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Application of Value Based Financial Measures to Improve Corporate Governance in India: Evidence through Random Effects Model

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ABSTRACT

Under corporate governance, organizations articulate corporate values, codes of conduct, and standards of appropriate behavior etc., and develop systems, procedures, and controls to ensure compliance with them. The core management team sets the strategic objectives, corporate values and specifies transparent lines of responsibility and accountability. Performance of a firm is measured by valued based performance measures – economic Value added and market value added. These values are expected to create value to the firm and to the shareholders. In this article, annual reports and using panel regression models were used to determine the effects of explanatory variables on the financial performance of IT sector. It is concluded that corporate performance influence both Economic Value and Market Value
But it has more influence on Economic Value of the company which reveals that corporate governance influences significantly how well a company produced value for its investors than the company has managed to create value on corporate success.

Key Words: *Economic Value Added; Market Value Added; Strategic Objectives; Financial Performance ; shareholders Value; Firm Value; Corporate Values*

Corporate Governance is the systems and mechanisms gaining lot of prominence in the corporate business world as the business expansions and business integrations are at high level. There has been transfer of investments and financial resources across different business units by private and foreign investments both individual and institutional investments. Managing and administering business activities is being given to core management teams to bring in professionalism in the functioning of businesses. It is assumed that management properly governs an organization and is widely believed to play an important role in monitoring those who are authorized to govern at the top level. Corporate governance practices are absolutely essential to bring in transparency and efficiency in the systems and practices and to protect the interests of multiple stakeholders most importantly shareholders. A growing number of empirical studies examine the effectiveness of corporate governance practices in preventing the undue interests of the management and to measure the effectiveness of managerial

decisions. Empirical studies in corporate governance focus on the link between corporate governance and firm's performance. The majority of studies have studied corporate governance and firm's performance using Tobin's *q* as a proxy for firm performance, Return on assets, Returns on equity. There have been a limited number of studies using performance measures such as EVA and MVA, etc. On the backdrop of the following reviews the research has been conducted to study the effect of corporate governance variables with the value based financial performance measures like EVA and MVA in reference to Information sector in India.

Black, Kim, Jang and Park (2005) connoted Corporate Governance by making broad corporate governance index (Korea Corporate Governance Index), comprised of five sub-indices, for Board Structure, Ownership Parity, Disclosure, Shareholder Rights, and Board Procedures. This result is driven by the Board Structure Sub index and, less strongly, by the Disclosure and Ownership Parity sub-indices. The Shareholder Rights and Board Procedure sub-indices are not significant.

Dwivedi and Jain (2005) investigated the effect of Board Size and Ownership on Corporate Governance and Performance of Indian Firms. Governance parameters included board size, directors' shareholding, institutional and foreign shareholding, while the fragmentation in shareholding is captured by public shareholding. These measures can be grouped into two broad classes: the accounting-based measures (such as PBIT, PAT/Sales, EVA, etc.) and the market-based measures (such as market capitalization, MVA, Tobin's *Q*, etc.). In this study, Tobin's *Q* - which is the ratio of firm's market value and the book value of its assets - was taken as the dependent variable for firm performance. The regression results concluded that 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 in the Indian context**Law Econ (2006)** conducted a multivariate analysis using a sample of listed Danish firms in order to examine what describes board composition. This study shows that four factors explain Danish board structure they can be; the lawyer oriented, the business person oriented, the internationally oriented and finally the traditionally oriented board. **Kuçukçolak, Ali, Ozer and Levent (2007)** studied in detail the principles and practices of Corporate governance at Istanbul Stock Exchange and Turkish capital Market and in reference to OECD. They analyze the response of a questionnaire based on the practices of corporate governance principles and provided statistical evaluation to the findings.

Douglas (2007) studied Corporate Governance and firm performance the influence of structures, processes and information technology by using an agency theory approach and quantitative analyses of data. This study found very little support that would suggest a positive relationship between firm performance and governance structures related to the independence of board members, committees, or chairs. **Chugh, Meador and Kumar (2008)** investigated the relationship between the financial performance and some characteristics of Corporate Governance for Indian firms. Relevant corporate governance variables were selected in view of alternative hypotheses regarding board structure and financial performance. The choice of corporate governance variables board size, board autonomy, and CEO duality were selected for their effect on decisions regarding asset and product management. In this cross sectional study they used return on assets ("ROA") as the dependent variable on instead of return on equity ("ROE") in order to minimize the impact of capital structure decisions.

Mir and Seboui (2008) investigated whether governance mechanisms approximated by the board of directors' characteristics, auditors' quality, ownership structure and compensation mix, can help bridge the gap between economic value added (EVA) and market values approximated by created shareholder value (CSV). A sample of US firms and using available data for EVA, discriminate analysis and stepwise regression are used to test whether governance characteristics explain the differences between the results provided by the two measures of performance.

Determining Variables of the Study

In the current study performance of firm is measured by value based performance measures such as EVA and MVA. As discussed in the literature review, each of these variables has the potential to be affected with governance. The literature reports that when boards are dominated by executive directors and frequency of board meetings is high, it enhances firm performance. The board size, institutional ownership and CEO-duality also have a strong influence on firm's performance.

Dependent Variables

Economic Value Added (EVA): This concept was developed by Stern Stewart & Co and is a performance measure which attempts to measure the true economic profit produced by a company. It is as called as "economic profit". EVA provides a measurement of a company's economic success or failure over a period of time. EVA is a useful tool for the investors who wish to determine how well a company has produced value for its investors, and it can be compared against the company's peers for a quick analysis of how well the company is operating in its industry EVA in simpler terms considers the corporates case of generating an income at least as much as cost of capital. It considers both cost of debt (which is a direct cost item) and cost of equity (which is an indirect cost item). EVA is not bounded by General Accepted Accounting Principles (GAAP). Appropriate adjustments are made to calculate EVA. This removes arbitrariness and scope for manipulations that is quiet common in accounting based measures. EVA calculation is based on firm's financial statements which is quiet familiar to all of us.

EVA = (Return on Invested Capital – Weighted Average Cost of Capital)× Invested Capital

EVA = ((Net Operating Profit after Tax / Invested Capital) – Weighted Average Cost of Capital) × Invested Capital

NOPAT = (EBIT – Tax); Invested Capital = Fixed Assets + Net Current Assets

WACC = (K_d×Debt/ Equity)+(K_e×(1-Debt/ Equity))

K_d=(Interest paid/ Average Borrowing)× 100; where Average Borrowing = (OpeningBorrowing + Closing Borrowing) / 2
In Capital Asset Pricing Model (CAPM) was used to calculate cost of equity. The model used is as follows

$K_{e=}$ R_f + (R_m - R_f) * beta

Market Value Added: Market value added is the difference between the Company's market and book value of shares. Hence MVA measurement shows the net difference between a company's market value and the cost of its invested capital. A negative MVA indicates that management has done a poor job of creating value with the base of equity available to it, since investors have reduced the company's value below the amount of equity invested. M. Thenmozhi (2000). If the total market value of a company is more than the amount of capital invested in it, the company has managed to create shareholder value. If the market value is less than capital invested, the company has destroyed shareholder value. According to Stern Stewart

Market Value Added = Company's total Market Value – Capital Invested

Market Value Added = Market Value of equity – Book value of equity
Market Value Added has been computed using the Stern Stewart formula, the following equation in the study.
MVA = Enterprise Value (Market Value of equity + market value of debt) – Average Capital Employed (Total assets – other Current Liabilities)

Statistical Techniques for the Analysis of Data
The relationship between financial performance measures and corporate governance variables is analysed by multiple panel regression models. These models integrate time and the cross section dimension of the data set. Panel regression models are required for panel data to get more accurate results. Therefore two different panel regression models are constructed for both dependent variables Economic Value Added and Market Value Added.

Correlation Analysis:

Correlation refers to the relationship of two variables or more. It measures and analyses the degree or extent to which the two variables fluctuate with reference to each other. A detailed correlation analysis will be done for all the four companies to study the relationship between the explanatory variables, separate correlation tables for both the dependent variables EVA and MVA will be made and finally one combined correlation matrix will be made and results will be analyzed.

The regression results based on non-stationary data cannot give accurate results. Therefore the series must be tested for stationarity in all econometric studies according to

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Granger and Newbold (1974). The unit root tests are used to investigate the stationarities of series. Panel unit root tests are used to test the stationarities of series since the panel data models are used in the study. Panel data combines times series as well as cross section data. We have a cross section, but we observe the cross section over time.

Unit Root Tests:

Levin, Lin and Chu t-test

The Tests was developed by Levin et al (2002) and are used to examine the common unit root process LLC t-test is an extension of Degree of freedom test. It assumes that individual processes are cross-sectionally independent. Therefore the test derives conditions for which pooled OLS estimator will follow a standard normal distribution under null hypothesis. Individual unit root tests have limited power. Power of a test is defined as the probability of rejecting the null when it is false and the null hypothesis is unit root. It follows that we find too many unit roots. Levin-Lin-Chu Test (LLC) suggests the following hypothesis. Where, the lag order p is permitted to vary across individuals.

Multiple Panel Regression Models

The changes in financial performance measures can be explained by corporate governance variables and analyzed by multiple panel regression models, which integrate the time and cross-section dimensions of the data set. Standardized data are used in the panel model structure, while raw data are used for descriptive statistics to ensure that no information is lost. Therefore, considering EVA and MVA variables as financial performance measures, two different panel regression models are constructed to determine the effects of explanatory variables on financial performance measures are analyzed and the results are assessed. The panel data set covers a 14 year period from 2001 to 2014, with a sample of three IT firms.

Equation for Regression model

$$\mathbf{EVA_{it} = \beta_0 + \beta_1(Dualit) + \beta_2(Sotbit) + \beta_3(Nomit) + \beta_4(LRit) + \beta_5(Fsizeit) + e_{it}}$$

$$\mathbf{MVA_{it} = \beta_0 + \beta_1(Dualit) + \beta_2(Sotbit) + \beta_3(Nomit) + \beta_4(LRit) + \beta_5(Fsizeit) + e_{it}}$$

Where, EVA_{it} represents Economic Value Added (EVA) for firm i at time t; MVA_{it} represents Market Value Added (MVA) for firm i at time t; the explanatory variables like (Dualit) represents CEO Duality for firm i at time t; (Sotbit) represents Size of the Board for firm i at time t; (Nomit) represents Number of board meeting for firm i at time t; (LRit) represents Leverage Ratio for firm i at time t; (Fsizeit) represents Size of the Firm for firm i at time t; i = 1 to 3 firms; t = 2001-2014; e_{it} = Error term.

Random Effect Model

In statistics, random effect(s) model, also called a variance components model, is a kind of hierarchical linear model. It assumes that the dataset being analyzed consists of a hierarchy of different populations whose differences relate to that hierarchy. In econometrics, random effects models are used in the analysis of hierarchical or panel data when one assumes no fixed effects (i.e. no individual effects).

Fixed Effect Model

A fixed effects model is a statistical model that represents the observed quantities in terms of explanatory variables that are treated as if the quantities were non-random. This is in contrast to random effects models and mixed models in which either all or some of the explanatory variables are treated as if they arise from random causes. Contrast this to the biostatistics definitions, as biostatisticians use "fixed" and "random" effects to respectively refer to the population-average and subject-specific effects (and where the latter are generally assumed to be unknown, latent variables).

Hausman Test

The Hausman test (also called the Wu-Hausman test, Hausman specification test, and Durbin-Wu-Hausman test) is a statistical hypothesis test in econometrics named after De-Min Wu and Jerry A. Hausman. The test evaluates the significance of an estimator versus an alternative estimator. It helps one evaluate if a statistical model corresponds to the data.

Data Analysis and Interpretation

Introduction to Data Analysis

In this research paper, the relationship between corporate governance and firm performance is investigated on the basis of value based performance measures, and the data set covers the period 2001-2014.The data set is constructed using the annual financial reports published by the companies on the official website as well as the PROWESS database. In order to reach more reliable parameter estimates, and hence to obtain more accurate results, panel data set is used.Two panel regression models were constructed to determine the effects of explanatory variables on financial performance measures analyzed. The decision to use either the fixed effects model or the random effects model in regression analyses is made utilizing statistical methods. Two panel regression models are analyzed and the results are assessed.

Description of Explanatory variables

Table I :Description of variables under study

Dependent Variables	Economic Value Added	(Return on invested Capital – Weighted Average Cost of Capital) x Invested capital	EVA
	Market Value Added	Enterprise Value – Average Capital Employed	MVA
Independent Variables	CEO Duality	1 when CEO is also the Chairman of the Board of Directors and 0 otherwise (Dummy variable)	DUAL
	Size of the board	Logarithm of the number of Members in the board of Directors.	SOTB
Control Variables	Number of Meetings	Number of Board Meetings in a year (Logarithm value of the same is taken)	NOM
	Leverage Ratio	Total Debt/ Total Assets	LR
	Firm size	Logarithm of Total Assets	FSIZE

CEO-Duality (DUAL): This is a dummy variable which studies whether or not CEO is also the chairman of the board of directors. As a dummy variable it can take the value either 1 or 0. Variable takes the Value of 1 if the roles of Chair and CEO are held by one personas studied by Abdullah (2008).When a CEO is rewarded with a chair position for his/her performance, the board is expressing its confidence in the CEO's ability to lead the firm stated by Kang and Zardkoohi (2005), By providing strongand unambiguous leadership to the CEO, the board sends a signal to stakeholders that the firm has a clear sense of direction and that a capable CEO, not the external environment, is determining organizational outcomes indicated by Child(1972).

Size of the Board (SOTB): This refers to the total number of directors on a board studied by Panasian et al (2003), has been regarded as an important determination of effective Corporate governanceand its logarithm is included in the model according to study done by Bayrakdaroglu(2012). The optimal board size according to Goshi et al (2002) includes both the executive directors and non executive directors. Forbes and Daniel (1999) argued that although board size is not truly a demographic attribute, which is not unlikely to have much of an effect on board functioning. A smaller board may be less encumbered with bureaucratic problems and may be much more functional. Smaller boards may be able to provide better financial reporting insight. On the other hand, a board of a larger size may be able to draw from a wider range of experience. In the event of earnings management, a bigger board may be more likely to haveindependent directors with corporate or financial experience. In the current study the number of members in thecomposition of the board is taken and the log value of the same has been calculated.

Number of Board Meetings (NOM): Indicates the board meetings in one financial year are another independent variable included in the current study. It is very important that board

meets regularly to discuss about the organization.Every Board member can suggest additional items for inclusion in theagenda. The Board must meets at least once a quarter to review the quarterlyresults and other items on the schedule, and also on the occasion of the AGM of the shareholders. More meetings are held, when there is a need. In the current study number of meetings held in a year and the log value of same has been taken.

Leverage Ratio (LR): Measured by the ratio of Total Debt to Total Assets is included as control variable in the current study. A company's leverage relates to how much debt it has on its balance sheet, and it is yet another important indicator of financial health. Usually, the more debt a firm has, the riskier the stock becomes, and since debtholders are the ones who have first claim to a company's assets.

Firm Size (FSIZE): Transformed as logarithm of Total Assets and are included as another control variable in the current study. Firm size has become such a routine to use as a control variable in empirical corporate finance studies that it receives little to no discussion in most research papers even though not uncommonly it is among the most significant variables.Emperical studies states that Size of the firm does have an influence on the financial performance of the firms, hence Firm size is included as an important variable to study the corporate performance of stated information technology firms. The determination of the variables is based on the literature by Sridharan and Marsinko (1997); Demsetz and Villalonga (2001; Kyereboah-Coleman et al.(2006).

Descriptive study statistics are presented as below.
Mean (or average) and median are two statistical terms that play a similar role in order to explain the central tendency of a set of statistical scores. Mean has traditionally been a popular measure of a mid-point in a sample, it obviously faces the disadvantage of being affected by any single value being at the extreme of a spectrum compared to the other part of the sample. Thus sometimes median is sometimes taken as a better measure of central tendency.

The middle number in a sorted list of numbers is also known as the median. The median can be used to determine an approximate average. By looking at the median it seen that there is quite a difference in the mean and median values of EVA and MVA.As discussed earlier median is a better measure to explain the central tendency and these are 10111.81 and 372990.0.However if the data were to be symmetric both the mean and median values would have been similar.

Kurtosis shows how peaks and tails of a distribution is different from a normal distribution. Data that follow a normal distribution perfectly have a kurtosis value of zero. Normally distributed data establishes the baseline for kurtosis. Sample kurtosis that significantly deviated from zero may indicate that the data are not normally distributed.
Positive Kurtosis in a distribution indicates that the distribution has heavier tails and sharper peaks than the normal distribution.

Negative Kurtosis clearly show that distribution has lighter tails and a flatter peak than the normal distribution.

Maximum and minimum values are nothing but the largest and smallest values in a dataset. One of the easiest ways to access the spread of the data is to compare the Minimum and Maximum values. If the maximum value is high even when one considers the center or the spread of the distribution and the shape of the data, one must investigate the cause of the extreme value.
Skewness. When data are skewed the majority of the data are located on the high or the low side of the graph. Usually skewness is simple to detect in a histogram or by using a box plot diagram. The individual value plot with the right skewed data indicates wait times. It is seen that most of the wait times are relatively short and there are not too many long wait times. The individual value plot with the left skewed data shows failure time data. A few data items fail immediately and many more items fail much later.

Positive skewed or right skewed data is called so because the tail in the distribution of points to the right and because its skewness value will be greater than zero or positive.

Negatively skewed data is also called as left skewed data. The reason it is called so is because the tail of the distribution if the data points to the left and also because it gives a negative skewness value.

N indicates the total number of observations for each of the variable under study.
Standard Deviation is yet another measure of dispersion or in other words it measures the spread of data about the mean. Symbol sigma is usually used to represent the standard deviation of the population while s is used to represent the standard deviation of a sample. Variation that is either natural or random to a process is often referred to as noise in statistical jargon.
A higher standard deviation value clearly proves that there is greater spread in the data. By rule of thumb ,for a normal distribution approximately 68%of the values fall within one standard deviation of the mean.95% of the values fall within 2 standard deviations and 99.7%of the data values fall within 3 deviations from the mean.

Standard deviation can also be used in order to establish a benchmark in order to estimate the overall variation of the process.

The JB statistic is an indicative of the distribution's deviation of zero value indicates that the null hypothesis "the distribution is normal" is rejected.

Descriptive Analysis

Table II : Descriptive statistics of WIPRO

WIPRO

	DUAL	EVA	FSIZE	LR	MVA	NOM	SOTB
Mean	1.000000	13624.21	4.957101	0.081707	421780.4	0.752220	1.194263
Median	1.000000	10111.81	4.905700	0.031064	373990.0	0.602060	1.000000
Maximum	1.000000	35623.90	5.590668	0.199977	831365.9	1.386294	2.639057
Minimum	1.000000	3031.147	4.389683	0.005226	105964.7	0.602060	0.845098
Std. Dev.	0.000000	10915.71	0.446767	0.080326	251288.0	0.277574	0.600973
Skewness	NA	0.772979	0.121809	0.377726	0.274321	1.803299	1.981372
Kurtosis	NA	2.327684	1.467159	1.322534	1.617547	4.569575	5.047103
Jarque-Bera	NA	1.657832	1.405221	1.974349	1.290440	9.024817	11.60482
Probability	NA	0.436522	0.495291	0.372628	0.524547	0.010972	0.003020
Observations	14	14	14	14	14	14	14

Interpretation

The above table indicates the key values of all variables used for the purpose of study of WIPRO. The table throws light on the key descriptives of the data variables such as mean, median, maximum, minimum, standard deviation, skewness and kurtosis.

For WIPRO, it is seen that the mean of Economic value added, Fsize, LeverageRatio, MVA,NOM,SOTB for the years of study 2001-2014 are 13624.21, 4.9571, 0.0817, 421780.4, 0.752220, 1.1942 respectively.

The number of observations that were taken into consideration for WIPRO were 14.The skewness values of the variables indicates that all the variables are slightly positively skewed, however NOM and SOTB are exhibiting a higher amount of positive skewness.

The values are seen to exhibit positive kurtosis values for all the variables. Positive Kurtosis in a distribution indicates that the distribution has heavier tails and sharper peaks than the normal distribution. Yet again the variables NOM and SOTB are seen to exhibit a high amount of positive kurtosis.

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Table III: Descriptive statistics of HCL

HCL

	DUAL	EVA	FSIZE	LR	MVA	NOM	SOTB
Mean	0.500000	4389.735	4.591636	0.045565	93807.01	0.872205	1.111341
Median	0.500000	4144.897	4.571568	0.029379	79395.78	0.778151	0.903090
Maximum	1.000000	7512.590	5.081387	0.152568	232357.8	1.386294	2.397895
Minimum	0.000000	1909.850	4.055886	0.000000	-15042.23	0.602060	0.778151
Std. Dev.	0.518875	1953.446	0.312818	0.049291	75899.12	0.234514	0.549591
Skewness	0.000000	0.394797	-0.014004	0.809614	0.491805	1.473080	1.971217
Kurtosis	1.000000	1.738800	1.942392	2.460746	2.259896	4.033250	5.015397
Jarque-Bera	2.333333	1.291548	0.652936	1.699071	0.883891	5.686024	11.43602
Probability	0.311403	0.524257	0.721467	0.427613	0.642785	0.058250	0.003286
Observations	14	14	14	14	14	14	14

Interpretation

The above table indicates the key values of all variables used for the purpose of study of HCL. The table throws light on the key descriptives of the data variables such as mean,median,maximum,minimum, standard deviation,skewness and kurtosis.

For HCL, it is seen that the mean of Economic value added, Fsize, Leverage Ratio, MVA, NOM, SOTB for the years of study 2001-2014 are 4389.735, 4.591636, 0.045565, 93807.01, 0.872205, 1.111341 respectively.

The number of observations that were taken into consideration for HCL were 14.The skewness values of the variables indicates that all the variables are slightly positively skewed EXCEPT FSize, however NOM and SOTB are exhibiting a higher amount of positive skewness.It is seen that FSize is an outlier with a slight negative skewness with a value of -0.014004

The values are seen to exhibit positive kurtosis values for all the variables. Positive Kurtosis in a distribution indicates that the distribution has heavier tails and sharper peaks than the normal distribution. Even in this case it is observed that variables NOM and SOTB are seen to exhibit a high amount of positive kurtosis.

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TableIV: Descriptive statistics of Infosys

INFY

	DUAL	EVA	FSIZE	LR	MVA	NOM	SOTB
Mean	0.071429	15896.00	4.927471	0.000849	581288.6	0.851096	1.402374
Median	0.000000	13360.00	4.890095	0.000000	489504.0	0.778151	1.176096
Maximum	1.000000	33790.00	5.558324	0.008574	1434175.	1.386294	2.772589
Minimum	0.000000	3890.200	4.237458	0.000000	145479.3	0.698970	1.146128
Std. Dev.	0.267261	11004.09	0.429043	0.002392	423150.9	0.233696	0.553203
Skewness	3.328201	0.308384	0.012786	2.731290	0.701091	1.797852	2.045220
Kurtosis	12.07692	1.489782	1.671039	9.110839	2.184907	4.635043	5.211695
Jarque-Bera	73.90730	1.552343	1.030629	39.18958	1.534452	9.101430	12.61359
Probability	0.000000	0.460164	0.597313	0.000000	0.464299	0.010560	0.001824
Observations	14	14	14	14	14	14	14

Interpretation

The above table indicates the key values of all variables used for the purpose of study of Infosys. The table highlights the key descriptives of the data variables such as mean, median, maximum, minimum, standard deviation, skewness and kurtosis.

The maximum values for variables DUAL, EVA, FSize, LR, MVA, NOM, SOTB are 1, 33790 ,5.5583 ,0.008574 ,1434172 ,1.386294 ,2.772589 respectively. In the case of Infosys, it is seen that the mean of Economic value added, Fsize, Leverage Ratio, MVA, NOM, SOTB for the years of study 2001-2014 are 15896, 4.927471, 0.000849, 581288.6, 0.851096, 1.402374 respectively.

The number of observations that were taken into consideration for Infosys were 14.The skewness values of the variables indicates that all the variables are slightly positively skewed. In this case it can be noted that the variable DUAL exhibits the highest skewness whereas the lowest is exhibited by the variable leverage ratio.

The values are seen to exhibit positive kurtosis values for all the variables. Positive Kurtosis in a distribution indicates that the distribution has heavier tails and sharper peaks than the normal distribution. However it is EVA and Fsize that indicate a lower kurtosis when compared with the other variables which exhibit a higher amount of kurtosis in the data.

Correlation Analysis

TableV: Descriptive statistics of the overall IT sector

Overall Selected IT Sector

	DATEID	DUAL	EVA	FSIZE	LR	MVA	NOM	SOTB
Mean	732858.8	0.523810	11303.32	4.825403	0.042707	365625.4	0.825174	1.235992
Median	732858.5	1.000000	6302.231	4.746172	0.008472	234182.4	0.778151	1.041393
Maximum	735233.0	1.000000	35623.90	5.590668	0.199977	1434175.	1.386294	2.772589
Minimum	730485.0	0.000000	1909.850	4.055886	0.000000	-15042.23	0.602060	0.778151
Std. Dev.	1490.202	0.505487	10136.43	0.425231	0.062757	347577.3	0.248971	0.568046
Skewness	0.000143	-0.095346	1.093368	0.281624	1.353014	1.274337	1.506337	1.857241
Kurtosis	1.787643	1.009091	2.782084	1.971349	3.349690	3.959454	4.031672	4.894486
Jarque-Bera	2.572168	7.000145	8.451275	2.406898	13.02852	12.97851	17.74597	30.42629
Probability	0.276351	0.030195	0.014616	0.300157	0.001482	0.001520	0.000140	0.000000
Observations	42	42	42	42	42	42	42	42

Interpretation

The above table indicates the key values of all variables used for the purpose of study of the three firms in the IT sector. The table highlights the key descriptives of the data variables such as mean, median maximum minimum, standard deviation,skewness and kurtosis of the overall IT sector under

The number of observations that were taken into consideration for IT Sector were 42.The skewness values of the variables indicates that all the variables are very slightly positively skewed except the DUAL variable which shows a small negative skewness in its observations

The values are seen to exhibit positive kurtosis values for all the variables. Positive Kurtosis in a distribution indicates that the distribution has heavier tails and sharper peaks than the normal distribution. The variables NOM and SOTB show a higher kurtosis value amongst the other variables of study.

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Table VI Correlation of EVA on Corporate Governance variable

Correlation EVA on Corporate Governance Variable

Correlations							
Control Variables			DUAL	SOTB	NOM	LR	FSIZE
EVA	DUAL	Correlation	1.000	-.292	-.286	.260	-.002
		Significance (2-tailed)	.	.064	.069	.100	.992
		df	0	39	39	39	39
	SOTB	Correlation	-.292	1.000	.909	-.082	-.435
		Significance (2-tailed)	.064	.	.000	.612	.004
		df	39	0	39	39	39
	NOM	Correlation	-.286	.909	1.000	-.104	-.466
		Significance (2-tailed)	.069	.000	.	.518	.002
		df	39	39	0	39	39
	LR	Correlation	.260	-.082	-.104	1.000	.337
		Significance (2-tailed)	.100	.612	.518	.	.031
		df	39	39	39	0	39
	FSIZE	Correlation	-.002	-.435	-.466	.337	1.000
		Significance (2-tailed)	.992	.004	.002	.031	.
		df	39	39	39	39	0

Note: EVA refers to Economic Value Added (Dependent Variable); FSIZE refers to Size of the firm; DUAL indicates CEO Duality; SOTB indicates Size of the Board; NOM refers to Number of Board meetings; LR which indicates Leverage Ratio

Interpretation

A correlation study was conducted in order to study the relationship between both the financial performance and corporate governance variables. From the above table it can be observed that Economic Value added is mildly negatively correlated with SOTB,NOM,FSize. However the control variable DUAL does not have any correlation with Fsizeor has a very negligible correlation. At the same time it can be seen that SOTB has a high positive correlation with NOM with a correlation coefficient of 0.909.SOTB has a mild negative correlation with LR and Fsize. NOM has a slight negative correlation with LR, however there is a higher negative correlation of -0.466 observed between NOM and Fsize.

It is seen that Leverage Ratio has a small positive correlation of 0.337 with FSize.

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Table VII: Correlation of MVA on Corporate Governance variable

Correlation MVA on Corporate Governance Variable

Correlations							
Control Variables			DUAL	SOTB	NOM	LR	FSIZE
MVA	DUAL	Correlation	1.000	-.305	-.310	.207	.018
		Significance (2-tailed)	.	.052	.048	.193	.912
		df	0	39	39	39	39
	SOTB	Correlation	-.305	1.000	.910	-.131	-.320
		Significance (2-tailed)	.052	.	.000	.415	.041
		df	39	0	39	39	39
	NOM	Correlation	-.310	.910	1.000	-.193	-.356
		Significance (2-tailed)	.048	.000	.	.228	.022
		df	39	39	0	39	39
	LR	Correlation	.207	-.131	-.193	1.000	.615
		Significance (2-tailed)	.193	.415	.228	.	.000
		df	39	39	39	0	39
	FSIZE	Correlation	.018	-.320	-.356	.615	1.000
		Significance (2-tailed)	.912	.041	.022	.000	.
		df	39	39	39	39	0

Note: MVA refers to Market Value Added (Dependent Variable); FSIZE refers to Size of the firm; DUAL indicates CEO Duality; SOTB indicates Size of the Board; NOM refers to Number of Board meetings; LR which indicates Leverage Ratio

Interpretation

From the above correlation matrix it can be seen that DUAL has a small negative correlation with SOTB and NOM.DUAL has a small negative correlation of 0.310 with NOM. However DUAL has a slight positive correlation of 0.207 with LR whereas Fsize has a negligible correlation coefficient of positive 0.018.

It is also found that SOTB has a slight negative correlation with LR and Fsize whereas has a high positive correlation of 0.910 with NOM.

NOM has a negative correlation of 0.193 with LR but has a higher negative correlation with Fsize. Leverage ratio enjoys a positive correlation with Fsize.

Regression Analysis

Table VIII : Model Summary with dependent variable as EVA

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.906[a]	.821	.796	4580.2376	.821	32.961	5	36	.000

a. Predictors: (Constant), FSIZE, DUAL, LR, SOTB, NOM

b. Dependent Variable: EVA

Interpretation:

Adjusted R-Square

Adjusted R-square Measures the proportion of the variance in the dependent variable (Economic Value Added) that is explained by variations in the independent variables. In this study, the "Adjusted R- Square" shows that 79.6% of the (relation) is explained.

R-Square

R-square measures the proportion of the variation in the dependent variable (Economic Value Added) that was explained by variations in the independent variables. In this study, the "R-Square"' tells that 82.1% of the variation (and not the variance) is explained.

TableIX: Regression Model Summary with dependent variable as MVA

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.837[a]	.700	.658	203230.2518	.700	16.785	5	36	.000

a. Predictors: (Constant), FSIZE, DUAL, LR, SOTB, NOM

b. Dependent Variable: MVA

Interpretation:

Adjusted R-Square

Adjusted R-square Measures the proportion of the variance in the dependent variable (Economic Value Added) that is explained by variations in the independent variables. In this study, the "Adjusted R- Square" shows that 70.0% of the (relation) is explained.

R-Square

R-square measures the proportion of the variation in the dependent variable (Economic Value Added) that was explained by variations in the independent variables. In this study, the "R-Square"' tells that 83.7% of the variation (and not the variance) is explained.

Table X: Pooled least Squares Model Summary with dependent variable as EVA

Model: 1

Dependent Variable: EVA?				
Method: Pooled Least Squares				
Date: 13/01/15 Time: 00:25				
Sample: 2001 2014				
Included observations: 14				
Cross-sections included: 14				
Total pool (balanced) observations: 42				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DUAL?	-6.368268	2.844719	-2.238628	0.0273
SOTB?	2.31E-05	1.42E-05	1.625881	0.1070
NOM?	0.744919	0.423064	1.760769	0.0812
LR?	0.824924	0.249425	3.307297	0.0013
FSIZE?	-0.128832	0.173166	-0.743980	0.4586
Fixed Effects (Cross)				
_INFY—C	1.023818			
_WIPRO—C	1.641641			
_HCL—C	0.240647			
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.249914	Mean dependent var		1.030583
Adjusted R-squared	0.141729	S.D. dependent var		2.902495
S.E. of regression	2.688957	Akaike info criterion		4.939749
Sum squared resid	751.9707	Schwarz criterion		5.311415
Log likelihood	-280.3850	Hannan-Quinn criter.		5.090684
F-statistic	2.310053	Durbin-Watson stat		1.921274
Prob(F-statistic)	0.007055			

Note: EVA refers to Economic Value Added (Dependent Variable); FSIZE refers to Size of the firm; DUAL indicates CEO Duality; SOTB indicates Size of the Board; NOM refers to Number of Board meetings; LR which indicates Leverage Ratio

Interpretation

Pooled Least squares method was used to conduct the regression. The dependent variable was taken as Economic Value Added and the regression was run in order to estimate the relationship between the financial performance indicators and the other corporate Governance indicators such as DUAL, SOTB, NOM, LR, FSize.It is seen from the study that the coefficients for the variable DUAL and Fsize are negative and is -6.368268 and -0.128832 respectively. The coefficient of SOTB is negligible as it is 0.0000231.

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Durbin Watson Statistics value is 1.92127 for EVA and 1.70 which is in the range of (1.5-2.5) and hence there is no autocorrelation problem and this model indicates relationship between EVA and corporate governance variables is statistically insignificant (F-Statistics = 2.3100 with p value=0.007)Thus EVA is explained by the corporate governance variables at study.

It is observed that DUAL enjoys a probability of 0.0273 with a test statistic of -2.2386 which means the result is not statistically significant. Variables SOTB, NOM have probabilities of 0.1070,0.0812 and hence are not significant .However it is seen that Leverage Ratio has a t statistic of 0.0013 which is less than 0.05 and hence means that LR variable is significant.

It is observed that the probability of F statistic is 0.007055, which is less than 0.05, thus the relationship is statistically significant. The pooled least square method shows that the relationship between EVA is dependent on the corporate variables under study.

Table XI:Pooled least Squares Model Summary with dependent variable as MVA

Model: 2

Dependent Variable: MVA?				
Method: Pooled Least Squares				
Date: 13/01/15 Time: 00:27				
Sample: 2001 2014				
Included observations: 14				
Cross-sections included: 14				
Total pool (balanced) observations: 42				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DUAL?	-5.844230	2.886433	-2.024724	0.0455
SOTB?	-0.002249	0.002296	-0.979469	0.3296
NOM?	0.658850	0.422747	1.558495	0.1222
LR?	0.794863	0.250543	3.172560	0.0020
FSIZE?	-0.065839	0.171255	-0.384449	0.7014
Fixed Effects (Cross)				
_INFY—C	0.823804			
_WIPRO—C	1.456655			
_HCL—C	0.577902			
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.237879	Mean dependent var		1.030583
Adjusted R-squared	0.127957	S.D. dependent var		2.902495
S.E. of regression	2.710444	Akaike info criterion		4.955668
Sum squared resid	764.0365	Schwarz criterion		5.327333
Log likelihood	-281.3401	Hannan-Quinn criter.		5.106603
F-statistic	2.164080	Durbin-Watson stat		1.905981
Prob(F-statistic)	0.012086			

Note: MVA refers to Market Value Added (Dependent Variable); FSIZE refers to Size of the firm; DUAL indicates CEO Duality; SOTB indicates Size of the Board; NOM refers to Number of Board meetings; LR which indicates Leverage Ratio

Interpretation

Pooled Least squares method was used to conduct the regression. The dependent variable was taken as Market Value Added and the regression was run in order to estimate the relationship between the financial performance indicators and the other corporate Governance indicators such as DUAL, SOTB, NOM, LR, FSize.It is seen that DUAL,LR have t statistics of -2.0247 and -0.9794 and thus are seen to have probabilities which are significant. The probabilities of DUAL and LR are 0.0455 and 0.0020 which means the relationship between MVA and these variables are statistically significant.

Durbin Watson Statistics value is 1.905981 for MVA which is in the range of (1.5-2.5) and hence there is no autocorrelation problem and this model indicates relationship between MVA and corporate governance variables is statistically insignificant (F-Statistics = 2.164080 with p value=0.012)Thus MVA is explained by the corporate governance variables at study.

The other variables including SOTB, NOM and FSize do not have a statistically significant relationship with the variable under study in this model that is MVA.

It is observed that the probability of F statistic is 0.012086 (for an F statistic of 2.164080), which is less than 0.05, thus the relationship is statistically significant. The pooled least square method shows that the relationship between MVA is dependent on the corporate variables under study.

Conclusion

Corporate performance influence both Economic value added and Market value added but it has more influence on the economic value added of the company which reveals that corporate governance influences significantly how well a company has produced value for its investors than the company has managed to create shareholder's value on corporate success.

The variables DUAL and LR and their relationship with MVA and is statistically significant.
Leverage Ratio is a variable which has a significant impact on the EVA.

Summary, Findings, Conclusion of the Study

Corporate governance development is very high in developed countries and research on Corporate Governance in India is very low due to the relatively opaque disclosure practices followed by Indian companies. Economic crises connected to corporate scandals have resulted in a search for ways to eliminate failures in corporate and hence there is a need to study corporate governance to protect the interest of stakeholders. Corporate governance in emerging economies such as India poses a challenge due to the typical characteristics

associated with such economies such as imperfect product market, illiquid capital market, rigid labor market and regulatory environment, and lack of adequate contract enforcing mechanisms. Such problems coupled with the problem of institutional void leads to information asymmetry.

Findings shall be of special interest to the corporate parties involved in corporate governance include the regulatory body (e.g. the board of directors, the Chief Executive officer, management, shareholders and auditors) and other stakeholders who take part such as suppliers, employees, creditors, customers and the community at large.

Findings

1. The dependent variable was taken as Economic Value Added and the regression was run in order to estimate the relationship between the financial performance indicators and the other corporate Governance indicators such as DUAL, SOTB, NOM, LR, FSize.

2. It is seen from the study that the coefficients for the variable DUAL and Fsize are negative and is -6.368268 and -0.128832 respectively. The coefficient of SOTB is negligible as it is 0.0000231.

3. It is observed that DUAL enjoys a probability of 0.0273 with a test statistic of -2.2386 which means the result is not statistically significant. Variables SOTB, NOM have probabilities of 0.1070, 0.0812 and hence are not significant.

4. However it is seen that Leverage Ratio has a t statistic of 0.0013 which is less than 0.05 and hence means that LR variable is significant.

5. With respect to MVA, it was seen that DUAL,LR have t statistics of -2.0247 and -0.9794 and thus are seen to have probabilities which are significant. The probabilities of DUAL and LR are 0.0455 and 0.0020 which means the relationship between MVA and these variables are statistically significant

6. The other variables including SOTB, NOM and FSize do not have a statistically significant relationship with the variable under study in this model that is MVA.

7. The variables DUAL and LR and their relationship with MVA and is statistically significant.

8. Leverage Ratio is a variable which has a significant impact on the EVA

9. Corporate performance influence both Economic value added and Market value added but it has more influence on the economic value added of the company which reveals that corporate governance influences significantly how well a company has produced value for its investors than the company has managed to create shareholder's value on corporate success.

10. Results of the analysis suggest that corporate governance has a strong influence on performance in the Indian context which is consistent with the findings ofAkshita Arora (2011)This suggests that properly designed mandatory corporate governance reforms can increase share prices in an emerging market such as India which is consistent with findings of Black and Khanna (2007)

6.2 Limitations of the Study

There are certain limitations of the study that must be acknowledged.

- While developing the corporate governance variables, we could not include some key variables such as firm's policy towards insider trading, presence of anti-takeover devices, default in payment of interest to creditors, etc. for the lack of availability of such data.
- This study develops corporate governance variables based on a sample size of 3 Information technology companies only. We have taken small sample size due to time constraints. This might have contributed to data inconsistency.
- There could be other financial measures also such as cash value added, profitability of firm such as Price earnings ratio, ROA, EPS, Cash value added, dividend yield etc which are not included in the study.
- We have also restricted our sample period to 14 years due to non-availability of data. It would be informative to know if our results hold during a different sample period and with a larger sample size.
- The data used will be collected from digital database Prowess so the data might have suffered from some limitations that are inherent in the database.

Scope for Future study

Further research could be conducted in this field by studying more number of firms and comparing the results of companies in the different industries. This would help establish the importance of Corporate Governance for the various sectors. Hence the results could establish the significance of corporate Governance for corporates in order to enhance operational and financial performance.

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