Index and Financial performance are based on the cross sectional and panel regressions. The cross sectional regressions are that of Tobin’s $Q$/MVBV/ROA on CGI index, Log sales, Log assets, margin and promoter’s holding. The regressions also include sales, asset, margin, GDR and Sector dummy variables. Unreported $t$-values are based on White’s heteroskedasticity-consistent standard errors. ***, (**) and (*) indicate significance at 1%, (5%) and (10%) level.
Table 4.1: Summary Table of coefficients of variables for the year 2004

<table>
<thead>
<tr>
<th>Variables</th>
<th>Tobin’s Q</th>
<th>MVBV</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log sales</td>
<td>0.892**</td>
<td>2.122</td>
<td>0.119***</td>
</tr>
<tr>
<td>Log assets</td>
<td>-1.689***</td>
<td>-3.491***</td>
<td>-0.139***</td>
</tr>
<tr>
<td>Margin</td>
<td>-0.625</td>
<td>4.378</td>
<td>0.340***</td>
</tr>
<tr>
<td>Pro hol</td>
<td>0.018</td>
<td>-0.051</td>
<td>0.001</td>
</tr>
<tr>
<td>CGI</td>
<td>0.413***</td>
<td>0.806**</td>
<td>0.006</td>
</tr>
<tr>
<td>Sales dum</td>
<td>0.814*</td>
<td>0.814</td>
<td>0.061*</td>
</tr>
<tr>
<td>Asset dum</td>
<td>0.306</td>
<td>0.844</td>
<td>-0.008</td>
</tr>
<tr>
<td>Mrgn dum</td>
<td>0.353</td>
<td>-0.745</td>
<td>0.091***</td>
</tr>
<tr>
<td>GDR dum</td>
<td>-0.457</td>
<td>-1.205</td>
<td>-0.033</td>
</tr>
<tr>
<td>Sect dum</td>
<td>-2.468***</td>
<td>-3.246</td>
<td>0.042</td>
</tr>
<tr>
<td>cons</td>
<td>4.601</td>
<td>10.734</td>
<td>0.131</td>
</tr>
<tr>
<td>R Sq</td>
<td>0.5215</td>
<td>0.1539</td>
<td>0.7193</td>
</tr>
<tr>
<td>Adj R Sq</td>
<td>0.450</td>
<td>0.1246</td>
<td>0.5532</td>
</tr>
</tbody>
</table>

On similar lines, cross sectional regressions for the other four years of the study were conducted.

Panel regressions consisting of Pooled, Random effects and Fixed effects regressions were conducted separately for the three dependent variables. These regressions supplement the results of cross sectional regressions. Dynamic panel data estimations are also included in the same. The following table reports the summary of these regressions.

Table 4.2: Summary of panel data regressions for the years 2004-08 with Tobin’s Q as the dependent variable

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled regression</th>
<th>Fixed effects regression</th>
<th>Random effects regression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log sales</td>
<td>0.330**</td>
<td>0.465</td>
<td>0.343**</td>
</tr>
<tr>
<td>Log assets</td>
<td>-1.525***</td>
<td>-1.957***</td>
<td>-1.537***</td>
</tr>
<tr>
<td>Margin</td>
<td>0.605</td>
<td>0.521</td>
<td>0.382</td>
</tr>
<tr>
<td>Pro hol</td>
<td>0.021***</td>
<td>0.019</td>
<td>0.020***</td>
</tr>
<tr>
<td>CGI</td>
<td>0.255***</td>
<td>0.124</td>
<td>0.189***</td>
</tr>
</tbody>
</table>
On similar basis separate pooled, fixed effects and Random effects regressions have been run for MVBV and ROA. The results of Hausman and Breusch-Pagan tests indicate that the pooled regression model was found to be appropriate in the case of MVBV. Fixed effects model was found to be appropriate in the case of ROA. Final conclusions have been drawn considering the results of both cross sectional and panel regressions.

4.2: Results of regressions for different ranges of promoters’ holding

Further analysis of promoters’ holding showed that the coefficients of promoters’ holding is negative when the holding is between 0-40%, it is positive and significant when the holding is between 40-60%, and positive but not significant when the holding is between 60-100%. Sarkar and Sarkar (1999, 2005); Pattanayak (2008) found such type of changes for different levels of promoters’ holding.

4.3: Results of non-linear relationship of CGI

To analyze the non linear relationship of CGI, multiple regressions of Tobin’s Q on CGI index, CGI square, Log sales, Log assets, margin and promoter’s holding have been conducted. To analyze further the association between CGI and Tobin’s Q,
companies were sorted on the basis of the CGI score. The mean CGI score was used to divide the companies into two groups; one above mean and other below the mean. The results of the regression showed that coefficient values of CGI >mean were consistently significant and higher than the coefficient of CGI<mean and also they were not significant.

4.4: Relationship between Board Structure and Corporate Governance

This section deals with the analysis of board structures comprising of Board size, CEO duality and Board independence. In the first stage of analysis the results supported larger board size. Subsequent panel regressions showed an optimum range to be between 9 and 20, both inclusive. The results of the same are shown below.

Table 4.3: Summary of panel data regressions for the years 2004-08 with Tobin’s Q as the dependent variable

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled regression</th>
<th>Fixed effects regression</th>
<th>Random effects regression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log sales</td>
<td>0.576***</td>
<td>0.338*</td>
<td>0.482***</td>
</tr>
<tr>
<td>Log Assets</td>
<td>-1.108***</td>
<td>-0.952***</td>
<td>-1.047***</td>
</tr>
<tr>
<td>Margin</td>
<td>2.406***</td>
<td>2.750***</td>
<td>2.304***</td>
</tr>
<tr>
<td>Pro hol</td>
<td>0.004</td>
<td>-0.003</td>
<td>0.001</td>
</tr>
<tr>
<td>Log brd siz</td>
<td>0.796*</td>
<td>0.656</td>
<td>0.794*</td>
</tr>
<tr>
<td>Log brd ind</td>
<td>0.374**</td>
<td>-0.110</td>
<td>-0.014</td>
</tr>
<tr>
<td>CEO duality</td>
<td>0.049</td>
<td>0.482*</td>
<td>0.218</td>
</tr>
<tr>
<td>_cons</td>
<td>4.200***</td>
<td>6.015***</td>
<td>5.177***</td>
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<td>0.000</td>
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</table>

Hausman and Breusch-Pagan tests indicated the appropriateness of Random effects model. In the random effects regression, the coefficient of board size is positive and significant. The coefficients of board independence and CEO duality are not significant.

Summary of cross sectional and panel data regressions

H01: There is no relationship between Corporate Governance index and financial performance as measured by Tobin’s Q, MVBV and ROA
Relationship between CGI and Tobin’s Q: The relationship is found to be positive and significant in four out of five years of cross sectional regressions. In the random effects regression, it is found to be positive and significant. Based on this, it can be inferred that the relationship is positive.

Relationship between CGI and ROA: The relationship is found to be positive and significant in four out of five years of cross sectional regressions. It is found to be positive and significant in the fixed effects regressions. It implies that the relationship is positive.

As there is a significant positive relationship between Tobin’s Q/ROA and Corporate Governance, the null hypothesis (H01) that there is no relationship between Corporate Governance and Financial performance/firm values measured by Tobin’s Q/ROA is rejected. However in the case of MVBV the relationship is significantly not conclusive.

The findings of this study are in line with the following researchers who have conducted cross sectional studies: Gompers et al., (2003); Brown and Caylor (2006); Drobetz, Schillhofer and Zimmerman (2004); Bebchuk et al., (2009); Ammann et al., (2011). Black et al., (2006 Garay and Gonzalez (2008); Bai, Liu, Lu and Song (2004); Javid and Iqbal (2007). In the Indian context Balasubramanian et al., (2010) and Mohanty’s (2003).

In the case of Panel data studies, the findings are in line with Black et al., (2010-Korea); Ammann et al., (2011); Black et al., (2010-Brazil); Al-Haddad et al., (2011) etc.

However Bhagat and Bolton (2008) find a negative relationship between Governance score and ROA.

H02: There is no relationship between sales and financial performance as measured by Tobin’s Q, MVBV and ROA

Relationship between Sales and Tobin’s Q: In the panel data regressions the coefficients are positive and significant in the random effects model. In the cross sectional regressions it is positive and significant in two years out of five years. Thus it can be inferred that the relationship is positive and significant with respect to Tobin’s Q. Hence the Hypothesis is rejected.
MVBV: In the case of MVBV, in cross sectional regressions the coefficients are positive in four years but not significant. In panel data regressions the coefficients are negative but not significant. Based on this it can be said that there is a weak relationship between the two. Hence the hypothesis is not rejected.

ROA: In the case of ROA the coefficients are positive and significant in all the years of the study. In the case of Panel data regressions it is significant in all the three models. Based in this, it can be said that the relationship is positive and significant. Hence the hypothesis is rejected.

The findings of this study are in line with the findings of Saravanan (2009); Pant and Pattanayak (2008); Friedman (1953) and others. The results are not in confirmance with Morey et al., (2010) who find a negative relationship between MVBV and sales across all the years of their study.

H12: The impact of sales differential on financial performance/ valuation is non-existent*

Relationship between Sales dummy and Tobin’s Q: The coefficients are positive and significant in the years 2004, 2007 and 2008. It is positive and not significant in the other two years. Similar positive and significant relationship is observed in the random effects models. Hausman test and Breusch-Pagan test results indicate the appropriateness of random effects model. Based on this it can be said that the relationship between sales dummy and Tobin’s Q is positive and significant. Accordingly the hypothesis is rejected.

MVBV: In the case of MVBV the coefficients of sales dummy are positive but not significant in all the three models of panel data regressions. In the cross sectional regressions it is positive in all the years and significant in one year. Hence the hypothesis is not rejected.

ROA: In the case of the relationship between ROA and sales dummy it is positive and significant at 10% and 5% levels in the years 2004 and 2005 respectively. In the fixed effects model it is negative but not significant. Based on Hausman test, fixed effects model is appropriate. It can be inferred from this that there is no association between the two and hence the null hypothesis is not rejected.
**H0**: There is no relationship between assets and financial performance as measured by Tobin’s Q, MVBV and ROA

Relationship between assets and Tobin’s Q: The relationship is negative and significant in all the years of cross sectional regressions and in all the models of panel data regressions. Hence the hypothesis is rejected. The findings are consonance with Ammann et al., (2011); Aggarwal and Williamson (2006). Black, Kim and Jang (2006) attribute such negative relationship to the presence of intangible assets which are not recorded in the books. Bhagat and Bolton (2008) find an insignificant relationship between these two. The findings of this study are not in line with the findings of Balasubramanian et al., (2010)

MVBV: It is negative and significant in four years and positive and not significant in one year. In all the panel data regressions also the coefficients are negative but not significant. It can be inferred from this that there is no relationship between MVBV and assets. Hence the hypothesis is not rejected.

ROA: The coefficients are negative and significant in all the years of cross sectional regressions. It is negative and significant in all the models of panel data regressions. This implies that the relationship between assets and firm performance measured by ROA is negative. The hypothesis is rejected

**H11**: There is no difference in firm valuations/ performance between large tangible asset companies and small tangible asset companies*

Relationship between asset dummy and Tobin’s Q: The findings of the study show that the relationship between asset dummy and Tobin’s Q is positive but not significant in the entire cross sectional regressions except in the year 2008. Similarly in the case of panel data regressions it is positive but not significant in all the three models. Based on this it can be inferred that there is no relationship between the two. Hence the hypothesis is not rejected.

MVBV: It is positive and not significant in two years and negative and not significant in other years. It is positive and not significant in the pooled model. Hausman and Breusch-Pagan tests do not indicate the appropriateness of either fixed effects or random effects models implying the appropriateness of pooled model. The results in the pooled model being mixed, conclusive inference cannot be drawn. Hence the hypothesis is not rejected.
ROA: It is positive and not significant in four cross sectional regressions and in the other year it is negative but not significant. It is negative and not significant in the fixed effects models. The results of Hausman test indicate the appropriateness of the fixed effects model. Based on this it can be considered that there is no relationship between asset dummy and financial performance measured by ROA. The hypothesis is not rejected.

H04: There is no relationship between margin and financial performance as measured by Tobin’s Q, MVBV and ROA

Relationship between Margin and Tobin’s Q: The coefficients are insignificant indicating that there is no relationship between the two. Hence the Hypothesis is not rejected.

MVBV: The coefficients are insignificant implying that there is no relationship between MVBV and Margin. Hence the hypothesis is not rejected.

ROA: It is positive and significant in three out of five years of cross sectional regressions. It is positive and significant in the random and fixed effects model. Hausman test indicates the appropriateness of the fixed effects model. Hence it can be concluded that there is a positive relationship between ROA and Margin. Hence the hypothesis is rejected.

The results are in conformance with the findings of Kumar (2005); Phillipon (2010); Mukodim (2010) and Ammann et al., (2011).


Relation between Margin dummy and Tobin’s Q: The coefficients are positive but not significant in the entire cross sectional regressions except one year in which it is positive and significant at 5% level. Similarly it is found to be positive but not significant in the panel data models. Hence it can be inferred that there is no relationship between the two. The hypothesis is not rejected.

MVBV: The coefficients are negative and insignificant in all the panel data regressions. In cross sectional regressions the coefficients are insignificant. Hence the hypothesis is not rejected.
ROA: It is positive and significant in all the 5 years and also in all the panel data regressions. This shows that there is a positive relationship between ROA and Margin dummy. Hence the hypothesis is rejected.

H0: There is no relationship between promoters’ holding and financial performance as measured by Tobin’s Q, MVBV and ROA

Relationship between promoter’s holding and Tobin’s Q: The results of cross sectional regressions of Tobin’s Q on promoters’ holding show that except for the year 2004 the coefficients of promoters’ holding are positive and significant. In the year 2005, it is positive but not significant. In the panel data regressions the coefficient in the random effects model is positive and significant. Hausman test and Breussh-Pagan tests confirms the appropriateness of the random effects model. Based on this it can be inferred that the relationship between the two is positive. Hence the Hypothesis is rejected.

MVBV: Based on the cross sectional regressions and panel data regressions it can be said that there is no relationship between promoters’ holding and MVBV. Hence the hypothesis is not rejected.

ROA: Based on the cross sectional regressions and panel data regressions it can be said that there is no relationship between promoters’ holding and ROA. Hence the hypothesis is not rejected.

Demsetz and Lehn (1985) and Demsetz and Villalonga (2001) in their respective studies find ownership concentration and firm performance to be unrelated. Khanna and Palepu (1999) have found that promoters’ holding has a positive and significant impact on firm values. Sarkar and Sarkar (2005) found a positive and significant impact on firms in case of high growth firms and no impact on low growth firms. Pattanayak’s (2008) study provides evidence of the fact that with increase in promoter’s holding, the firm value initially increases, and then it declines.

H06: The relationship between Corporate Governance index and financial performance measured by Tobin’s Q is not linear.

In the cross sectional studies the assumption is that the relationship between CGI and Tobin’s Q is linear. However, additional analyses indicate that the relationship between the two is not non linear. Hence the hypothesis is not rejected.
Ho: There is no relationship between the Board size and firm values as measured by Tobin’s Q.

Based on the analysis of data, it is found that the relationship between larger board sizes (between 9 and 20) and Tobin’s Q is positive and significant. Hence the hypothesis is rejected.

In the Indian context, these findings are in line with Jackling and Johl (2009); Lange and Sahu (2008); Dwivedi and Jain (2005). The findings are not in line with the findings of Kaur and Gill (2008); Yermack (1996); Eisenberg, Sudgren and Wells (1998) and others. Bhagat and Black (2002); Mayur and Saravanan (2008) did not find any solid evidence on the relationship between board size and firm performance.

H0s: The number of independent directors in the board composition does not impact firm performance measured by Tobin’s Q.

Based on the analyses of cross-sectional regressions and panel data analysis, no significant relationship is found except for the year 2006. This implies that the proportion of independent directors does not influence firm valuations. Hence the hypothesis is not rejected.

These findings are in line with Kaur and Gill (2008); Lange and Sahu (2008); Balasubramanian et al., (2010). Findings of Jackling and Johl (2009) are in contradiction.

Dalton et al. (1999); Fosberg (1989); Bai et al. (2004), Bhagat and Black (2002); Klein (1998) find that the insider/outsider board proportion has no direct relationship to firm performance.

H0v: CEO Duality has no impact on firm value.

Based on the analyses of data of cross-sectional regressions and panel data regressions, it can be inferred that there is no relationship between CEO duality and firm valuations. Hence the hypothesis is not rejected.

This finding is in line with Ponnu (2008); Dalton et al. (1999); Berg and Smith (1978); Jackling and Johl (2009) and others. This is in contradiction to the findings of Jensen and Meckling (1976) who contend that CEO duality is detrimental to firm
performance as envisaged in the Agency theory. Bliss (2011) finds that CEO duality constrains board independence.

**H10:** There is no difference in financial performance/valuation across sectors.

Relationship between Sectoral Dummy and Tobin’s Q: The coefficients are negative in all the five years and negative and significant in one year. It is negative and significant in random effects regressions. The Hausman test is indicating the appropriateness of the random effects model. One can infer from this that the relationship between sectoral dummy and Tobin’s Q is negative, meaning that valuations of service sector firms measured by Tobin’s Q is relatively higher. The hypothesis is rejected.

**MVBV:** All the coefficient values are insignificant based on which it can be inferred that there are no differences in firm valuations across sectors. Hence the hypothesis is not rejected.

**ROA:** Coefficient values are positive and significant in the years 2005 and 2008. It is positive and not significant in the other years. It is negative but not significant in the fixed effects model. Hausman test confirms appropriateness of fixed effects model. This shows that Manufacturing firms have a better operating performance when compared to firms in the service sector with respect to this financial measure. Hence the hypothesis is not rejected.

**H14:** There is no difference in firm valuations/performance between firms which have issued Depository receipts and which have not.

Relation between GDR dummy and Tobin’s Q: The coefficients are insignificant, indicating that there is no relationship between the two in all the regressions. Hence the hypothesis is not rejected.

These findings are in line with the findings of Balasubramanian et al., (2010) in the Indian context; Black et al., (2010) in the Korean context. However these findings are contrary to the findings of Karolyi et al., (2006); Reese and Weisbach (2002) who show that firms which issued GDRs have positive firm valuations.

**MVBV:** It is negative and insignificant in four years. Based on Hausman and Breusch-Pagan tests both random effects model and fixed effects models are
inappropriate implying appropriateness of the pooled model. In the case of pooled model it is negative and significant. Hence the null hypothesis is rejected.

ROA: The coefficients are positive in 3 years and positive and significant at 1% level in one year. It is negative and not significant in 2 years and in the fixed effects model. Hausman test is indicating appropriateness of fixed effects model. Overall it can be said that there is no relationship between the two. Hence the hypothesis is not rejected.

*In order to draw overall conclusion hypotheses 2 and 12; 3 and 11; 4 and 13 have been taken together.

**Summary of Hypothesis testing: Tobin’s Q as Dependent Variable**

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Description</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>Random Effects</th>
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## Summary of Hypothesis testing: ROA as Dependent Variable

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<thead>
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<th>Hypotheses</th>
<th>Description</th>
<th>Cross-section</th>
<th>Fixed Effects</th>
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<tr>
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<td>2004: Not Rejected, 2005: Not Rejected, 2006: Not Rejected, 2007: Rejected, 2008: Not Rejected</td>
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CHAPTER 5: Findings and conclusions

Summary of Findings

This chapter provides the main findings and draws conclusions from the study:

1) The Corporate Governance Index is found to be positively related to Tobin’s Q which is line with the findings of the studies in developed and emerging markets, including India. The study reveals that there is a positive and statistically significant relationship between Corporate Governance Index and financial performance of Indian firms over a period of five years in both cross sectional regressions and panel data regressions. The results are also robust to different estimation methods. With respect to the financial measure of MVBV the relationship was found to be positive but not significant. However Balasubramanian et al., (2010) report the relationship with this financial measure to be positive and significant. In consonance with the findings of Brown and Caylor (2006), the Corporate Governance index is found to be positively and significantly related with ROA. The bifurcation of the firms on the basis of the mean values of CGI scores suggests that firms belonging to below CGI mean scores have no impact on firm valuations. This implies that there is a threshold level of governance score beyond which CGI contributes positively to firm valuation. In the Dynamic Panel Data estimations the lagged one value of Tobin’s Q is positive and significant and the coefficients of MVBV/ROA are negative and not significant.

2) The results show that the relationship between sales and Tobin’s Q is positive and significant. The relationship between sales dummy and Tobin’s Q is found to be positive and significant. This implies that firm valuations are relatively higher for those firms which have a higher amount of sales. In the case of relationship with MVBV, for both the variables of sales and sales dummy, it was found to be not significant. The relationship between sales dummy and ROA is positive but not significant. It can be interpreted that higher sales may not impact firm performance measured by ROA.

3) The relationship between assets and firm values show negative relationship with Tobin’s Q, indicating that firm valuations with lesser amount of assets are relatively higher. This could be due to unreported intangible assets in the
balance sheets or ‘e-capital’ (term coined by Stanford Economist, Hall, 1993). Further, while analyzing the differences in firm values of large and small tangible asset intensive companies with Tobin’s Q, the relationship was found to be not significant which underlines the impact of intangible assets. The relationship between asset/asset dummy and MVBV is not significant indicating that there is no relationship between the two. However in the case of assets the firm performance measured by ROA is negative and significant implying that firms having lower assets have higher firm performance measured by ROA.

4) The results show that the relationship between Margin/Margin dummy and Tobin’s Q is positive but not significant. In the case of MVBV also the relationship is not significant. The relationship with financial measure of ROA is positive and significant implying that higher margins of firms results in increase in returns on assets.

5) The study finds that there are no differences in firm valuations measured by Tobin’s Q between firms which have issued Depository receipts and those which have not. This is in line with the findings of Balasubramanian et al., (2010) in the Indian context. In the case of MVBV significant relationship is observed. In the case of ROA, the relationship is found to be positive but not significant implying that there are no differences in firm performance measured by ROA between firms which have issued the Depository receipts and which have not issued.

6) The overall results show that valuation of service sector firms in comparison to manufacturing is higher in terms of Tobin’s Q. However the firm valuations measured by MVBV and ROA show no significant relationship implying that there are no differences between the manufacturing and service sectors with respect to these financial measures.

7) The relationship between promoters’ holding and financial performance proxied by Tobin’s Q was found to be positive and significant at the overall level. However the segmented analyses shows that the relationship is negative when the holdings are between 0-40 percent and then turns positive and significant between 40-60 percent level and then positive but not significant at higher level.
This could be interpreted as being caused by two opposing influences, incentive alignment effect and entrenchment effect (Pattanayak, 2008).

8) Board of directors plays an important role in Corporate Governance. The study shows larger board size has a positive impact on firm valuations which is in consonance with the findings of Indian researchers like Jackling and Johl (2009). Further analysis showed an optimum board size ranging between 9 and 20, both inclusive, in the Indian context. Brown and Caylor’s (2006) study indicates a range of 6 to 15 as optimum. Overall, the results of this study reflect the nature of the environment in which firms operate in India whereby greater board size supports the resource dependence theory.

9) The proportion of independent directors in the board composition does not seem to influence firm valuations. According to Balasubramanian et al., (2010); Kaur and Gill (2008); Lange and Sahu; Sarkar and Sarkar (2005), greater board independence has no significant influence on firm valuations. While the resource dependency theory is valid in case of larger board size, it is not so with respect to independent directors being on the board. In contrast, the findings of Jackling and Johl (2009) indicate that greater board independence improves firm valuations.

10) The separation of duties of the CEO and board chairman has generated many discussions across the globe and India is no exception. The analysis of data shows that there is no relationship between CEO duality and firm valuations. According to Jackling and Johl (2009), “Given the uncertainty of India’s institutional transitions, the answer to the complex question about the impact of CEO duality/Non duality is not obvious”. This captures the essence of the findings. Chaine and Tohme (2009) find that CEO duality is beneficial when there is effective monitoring, thereby alleviating agency costs associated with CEO duality. Thus the notion of separating the roles in a manner consistent with agency theory is not supported.

Implications of the study

This study demonstrates the economic importance of the valuation effect of Corporate Governance. Investors can use these indices along with other information about the financial performance of firms for making investment decisions. The benefits of a
larger board sizes has some synergies and relevance to emerging economies, such as India. This will avoid overlapping of functions of directors in the operations of the various committees.

**Limitations of the study**

The results of this research study are subject to some limitations that should be taken into consideration when generalizing and interpreting the results.

1) CGI is a single measure of Corporate Governance and there is no unanimity in the construction of the Corporate Governance index. Hence the CG index suffers from some limitations.

2) Broader index incorporating CSR attributes would have provided better measure of Governance.

3) The sample size and period of the study are small.

4) Corporate Governance is influenced by external environmental factors such as industry structure, product market competition etc, which this study has not considered.

5) Studies in Corporate Governance are associated with endogeneity concerns. In order to overcome the problem, simultaneous equation method suggested by Bhagat and Bolton (2008) would have produced better results which have not been considered in this study.

6) Survey methods can capture some good governance practices which are not available in the public domain and these have been not considered in this study.

The research findings must, therefore, be interpreted in the light of the above limitations.

**5.4 Directions for further research**

1) Application of simultaneous equation method to study the relationship between CGI and firm values: By developing a system of simultaneous equations, where all control mechanisms are allowed to affect each other as well as Tobin’s Q, while at the same time Tobin’s Q is allowed to affect the choice of each
mechanism is a comprehensive system, which can improve the quality of regression results and control for possible endogeneity.

2) In India there have been no studies on Corporate Governance characteristics, idiosyncratic risk and corporate investment decision making. Research in this aspect assumes importance in view of the spurt in Mergers and Acquisitions activities in India.

3) In their study Gompers et al., (2003) have ranked the firms based on governance index values and found that investments in firms in the top decile group, which adopt better governance practices, have earned significant long-term abnormal returns per year in comparison to the investment in the firms in the lower decile group. A similar study on these lines will be fruitful.

4) The existence of a large number of family businesses in India warrants a further investigation regarding the role of independent directors.