

Corporate Governance and Firm's Value: An Empirical Analysis of Agri-input firms in India

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Abstract: *This study analyzes the effect of corporate governance variables namely Board size, Board composition and Board activity on the firm value Tobin's Q (TQ) of agri-input firms in India. The study is based on panel data collected from 64 randomly selected sample firms over the period from 2007 to 2011. Fixed Effect Model (FEM) and Random Effect Model (REM) were estimated to evaluate the effectiveness of corporate governance on TQ. The empirical results revealed that only Board size had significant and positive impact on TQ with coefficient of 0.037, while Board composition and Board activity did not show any affect on TQ.*

Keywords: Governance, Tobin's Q, Board size

I. Introduction

Corporate governance has been a topic of interest since last two decades. With the opening up of economies of countries, the concern for corporate governance has also spread to many developing countries. In the Indian context, globalization on one hand

made the world market accessible to Indian corporate sector, while on the other hand has intensified the competition in the domestic front with the advent of multinational firms (Neeraj and Arun, 2005). In this changed scenario, quality of governance has become a critical success factor for survival and a source of competitive advantage, improving the firm's performance and the ability of a company to raise funds from capital markets. It also affects the development and functioning of capital markets and exerts a strong influence on resource allocation. The extant literature on corporate governance, which is generally about large and listed firms in the US and UK, considers the relationship between corporate ownership structure, boards of directors composition and corporate performance. Though there is variation in corporate governance structures and systems across countries, the existing literature has remained largely confined to the United States, Europe, and Japan, where the governance systems are quite different from

those found in India and other transition economies.

India has the largest number of listed companies in the world, and the efficiency and well being of the financial markets is critical for the economy in particular and the society as a whole. It is imperative to design and implement a dynamic mechanism of corporate governance, which protects the interests of relevant stakeholders without hindering the growth of enterprises. The research however on corporate governance has remained in its infancy in India owing to the relatively opaque disclosure practices followed by Indian corporate sector (Goswami, 2000). Two cross-country studies published in 2003 have put India among the worst nations in terms of earnings capacity and management. Thus, more research on concrete measure of firm's performance resulting from corporate governance becomes important. Therefore, the aim of this paper is to estimate the effect of corporate governance on firm's value particularly with respect to agri-input firms in India.

II. Review of Literature

The adoption of corporate governance was stimulated by the belief that the economic crisis that hit the South East Asian stock markets in 1997-1998 was partly due to weak corporate governance in the region (Mobius, 2002). This resulted in governance reforms in the emerging markets to restore investor confidence by providing a secure institutional

platform on which to build an investment market (Monks and Minow, 2004). Therefore, the majority of prior studies have examined the association between corporate governance and firm performance using Tobin's Q as a proxy for firm performance (Beiner et. al., 2004; Sarkar and Sarkar, 2008). Some studies used both accounting and market measure to quantify performance. Drobetz (2003) used Stock Returns value and found positive relation between Corporate Governance and firm value and the expected stock returns. Bauer, et. al., (2004) used Net Profit Margin, ROE and Tobin's Q as performance indicators to analyze whether good corporate governance led to higher stock returns and enhanced firm value in Europe. Beiner et. al., (2004) used Tobin's Q and ROA for measuring performance of firms quoted at Swiss Stock Exchange. Bhagat and Bolton (2008) investigated the impact of corporate governance on operating performance of U.S. firms using ROA and Tobin's Q as performance measures. Balasubramanian et. al., (2009) used market-based measure Tobin's Q with corporate governance of Indian firms. Jackling and Johl (2009) used Tobin's Q and ROA as performance indicators for Indian firms. They investigated the relationship between governance structure and financial performance of Indian firms measuring governance with board size, proportion of outside directors, number of board meetings.

Some studies claimed that good corporate governance enhanced firm's performance (Brickley and James, 1987; Weisbach, 1988; Rosenstein and Wyatt, 1990; Byrd and Hickman, 1992; Brickley et. al., 1994; Hossain et. al., 2000; Chung et. al., 2003). Baysinger (1985) examined the effect on performance with changes in Board composition from 1970-1980 and found that firms with higher proportion of independent directors ended up with superior performance records at the beginning of the decade and on average, later in the period. Black (2006) found strong correlation between governance and market value both in OLS and in fixed effects regressions. There is a positive relationship between the proportion of inside directors and the market-based measure of firm performance (Kiel and Nicholson, 2003). Vafeas (1999) indicated that the board meeting frequency also influences firm performance. Lipton and Lorsch (1992) suggested that the greater frequency of meetings is likely to result in superior performance.

Contrary to the above results, some studies have shown no significant relationship between governance and firm performance (Prevost et. al., 2002; Park and Shin, 2003; Singh and Davidson, 2003). Hermalin (1991) more specifically found no relation between Board composition and firm's performance. Such opposing view has also been supported with negative relationship between corporate

governance and firm's performance (Bathala and Rao, 1995; Hutchinson, 2002).

The preceding discussions about corporate governance and firm performance are thus mixed and most of the previous works were conducted in the context of developed country perspective. This study thus seeks to measure firms' performance through factors which influence corporate governance.

III. Methodology

The present study specifically attempts to measure the effect of corporate governance on firm value of agri-input firms in India. The required data were collected from the data base, Prowess, a corporate database of Centre for Monitoring Indian Economy (CMIE). A time period of 5 years, starting from 2007 to 2011 was considered as the requisite data for the study were available only from this time period.

The study aimed to focus on all agri-inputs firms which are part listed in Bombay Stock Exchange (BSE). An exhaustive list of firms pertaining to agri-inputs industry from CMIE database was compiled. Out of these 215 listed firms, only 64 firms (29.9 per cent of total agri-inputs) formed the sample size. The other firms were not considered because of various data limitations due to merger / take over, change of industry sector over the period of the study and non availability of complete report of the firm etc. Thus only 64 firms from CMIE database were studied and rest of the

firms which were either not in operation in any of the year during the study period (2007 to 2011) or which were in operation but the requisite data on corporate governance and financial indicators were not available.

In the present study, correlation analysis and panel data regression method were employed. The panel data regression model is of two types viz. Fixed Effects Model (FEM) and Random Effects Model (REM). As the sample includes 64 companies covering a period of 5 years, panel data regression model is the most suitable because it allows overcoming the unobservable, constant and heterogeneous characteristics of individual firms. Between these two models the model with highest explanatory power to the balanced panel (Greene, 2003; Chen, 2004) was considered. A balanced panel data is a dataset with no missing value. Hence, the usual identification tests and the Hausman's Chi-square statistics were employed to select the best alternative.

The relationship between corporate governance and firm value is expressed as

$$TQ_{it} = \alpha_{it} + \beta_1(Bsize_{it}) + \beta_2(Bcomp_{it}) + \beta_3(Bmeet_{it}) + \beta_4(In.(Firmsize_{it})) + \beta_5(Age_{it}) + \varepsilon_i$$

Where:

i denotes the number of firms ranging from 1 to 64 (cross-sectional dimension).

t denotes the time period (years) ranging from 2007 to 2011 (time-series dimension).

Above equation was estimated by times series panel regression using Gretl software

and STATA software in order to capture the time varying effect of corporate governance on firm's performance.

Dependent Variable

TQ = Tobin's Q of firm i for time period t .

The equation for calculating Tobin's Q was adopted from Adam and Mehran (2005) and Rashid and Islam (2008), which is as follows:

$$TQ = \frac{MC + TA - sh.funds}{TA}$$

where;

MC = Market capitalization = (share price) × (no. of common stock outstanding).

TA = Book value of total assets.

Sh.funds=Book value of total shareholders' funds.

Independent Variables

The major independent variables were:

Bsize = Board size, measured by total number of Directors of firm i for time period t .

Bcomp=Board composition, measured by percentage of independent Directors to total Board Directors of firm i for time period t .

Bmeet= Board meeting, measured by number of meeting during the year of firm i for time period t .

Control Variables

Firmsize = firm size measured by log of total assets (in Indian Rupee) of firm i for time period t .

Age = measured by the number of years the firm has been in operation.

IV. Empirical Results

Multivariate panel data regression analysis was employed to estimate impact of corporate governance on firm's value of agri-input firms. The forthcoming section presents diagnostic tests to check for the violation of regression assumptions, if any, followed by the results derived from panel regression analysis. Diagnostic tests are employed to test for the presence of non-stationarity, serial/auto correlation, multicollinearity and heteroskedasticity in the panel data models that affect the efficiency of the estimators. Subsequently, the F-test value obtained was 15.169 with p-value = 0.0002 which was less than 0.05 implying that autocorrelation existed implying an autocorrelation correction is needed. Heteroskedasticity test was also done by first fitting the models with panel-level heteroskedasticity by means of Iterated Generalized Least Square and then fitting the model by Feasible Generalized Least Square without considering heteroskedasticity. The

log likelihood of both the regressions is then compared as to whether they are significantly different or not by calculating the likelihood ratio, which is distributed as chi-square (Nair et al., 2009). The result indicated a significant presence of panel heteroskedasticity in the regression model based on Chi-squared value (423.33) with (p-value = 0.00). To control for autocorrelation and heteroskedasticity, robust standard errors have been computed by clustering the data in order to tackle the problems.

In a panel data analysis, it is crucial to investigate whether the pooled data is stationary or not. Stationarity of the variables is must because non-stationary series cause spurious relationship between variables that in turn leads to distorted results. Harris-Tzavalis (1999) unit root test was employed (Singh and Dhingra, 2013; Canarella, et al, 2012; Barros et al, 2013). The Table 1 thus presents the HT statistic, z and the p-values for variables under study. The results revealed that all variables were stationary (p-value < 0.01) and can be used for analysis.

Table 1: Harris-Tzavalis Unit Root Test for panel data Stationarity

Variables	Statistic	Z	P-value
TQ	0.0151	-8.061***	0.000
Bsize	-0.2600	-2.738***	0.003
Bcomp	-0.2291	-2.289***	0.011
Bmeet	-0.5504	-6.956***	0.000
Firm size	0.0162	-8.037***	0.000
Age	-0.333	-13.593***	0.000

Note: *** represent rejection of null hypothesis at 1percent level of significance

Descriptive statistics

The average value of Tobin’s Q (TQ) was 1.3. The minimum and maximum value of TQ among the sampled firms was 0.3 and 6.9 respectively. The standard deviation was found to be 0.9 from the mean value. In case of corporate governance variables, the average board size for the sample firms was about 8 members (Mean = 8.103) with a maximum of 34 and a minimum of 3 Directors. The standard deviation value of 4.33 indicates a wide dispersion on the Board size of the sample firms. (Table 2)

On an average, 52.9 percent of the sample firms’ Directors were Non-Executive Directors (independents) as measured by percentage of Non-executive Directors with respect to total number of Directors. The standard deviation was 18.1 showed slight dispersion of the Board composition for the sample firms. The Board’s average annual meeting frequency of the sample firms was of about 6 meetings with maximum and

minimum board meeting of 60 and 2 Board Meeting respectively. The standard deviation was 0.929 indicated less dispersion of Board meeting from the average value.

The mean value of size of the sample firms as measured in terms of total value of asset was Rs. 9788.869 millions (Rs. 9.7 billion) having a maximum value of Rs. 206598.1 million (Rs. 206 billion) and a minimum value of Rs. 9.6 millions. The standard deviation of firm size among the sample firms was Rs. 22125.89 million (Rs. 22 billion). It is pointed out here that size of the firms selected for the study is heterogeneous and highly varied considering the minimum and maximum size and also standard deviation values. Finally, the average age of sample firms was 31.4 as measured by years. Some firms were as old as 65 years and the youngest firm was 11 years old. The standard deviation was 14.23 with the indication of existence of the variations among the age of the sample firms.

Table 2: Descriptive Statistics for Dependent and Explanatory Variables (n=340)

Variable	Mean	Median	Std. Dev	Min	Max
Tobin’s Q	1.300	1.000	0.900	0.300	6.90
Board size	8.10	7.00	4.33	3.00	34.00
Board composition (%)	52.90	50.50	18.10	9.00	93.00
No. of Board meeting	6.437	6.000	0.929	2.000	60.00
Firm size (Total Assets)	9788.869	1404.750	22125.900	9.600	206598.10
Age (years)	31.378	30.500	14.336	11.000	65.00

Besides, the correlation analysis (Table 3) exhibited a positive and significant (1 per cent

level) relation between TQ and Board size with coefficient of 0.43. However, Board

meeting have appositive correlation but insignificant with TQ with coefficient of 0.048. In contrast, Board composition did not have significant correlation with TQ. In

addition, the control variables such as firm size and age of the firm were positively correlated with TQ at coefficient of 0.45 and 0.07 respectively.

Table 3: Correlation analysis of Firm performance and Marketing Efforts Measures

Variables	TQ	Bsize	Bcomp	Bmeet	Firm size	Age
TQ	1.000					
Bsize	0.427**	1.000				
Bcomp	-0.091	-0.076	1.000			
Bmeet	0.048	-0.004	0.035	1.000		
Firm size	0.454**	0.441	-0.04	0.052	1.000	
Age	0.072	0.049	-0.052	-0.034	0.177	1.000

Note:*, ** denote significance at the 0.05 and 0.01 per cent level (2-tailed) respectively.

IV. Findings

The results of firm value (TQ) and corporate governance relation are presented in Table 4. The Random Effects Model (REM)

has been chosen for estimating the relation based on Hausman test.

Table 4: Panel estimation of corporate governance with TQ as dependent variable

Variables	Coefficient	Stand. Error	t-value
Constant	-0.17134	0.44485	-0.3852
Bsize	0.03767**	0.01560	2.415
Bcomp	-0.0010	0.00346	-0.2915
Bmeet	0.00099	0.00834	0.1187
Firm size	0.18667***	0.04929	3.787
Age	-0.00123	0.00728	-0.1697
Adjusted R ²	0.30		
Wald test	40.34 (0.0000)		
BP-LM	340.16 (0.0007)		
Hausman test (FE vs. RE)	3.805 (0.5777)		
No.of Observations	320		

Note; *** Significance at 1 per cent level, Numbers in parentheses are p-values

The study found a positive and statistically significant impact of Board size on TQ with t-value = 2.415, p-value < 0.05. This result implied that the numbers of Board of Directors' was positively related with firm value of agri-input firms in India. In another

words, the greater the number of Board members of agri-input firms, the higher their market performance achievement (firm value) is and vice versa. The result indicated that large Board size was more effective in monitoring and controlling firm management

and help in reducing agency cost. The coefficient of Board size was 0.037. The estimate for the Board size coefficient implies that expanding an eight-person Board (an average Board size in the sample) by one member implies increasing in firm value (TQ) of about 0.0047. Since the sample firm had an average market value of Rs. 139052.3 million and Tobin's Q of 1.34, a change in TQ of 0.0047 increase firm value by approximately Rs. 653.55 million for the average firm.

The Board composition did not show any significant relation with firm value as measured by TQ. The same case was observed for the Board meeting as measure of Board activity, the result failed to detect any effect on TQ. With respect to control variables, the firm size exhibited a positive and significant impact on TQ, while the age of firm did not reveal any effect on firm value (TQ). This finding of this study found consistent with previous studies like as Dwivedi and Jain (2005) as they also found bigger Boards are in a position to improve the governance of the firms leading to lower agency costs and have a positive association with firm value (TQ) in the Indian context. Thus expanding of Board size has a positive and significant impact on TQ of agri-input firms in India.

V. Conclusion

Many studies linking corporate governance and firm performance have been conducted. Although any country's financial

system and legal provisions regarding shareholder rights protection play an important role in moderating or influencing this relationship, our analysis of the Indian agri-input sector provided some evidence that a higher proportion of Board size could associate with increase in market value of the firm (TQ).

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