

Signalling Good Corporate Governance using publicly available information from Corporate: A Conceptual Exercise with Indian Companies.

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Abstract

The realm of Governance and Mis-governance, management and mismanagement in Corporate world over has become smudged. There has been hue and cry all over the world venting out public frustration on the way "public money" has been swindled right under the nose of the law makers. Committees have been set up to probe into the whereabouts with success and failure. Need of reviewing the process in which corporate governance per se was carried out became the focal discussion. Amidst mayhem, Corporate Governance codes were set up. Dishing out new committees and new corporate governance code became the call of the day. Yet, to the surprise of corporate mis-governance, mismanagement and broad day light loot of public money continued unabated. The present paper dwells upon in developing a model using discriminate analysis to create a good versus badly governed/managed company. The application of such a model may go far in practice as it would enable the investor, government and policy makers aware of the forthcoming fear of failure due to wrong governance and management practices being carried out in a company. This can therefore act as a signalling system to ward of dangerous impact of corporate mis-governance in first place and create a space for understanding the pointers which would signal such problems. The paper uses a sample of 60 companies drawn from service sector such as banking, hospitality and consulting and manufacturing companies such as Iron and steel, automobiles, pharmaceuticals, biotechnology. The data is put through a group classification based on which the discriminant function is drawn by using partial differentiation of one group on the other. The resultant discriminant function is then used to regroup the data to find the misclassification. These discriminant functions were then checked for predictability using Mahalonobis distance. Two equations, one each for non financial variables and financial variables were computed. It was observed that both the equation are mathematically robust, however, the equation for financial variables yield better discriminative power than the non financial variables. It was further observed at good governance in terms of non-financial variables are their in services sector and in case of non financial variables it is the manufacturing companies which does better.

Key words: *Corporate Governance, Discriminant analysis.*

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1.1 Introduction:

Modern day corporate houses have been long time entangled in the issue of agency cost and governance [Eisenhardt (1989)]. Berle and Means (1932) while raising issues of modern corporate pointed out that significant amount of corporate management time is used to increase the hiring of right kind of personnel and choosing appropriate remuneration for them. These causes substantial gap in expected performance and the cost associated with hiring such personnel. Brickley et al (2005) observes modern corporate tend to move towards unethical path since there is no reign on the decision taken by the management. Loosely held decision surmises into snowball of losses for which the corporate managers are not responsible. Clark and Istemi (2002), associates the poor governance in corporate with failure to measure governance.

Indian Corporate has accrued the national character of India. As Chattopadhyay (2008) reminiscent ***“India is not well reputed for honesty and integrity. She is far behind many other countries when it comes to assessing national character in everyday dealing, be it business or government. If integrity is not embedded in people, it is not easy to make people pure by enouncing rules and regulations: for every rule or regulations may have umpteen loopholes plugging which may be tantamount to chasing will – o—the- wisp.”*** The Indian corporate sector has been the breeding ground of several less than holy practices – some of them are so well known that space in a research article need not be wasted on them.

The issues in corporate governance move around three pivotal issues. The agency cost, the trust the management has from the stakeholder and its upholding and level of prudence the management has used to uphold the cause of the stakeholders. Berle and Means (1932) observes ***“.....Management thus becomes in an odd sort of ways, the uncontrolled administration of a kind of trust having privilege of perpetual accumulation. The shareholder is the passive beneficiary..... of the trust.”***

Discussion on corporate governance create a pace for discussion on non-systematic issues which has to do with spreading of network of holding and subsidiary companies in the pretext of diversification, initiating transaction between holding and subsidiary companies that are paper bound, false record of transactions, arrangement with buyers or sellers for misstatement of quantities and prices and an combination of one or more of them; [Chattopdhyay (2008)].

Hence, while deciding on corporate governance or more so on the issues of measuring them one need to understand a whole lot of issues that can affect it. In a bid to do so, a brief literature on what are the factors which affect the governance issues has been listed.

1.2 Survey of Contextual literature

MacAvoy and Millstein (2004) observe that there are financial as well as non financial factors affect the corporate governance. Foremost amongst them are corporate board credentials. On the financial front the market value creation and profitability can be noted as important issues which reflect good governance.

Parthasarathy (2010) observes that cumulative abnormal market return acts as a good performance measurement for corporate. Chattyopadhyay (2004) also argues in favour of market capitalization as a measurement for corporate performance, besides arguing that value maximization need not be the focus of the governance.

Hollender and Fenichell (2004) argues that corporate board prudence is what matters most in case of having a good governance.

The survey of literature in per say to quantify corporate governance which is the sole purpose of the paper are far and few between. With the limited availability a framework for measurement has been provided in the paper that follows.

1.3 Data and Method of Study

1.3.1 Source of Data: The data for the survey has been collected through public domain information, solicited information from companies directly. A total number of 60 companies had been taken across industry and capitalization. All the companies are public limited companies and are traded on National Stock Exchange. The number 60 has been taken to make it significantly large and to enable the exercise by dividing into two groups of "Acceptable governed" and "Unacceptably Governed". This is to check the misclassification and predictability of the model. Out of the total number of companies 23 are services companies and the rest are 37 are manufacturing companies. The services companies include Information technology, Banks, hotels, Tours and Travels and allied consulting companies. The manufacturing companies includes, Iron and Steel, Automobile, Pharmaceuticals, Chemicals and Biotechnology companies³¹.

1.3.2 Definition of variables

The following quantifiable data have been taken for the study.

A. Non-financial variables of corporate governance

- i.
$$\frac{\text{Number of director attending the meeting}}{\text{Number of Board meetings held}} = \text{Legal adherence ratio (LAR)}$$

³¹ For brevity, the exact numbers of companies in term of sectorial distribution are not given. The paper does not disclose the name of the companies as this is a very sensitive issue and the scope of the paper does not allow any such discussion

$$\text{ii. } \frac{\text{Number of Independent director}}{\text{Total number of directors}} = \text{Governance Compliance Ratio (CGR)}$$

B. Financial Variables of corporate governance

$$\text{iii. } \frac{\text{Net profit after tax}}{\text{Outstanding stocks in the market x spot price}} = \text{Earning to Capitalization ratio (ECR)}$$

$$\text{iv. } \frac{\text{Total Remuneration paid to Chief executive officer}}{\text{Total remuneration to all managerial employees}} = \text{Agency ratio (AR)}$$

1.3.2.1. Logic for the use of the above ratios.

The above ratios have been developed for the purpose of the study. The legal adherence ratio depicts the ability of the company to adhere to one of the most important clause of listing namely clause 49. Similarly governance adherence ratio is also an integral part of discloser given under various committee reports and clause 49. Earning to capitalization ratio is taken as a proxy for value maximization as it shows the proportion of profit on market capitalization. Agency cost ratio promotes the incremental agency cost anises due to the payment of the chief executive.

1.3.3. Scope of the paper

The scope of the paper is to develop a model of signaling system where by good governed companies can be segregated from the ill governed companies using publicly held data. The paper limits itself to selected companies in Indian scenario. It does not apply to any other economy or any other context what so ever.

1.3.4 Objective of the paper:

The paper is written with two fold objective.

- i. To verify whether a model can be developed as a matter of exercise with few companies in India and a signaling method can be developed.
- ii. In case this method is acceptable, to promote its usage as a voluntary disclosure for all companies.

1.3.6 Limitation of the paper

The paper is an exercise into understanding and developing a model. The entire model has been done by bivariate techniques, since the computation has been done manually and not using any software. Despite the fact that software can be used for the purpose, it was found

that the method of discrimination was not yielding correct result on a test data. Hence, manual calculation has been resorted to. This had been one of the limitations.

The second limitation of the study was in procurement of data, as many companies shy away from sharing information. Still others shared the information on condition of strict confidence. Therefore the research had to be completed using data that can be procured for twelve companies of which two were not relevant to the study.

1.3.7 Method used

A bivariate analysis namely discriminant analysis has been carried out to two categories of corporate which are well governed versus which are ill governed. For this two discrete groups have been taken with the variable defined above. Two variables combine in a linear manner has been used for discrimination between the two discrete groups. The discriminant function there fore is;

$$Z_i = aX_i + bY_i \dots\dots\dots \text{Equation (1)}$$

Where:

Z_i = Is the discrimination value

X_i and Y_i are respectively two discrete groups

a and b are respective the constant calculated by partially differentiation one in respect of the other.

It has been assumed that two variables arise from multivariate normal populations. While the means of the two variables in each group are different, their variance/covariance matrix is identical for each group. It may be observed that large set of data can be checked for white noise using standard computerized package.

1.3.7.1 Estimation of the discriminant function

$$G = \frac{(\bar{Z}_1 - \bar{Z}_2)^2}{\sum_{i=1}^{n1} (Z_i - Z_1)^2 + \sum_{i=1}^{n2} (Z_i - Z_2)^2} \dots\dots\dots \text{Equation (2)}$$

Where;

Z_1 is the mean value of the Z score in group 1, Z_2 is the mean value of the Z scores in group 2.

$\sum_{i=1}^{n1} (Z_i - Z_1)^2$ is the sum of deviations in group 1 and,

$\sum_{i=1}^{n_i} (Z_i - \bar{Z})^2$ is the sum of the squares of deviations in group 2.

In the ratio given in the above equation1, the numerator represent the between groups sum of squares of the Z_i scores and the denominator represent the “within” group sum of squares of the Z_i scores. For maximizing the ratio, given in equation 1, we set its partial derivatives with respect to a and b (the two parameters of the discriminant function) equal to 0. By doing this we get the following normal equations:

$a \cdot \sigma_x^2 + b \cdot \sigma_{xy} = dx$ Equation (3).

$a \cdot \sigma_y^2 + b \cdot \sigma_{xy} = dy$ Equation (4).

Where σ_x^2 is the variance of X, σ_{xy} is the covariance of X and Y, σ_y^2 is the variance of Y and dx is the difference between the mean values of X for the two groups (group 1 and group 2) and dy is the difference between the mean values of y for the two groups.

$$a = \frac{\sigma_y^2 \cdot dx - \sigma_{xy} \cdot dy}{\sigma_x^2 \cdot \sigma_y^2 + \sigma_{xy}^2}$$
 Equation(5)

$$b = \frac{\sigma_x^2 \cdot dy - \sigma_{xy} \cdot dx}{\sigma_x^2 \cdot \sigma_y^2 + \sigma_{xy}^2}$$
 Equation (6)

1.3.7.2 Choice of the cut-off point for the discrimination

The cut off point is the value which separates the two groups and decreases the chances of misclassification. The following method has been followed.

- i. The Z_i values for the observations were arrived and arranged in an ascending order.
- ii. The mid point of adjacently ranked observations win the area where the observations from the two groups overlap is taken as the possible cut-off value.

1.3.7.3 Estimation of predictive ability of the discriminant model

The predictability of the discriminant function is done in two ways. The different ways are discussed below.

a. Validation or Hold out sample method.

The predicative ability of the discriminant function with reference to a new sample which may be referred to as a validation or holdout sample. This involves comparing the classification of observations base on their discriminant function scores with their actual classification. For this purpose the following classification matrix is prepared.

Predicted Classification	Actual Classification		
		Group 1	Group2
	Group 1	C11	C12
	Group 2	C21	C22

If the determinant model correctly predicts the group to which each observation belongs, all observations will be on the main diagonal of the matrix, i.e. in the C11 and C22 elements.

The percentage of correct predictions is:

$$\frac{C11 + C22}{C11 + C22 + C21 + C22}$$

However, this model of determining predictability is complex in term of gathering a parallel new sample to verify the model.

Hence, in most of the case the best suitable method is taken where Mahalonobis distance for liner model classification is taken into consideration.

b. Mahalonobis Distance is given as:

$$\Delta^2 = \beta^T (\mu_1 - \mu_2) \dots \dots \dots \text{Equation (7)}$$

Where,

Δ^2 = Mahalonobis distance factor

β^T = Mean vector of coefficients

$(\mu_1 - \mu_2)$ = difference between the mean vector of two groups

A distance greater than one means that in average sample more than one standard deviation. Hence a higher difference means higher standard deviation of group and lesser predictability of the discriminant function. It is independent of the scale and hence a suitable measure for both ordinal and cardinal scales. Hence, the Mahalonobis Distance has been taken to estimate the predictability of the model, in this study too.

1.4 Interpretation and Analysis

On analyzing of 60 companies data with the given method discussed above two discriminant functions were obtained as given in the table 1.1 given below.

Table 1.1 Discriminant function for Non-financial variables of corporate governance and Financial Variables of corporate governance

Name of the Discriminant function	Discriminant function	Misclassification numbers	Ratio of misclassification to good classification (N=60)	Mahalonobis Distance

Non-financial discriminant function for corporate governance	$Z_i = 7.063LAR + 6.746CGR$	6	0.11	4.66
Financial discriminant function for corporate governance	$Z = 2.036ECR + 3.621AR$	3	0.052	2.38

Source: Computed

From the above table it is apparent that the indifference line in case of financial variables is more usable than that of the non-financial variables. The Mahalanobis distance in case of the financial variables discriminant function is 2.38 which is low and the ratio of misclassification to correct classification is 0.052.

It is thus observed that, discriminant function can be drawn for understanding a classification based study for corporate governance. The models are mathematically robust and can discriminate between good and bad corporate practices used. However the model of non financial variables can be worked upon with significant amount of data and refining the variables.

Table 1.2 below shows the classification done through the discriminant function for both the non-financial and financial variables

Table 1.2 Discrimination table using the discriminant function (N = 60)

Discriminant function	Good or acceptable	Bad or unacceptable	Number of misclassification
Non-financial	28. (16 service sector and 12 manufacturing sector)	32 (28 manufacturing and 4 service sector)	6
Financial	31 (25 manufacturing and 6 services)	29 (24 services and 5 manufacturing)	3

Source: Computed.

Table 1.3 Discriminating cutoff point .

Discriminant function	Cut off point for good and bad corporate governance
Non Financial	2.09
Financial	3.80

Source: Computed

The above table indicate that there 28 companies which have acceptable practices in term of good governance under non-financial discriminating variables and 31 in case of financial

discriminating variables. Since about fifty percent discrimination is possible, it seems to be good. Read with table 1.1 the resulting ratio of misclassification is also low. Hence, it can be a good model to use, until a more refined model with a larger data set is drawn upon.

Table 1.3 indicates the cut off point for discrimination as 2.09 for non financial variables and 3.80 for financial variables. This indicates that those who have Z score above 2.09 and 3.80 are good governed companies and those below it are not good governed companies in term of these two variables.

It was further observed that the service sector companies are better in terms of non-financial variables than the manufacturing sector. The, reverse is true for the financial variables. This may be due to better compliance by the service sector then the manufacturing in case of non financial companies. Since the market capitalization has been taken as a significant parameter in case of financial variables, the manufacturing companies seem to do well on this front, as they generally have higher market capitalization.

1.5 Conclusion

The paper tries to develop a conceptual framework for signaling of good corporate governance. It uses a sample of sixty companies which is drawn from several industry predominantly services and manufacturing. Discriminant function using pre-determined group based on theoretical logic was done. Using the extracted equation, a second discrimination was done to reduce misclassification. It was observed that both the equation are mathematically robust, however, the equation for financial variables yield better discriminative power than the non financial variables. It was further observed that good governance in terms of non-financial variables are their in services sector and in case of non financial variables it is the manufacturing companies which does better.

1.6 Scope for further Research:

The objective of the paper was to examine whether a signaling system can be developed using quantifiable data, which can discriminate good corporate governance practicing from the not good ones. To that extent, the exercise seem fulfilling and a larger data set may be tried to fine tune the model

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