

# Corporate governance and market value of quoted companies in Nigeria (2003-2012)

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## Keyword

Corporate Governance Index, Market Value

## Abstract

*The study examined the effects of corporate governance mechanisms on the market valuation measured by Tobin's q and market-to-book ratio of non-financial listed firms in Nigeria using a comprehensive firm financial data covering the sample period of 10 years (2003-2012). Data set that included data on economic value of firms, data on corporate governance mechanism and related stock prices were obtained from the firms' annual reports, the publication of the Nigeria Stock Exchange (NSE) as well as the website of the firms. The study constructs corporate governance index as a measure of corporate governance mechanism using data from the firm's annual reports. The data were analysed through the use of pool ordinary least squared, fixed effect and random effect estimation techniques. The result showed that corporate governance mechanisms measured by corporate governance index are statistically and positively correlated with market valuation. The result also showed that corporate governance index in ordinary least squares model and in a fixed effect model is positively associated with market-to-book ratio in a robust test.*

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## 1. Introduction

The issue of corporate governance has attracted considerable attention of policy makers and academic researchers across the globe. The financial scandal or crisis around the world and the consequent collapse of major corporate institutions in both developed and developing economies have brought to the fore, or rekindled worldwide interest in the issue of corporate governance and the need for the practice of good governance both at the public and private enterprises. Because of the economic primacy of publicly quoted firms in most national economies, there is an ongoing debate across the globe on the need for good governance at the firm level. Corporate governance is increasingly understood among policy makers today, as a value enhancing strategy in a competitive environment and there is a growing consensus globally that corporate governance has a positive link to national growth and development. In fact the issue has also become so predominant in matters of industrialization, investment, capital market development. Countries with developed securities markets in Europe, US and Australia are also debating corporate governance measures and reforms. The purpose of this debate and the global initiatives is to enhance accountability and financial transparency in global capital market and this is based on the presumption that good corporate governance produces better firm value.

Corporate governance according to Cadbury Report (UK) is defined as the system by which businesses are directed and controlled. It is a system by which corporations are governed and controlled with a view to increasing shareholders values and meeting the expectation of other stakeholders. Today it is the most talked-about topic in business and has received considerable attention across the globe. The fundamental objectives of good corporate governance according to the Security and Exchange Board of India (SEBI) Report, is the

enhancement of shareholders' value keeping in view the interest of other stakeholders. In its broadest sense, corporate governance is maximising the shareholders' value while ensuring fairness to all stakeholders that is customers, employees, investors, vendors, government and the society at large. Pushing for higher governance standard has become a regular campaign with the participation of an increasing number of parties: academics, media, regulatory authorities, corporations, institutional investors, international organisation shareholders right watchdog etc. The issue has necessitated considerable interests on empirical research on the effectiveness of various corporate governance institutions and mechanisms and how they affect the performance and values of the firms. Thus, numerous initiatives have been proposed by many nations to address the issue and enhance their corporate governance practice such as the introduction of code of best practice, new listing/ disclosure rule, mandatory training for board directors, enforcement of code of governance etc.

This effort to ensure good corporate governance practice had also been extended to the developing countries. The issue became an important managerial task for many companies. In Nigeria for instance, there is a growing calls for effective corporate governance, particularly for public limited liability companies. This call is understandable in view of the importance of effective governance at both micro-economic and economy wide level. Also realizing the need to align with the International Best Practices, a code of Best Practice for Corporate Governance was issued and approved in Nigeria by the board of the security and exchange commission and Corporate Affairs Commission (CAC) in 2003. This was designed to entrench good business practices and standards for board and directors, chief executives officer, auditors and different stakeholders of listed companies, induce companies into increased transparency, ease the exercise of shareholders rights by investors, avoid the adoption of mechanisms that hamper the control of corporate governance by the market and advise on ways of ensuring full representation of a multiplicity of the shareholder's interest as regards the decision-making process.

Despite of these growing interests in corporate governance in Nigeria and the relative development in Nigeria capital market in comparison with other countries of the African continent, corporate governances in Nigeria are seemingly far from perfect as companies' still record incidence of financial scandal resulting from mismanagement and misappropriation of fund). This is evident with the crash in capital market in 2009-2010 in which companies suffered losses in share value and consequent loss of shareholders' confidence.

## 2. Literature review

Issues on corporate governance have been well documented in the literature. For example various researches have been conducted to examine the effects of corporate governance mechanisms measured by ownership structure, board composition, board and chief executive officer ownership, chief executive officer compensation and tenure on firm's value. The majority of the empirical researches prior to 2000 focused on understanding the relationship of specific corporate governance variables to firm value and according to Maceher and Anderson (1999), the results of these studies vary from country to country and are missed at best.

Early studies examined links between individual internal governance provision and Tobin's Q. For instance, Hermalin and Weisbach (1998) and Bhagat and Black (2002) found no link between the proportion of outside directors and Tobin's Q. Yermack (1996) found an inverse relationship between board size and Tobin's Q. Callahan et al (2003) documented a positive relation between management participation in the director selection process and Tobin's Q. However, in recent years a number of studies have examined the relationship between corporate governance index and firm value. The idea is to explore whether corporate

governance as a whole, either viewed as multiple rating factions or as measured by a composite score is related to firm value. One of such studies exploring the relationship between composite governance scores and firm value was the U.S research study conducted by standard and poor's (Patel and Dallas, 2002). The study concluded that companies can lower their cost of equity capital by producing higher transparency and disclosure to the capital markets. Gompers, Ishii and Metrick (2003) in their study of the relationship between corporate governance and firm value, constructed a governance index to proxy for the level of shareholders rights at about 1,500 large firms traded on US exchange during the 1990s. They found a strong relationship between corporate governance and firm value as measured by Tobin's Q.

More studies have examined summary measures of corporate governance and their linkage to firm valuation. Gompers et al (2003) used Investor Responsibility Research Center (IRRC) data, and found that firms with fewer shareholder rights have lower firm valuations and lower stock returns. Bebchuk and Cohen (2005) used IRRC data to show that staggered boards impede firms' value. Bebchuk et al (2005) used IRRC data to show that a three-factor "external governance index impedes firm valuation. Cremers and Nair (2005) maintain effective corporate governance requires both internal and external measures so they used IRRC data with shareholders activism, their proxy for internal governance. Also Haniffa and Hudas (2006) investigated the relationship between six corporate governance variables (board size, board composition, CEO duality, multiple directorship, ownership concentration and managerial shareholding) and two performance measures (Tobin Q and ROA) in Malaysia. They studied 347 firms listed on the Kuala Lumpur Stock Exchange (KLSE) between 1996 and 2000. They found that board size and ownership concentration are significantly associated with both market and accounting performance measures. Board size had a negative correlation with the market performance providing evidence that the market view big board as ineffective but had a positive correlation with accounting performance.

Brown and Caylor (2004) took another approach in evaluating corporate governance and firm performance. They created a broad measure of composite governance; Gov-score comprising of 51 factors in eight corporate governance categories based on a data set provided by Institutional Shareholder Services. They then relate Gov-score to operating performance (ROE, profit margin and Sales growth), valuation (Tobins Q) and shareholders payout (dividend yield and share repurchases) for 2,327 US firms and found that better governed firms are relatively more profitable, more valuable and pay out more cash to their shareholders. They also showed that good governance as measured using executive and director compensation is associated with good operating performance.

From the above review, it is evident that research into the relationships between specific corporate governance controls as well as composite corporate governance score and firm value and performance have been established. Though, the studies indicate mixed findings. For instance, some researchers have found positive relationship between corporate governance control mechanisms and market value of firm. Others have found a negative relationship between the proportion of external directors and firm performance. The limitation in the literature on the effects of corporate governance on firms' value is clear in that the existing relationship between corporate governance and the value of firms are not defined in developing market particularly, Nigeria the country considered in this research. Evidence and discussion of corporate governance progress within the capital market of Nigeria can only be found in a few studies (Ademola Oyejide and Adedoyin Soyibo; 2005, Ahmadu Sandal et al; 2001, Ivor Ogidefa 2008, and Habeen A Quadri; 2010). However, the existing literature on how good corporate governance contributes to improving the value of a firm is not well developed in Nigeria. No

single research thus far, has undertaken a comprehensive study of the differences in the relationship between the level of corporate governance sophistication of the firm and its contribution to firm value.

Therefore, there is the need to perform econometric tests to understand the process and mechanism by which the value of a firm is affected by corporate governance instruments in developing market like Nigeria. In addition, there is a requirement for testing the combination of corporate governance instruments so that the marginal benefit of each instrument can be improved and consequently affect the value of a firm in a positive manner

### **3. Methodology**

#### **3.1. Data and Source of Data**

The data used for this study were obtained from the audited financial statement of the firms listed on the Nigeria stock exchange between 2003 and 2012. Data gathered include financial and accounting information and corporate governance. The data were of various forms ranging from quantitative like; the number of independent director; number of shares held by each director; number of board of director to categorical like; list of shareholder holding more than 25% of the company and ending with qualitative data involving the scoring of corporate governance practice based on wording in the annual report suggesting compliance is being achieved.

The sample of the firms was selected using purposive sampling techniques. Two hundred and thirty seven (237) firms were listed on the stock exchange at the end of 2012. These firms were first screened for financial data availability during the sample period. Listed firms that did not have up-to-date published financial data were excluded from the study. The firms were also screened for corporate governance disclosure for the sample period and firms that did not meet corporate governance compliance disclosure in any of the year of the sample period were excluded in order to allow for consistency and comparability of data. The sample excluded all finance-related firms, banks, and insurance and utilities firms due to their differences in the regulatory requirements, financial reporting standard and compliance. Also, distressed firms and firms whose shares were not traded in stock market during the sample period were excluded leading to a sample consisting of 100 and representing a broad range of industry sectors. The sample firms represented about 67% of the number of firms and approximately 71% of total market capitalization of NSE (Nigeria Stock Exchange Web site, 2010).

#### **3.2 Measurement of variables**

##### **3.2.1 Non-governance Variables.**

The selection of variables was primarily guided by the results of the previous empirical studies such as Lawrence et al (2006), Parveen et al (2009), Zunaidah Sulong and Fauzias Mat Nor (2010). The measures of firm value creation used were Tobin's Q and market to book ratio. Tobin's Q has been widely embraced as a measure of firm value in finance and accounting literature (Holderness and Sheehan, 1988; Morck et al, 1988; Wruck, 1989; Hermalin and Weisbach, 1991; McConnell and Servaes, 1995; Claessen et al, 1997; Claessens, Djankov, Fan, and Lang, 2000). Three measures of Tobin's Q were used in this study; a simplified measures using the Market Equity-to-Book. That is, Equity ratio (Qa) was calculated for each firm and this was done by dividing the market value of equity by the net tangible assets attributable to shareholders. The market value is the share price multiplied by the number of ordinary share on issue at year-end. The market values were used because investors' valuation of firm goes beyond book values of assets and liabilities and they give a much better estimate of a company's equity (John Garger, 2010).

Tobin's Q was also estimated by determining the market value of the firm's equity plus total liabilities over the total assets of the firm (Qb) and this was done annually for each firm. This measure looks at the firm as a whole and not just equity capital. Book value was used for the debt and other liabilities in the absence of any secondary market for such claim in Nigeria. Also book value of assets was used rather than replacement cost. This is an expedient approach as any attempt to capture replacement costs can open up considerable measurement problems (Claessein et al, 1997; Clarkson & Satterly, 1997). Lastly, an average of Tobin's Q over eight years was determined based on the market value of the firm's equity plus total liabilities over the total assets of the firm. Lang, Stulz, and Walkling (1991) propose that Tobin's Q averaged over several years may improve the estimate over a one year estimate.

### 3.2.2 Corporate Governance Index

From an empirical point of view, there has been a long debate in the literature on how to measure the quality of firm corporate governance. This study used a broad corporate governance index, instead of looking at a single control mechanism, to provide a comprehensive description of firm level corporate governance for a broad sample of listed firms in Nigeria. The major areas of internal corporate governance mechanism in Nigeria based on the specific recommendation of 2003 code of best practice by the Board of the Security and Exchange Commission and Corporate Affairs Commission are; board structure, executive compensation, ownership structure, shareholders right and interest and financial disclosure and transparency. In line with these five areas, this study constructed general corporate governance index representing overall corporate governance in Nigeria and ranked the listed firms in Nigeria. This approach has become very popular in the literature (Black, Jang and Kim (2003), Klapper and Lover (2003) Drobetz, Schillhofer, and Zimmermann (2004), Beiner, Drobetz, Schmid, Zimmermann (2004) Andre L et al (2004) and Lawrence et al (2006) etc. The corporate governance index was constructed and designed to capture corporate governance commonly practiced by firms. The index was not survey-based. All questions were answered from public information disclosed by listed companies and not by means of potentially subjective or qualitative interview. Sources of information are company filings and annual reports.

The corporate governance index was a composite of 30 questions, covering the five broad categories. The number of the questions was set so that it would not be neither too small that would not capture the multivariate nature of corporate governance, nor too large, that would render data gathering difficult and subjective. Each question corresponds to yes or no answer. If the answer is "yes", then the value of 1 is attributed to the question; otherwise the value is 0. The index was the sum of the points for each question. The maximum index value was 30. Index categories were simply for presentation purpose and there was no weighing among questions. The corporate governance index questions that were applied in this study are shown in the appendix i.

### 3.3 Model Specification

Two econometric regression models were developed for this study. The first regression model examined Tobin's Q against the governance index score and selected control variable. The study consider both the composite governance index score as well as the score for the five sub-categories as prior researches have shown that the relationship can vary across the sub-categories. The following equation captures the overall governance score regressions.

$$Tobin's Q_{it} = a + \beta_1 GCI_{it} + \beta_2 Bod_{it} + \beta_3 excomp_{it} + \beta_4 Shar_{it} + \beta_5 own_{it} + \beta_6 DIS_{it} + \beta_7 Lev_{it} + \beta_8 Size_{it} + \beta_9 Age_{it} + \beta_{10} ROA_{it} + \mu_{it} + E_{it} \dots\dots\dots(i)$$

As a sensitivity check, the study used market-to book ratio as an alternative measure of firm value. Both Tobin’s Q and market-to-book metrics measure firm value based on book vis-à -vis market based measures. The regression model examined market-to-book ratio against the governance index score as well as the score for the five sub-categories and selected control variables.

$$Mrkval = a + \beta_1 GCI_{it} + \beta_2 Bod_{it} + \beta_3 excomp_{it} + \beta_4 Shar_{it} + \beta_5 own_{it} + \beta_6 DIS_{it} + \beta_7 Lev_{it} + \beta_8 Size_{it} + \beta_9 Age_{it} + \beta_{10} ROA_{it} + \mu_{it} + E_{it} \dots\dots\dots(ii)$$

Where; *Tobin’s Q* is a measure of firm’s value, *Mrkval* is Market/Book Ratio, *CGI* is firm level corporate governance index, *Bod* is board structure index, *Excomp* is chief executive officer compensation index, *Shar* is shareholders’ right index, *Own* is ownership structure index, and *DIS* is financial disclosure and transparency index.  $\mu$  denotes unobservable industrial effect and *E* denotes error term.

In order to provide an integrated framework, the study also investigated other crucial variables that are not contained in the corporate governance index but might influence the dependent variables. These variables were previously identified and selected from the literature, such as leverage (*Lev* is Leverage measured as the total debt/ total asset ratio), size (firm size proxied as the natural log of total asset), age (measured as number of years since listing rather than years of incorporation) and return on assets (EBIT/Asset Ratio). The inclusion of the control variables was to control for characteristics and industry type. Log of asset was employed as proxy for firm size effect, market to book was used as proxy for growth of the firm, and leverage was included as a control variable to proxy for financial leverage.

In the models given above, CGI and the sub-categories were the key explanatory variables and the other variables were the additional explanatory variables. The models showed whether Tobin’s Q and market/book ratio are positively related to corporate governance mechanism and which of the components drive the relationship between governance and firm value. The size of the firm, leverage and age are added as control variables in all the models. Prior researches have consistently shown that firm size can affect firm value, return on assets and stock returns. (Adetunji et al (2009 Parveen P, Gupta et al (2009). Return on asset was added to the equations to control for the impact of profitability in firm’s value.

From the above models, the main hypothesis tested is; there exist a positive relationship between the overall corporate governance measure and firm value. In order to enrich the policy implication, the study also investigates the importance of separate elements of corporate governance. Certainly, any of these hypotheses may not be true for a particular enterprise but the goal of the study is to investigate the overall tendency in the population using the given sample. The method of analysis is that of multiple regressions and the method of estimation is ordinary least square (OLS).

**4. Analysis, findings and discussion**

**4.1 Corporate Governance Score (CGI)**

Table 1 presents descriptive statistics on Corporate Governance Index for the sample firms in each year. Based on the Corporate Governance Index constructed in this study, a firm can achieve a composite score from 0 to 30. The mean composite governance score increased by approximately 1.25 from 2003 to 2010, the standard deviation and variance declined by 0.198 and 0.533 respectively and the range of scores was 9. This indicates that both the absolute and relative variation in the composite governance score is declining.

**Table 1: Descriptive Statistics CGI**

	2003	2004	2005	2006	2007	2008	2009	2010
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Mean	21.39	21.36	21.45	21.73	22.10	22.53	22.71	22.64
Standard Deviation	1.51	1.50	1.51	1.38	1.31	1.27	1.17	1.32
Variance	2.28	2.25	2.27	1.89	1.73	1.60	1.38	1.74
Median	21.50	21.00	21.50	22.00	22.00	23.00	23.00	23.00
Maximum	24.00	24.00	24.00	24.00	24.00	25.00	26.00	26.00
Minimum	15.00	15.00	15.00	17.00	18.00	18.00	19.00	17.00
Range	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
N	96	97	100	100	100	100	100	100

*Author computation 2012*

#### 4.2 Non-governance Variables.

Table 2 below shows the summary statistics of the valuation variables used in the study. The main dependent variable is Tobin's q defined as market value of assets/book value of assets. In alternative specification, the study also used market-to-book ratio as a sensitivity check. The table also provides descriptive statistics firms' characteristics. The mean (median) Tobin's q of the sample is 6.23 (3.80) that is, market value of the average (median) firm is slightly greater than the book value of its assets. The mean of firm size is 9.27. This reveals that most of Nigerian firms are small as the minimum value is 7.29 and the maximum value is 11.52. In addition, the high value of standard deviation (0.83) shows that the variation among firms in terms of size is high. The mean of age is 22.08 years, which means that the age of Nigerian firm is moderate as the minimum value is 1 year and the maximum value is 50 years. However, the very high standard deviation of firm age (10.6) demonstrates that the differences in age of firms are large.

**Table 2: Summary of Descriptive Statistics of Valuation Variables.**

Variable	No of observation	Mean	Median	Standard Deviation	Minimum	Maximum
Tobin's Q. Qa	781	6.23	3.80	7.89	0.08	77.24
Qb	781	7.92	2.27	27.67	-23.36	49.00
Qc	781	0.77	0.47	0.98	0.01	9.65
Market-to-book	781	4.39	2.10	7.06	0.00	73.68
Lnas	781	9.27	9.28	0.83	7.29	11.52
Lev	781	1.22	0.13	1.28	0.00	1.79
Age	781	22.08	25.00	10.59	1.00	50.00

*Author's computation 2012*

#### 4.3. Multicollinearity Test

To investigate the existence of multicollinearity, the Variance Inflation Factor (VIF) for each of the the explanatory variables are computed. As reported in table 3.1 below, the maximum VIF is 1.241 which is lower than ten, a number that is used as a rule of thumb as an indicator of multicollinearity in the research model. The results in table 4.5 reveal that there is no multicollinearity problem because the VIF for each independent variable is less than 10.

**Table 3: Variance Inflation Factor**

Variable	VIF
CGI	1.056
BOD	1.221
DSFT	1.321
OWN	1.072
EXC	1.241
SHA	1.236
Lnas	1.096
Lev	1.211

Age	1.221
Roa	1.024
Mrk	1.131

*Author's computation 2012*

#### 4.4 Regression Results

The first hypothesis explores the association between composite governance scores and firm value. The first regression is done by regressing Tobin's Q on the corporate governance index and other firm characteristics, the size, age, leverage, and return on asset (ROA). These control variables are typical variables used in corporate valuation studies. By controlling these variables, the study isolates the impact of corporate governance variable on market valuation.

**Table 3: CGI regression on measures of market valuation (Tobin's q)**

	OLS			Fixed effects			Random effects		
	Qa	Qb	Qc	Qa	Qb	Qc	Qa	Qb	Qc
Constant		-17.554 (-0.883)	0.316 (-1.177)	15.926 (7.043)	-82.546 (-2.429)	1.981 (7.048)*	11.138 (6.597)*	1.338 (0.085)	1.403 (6.682)*
CGI	0.379 (9.228)**	-0.398 (-0.460)	0.037 (4.939)**	0.206 (2120)**	-1.636 (-1.116)	0.026 (2.180)**	0.208 (2.779)**	-0.080 (-0.075)	0.025 (2.768)**
Lev	(0.007) (-6.944)*	-1.930 (-0.189)	6.900 (-2.837)*	3.710 (-2.306)*	-1.590 (-0.087)	-4.930 (-3.328)*	-1.220 (-2.127)*	-1.870 (0.256)	-1.580 (-2.132)*
Lnas	(0.743) (-7.893)	2.527 (-1.547)	-0.103 (-7.840)*	-2.082 (-9.288)	13.119 (-3.899)*	-0.258 (-9.286)*	-1.511 (-9.679)**	-0.060 (-0.051)	-0.189 (-9.738)**
Age	0.074 (1.061)	(0.169) (1.223)	0.001 (1.111)	0.026 (0.688)	-0.169 (-0.298)	0.002 (0.531)	-0.004 (-0.027)	0.129 (1.427)	-0.000 (-0.082)
Roa	0.385 (2.695)**	0.318 (0.213)	0.046 (2.601)**	0.388 (3.754)**	-0.548 (-0.352)	0.048 (3.785)	0.400 (3.918)**	0.1119 (0.075)	0.050 (2.847)**
Obs no	781	781	781	781	781	781	781	781	781
Adj R <sup>2</sup>	0.910	0.12	0.912	0.913	0.12	0.968	0.912	0.12	0.913

*Note: \*, \*\*, and \*\*\* indicate significance at 1%, 5%, and 10% levels significance*

A review of the result presented in Table 3 above indicates that Tobin's Q (qa and qc) are related to the corporate governance scores as reported by previous studies. OLS, fixed effect, and random effect models indicate that CGI has a statistically significant at 1% and 5%, level-positive effect on firm valuation. The result shows that the measures of q as applied in the regression using data on CGI and other control variables have positive relationship except qb which shows negative relationship and was not found to be significant in all the models. In general, the results are robust for all three evaluation methods. Though, the co-efficient of q are weak, many of the control variables are significant in predicting Tobin's q (significant at p = 0.01, 0.05). Interestingly, the firm size (measured by log of asset) is negative, suggesting that larger firms have lower valuation relative to their assets. The results offer strong support that larger listed firms are not well regarded in the market. The negative relationship between size and value is understandable in the context of the Nigerian economy with the collapse of corporate organizations. The leverage results are statistically significant at the 1% in every



regression. The co-efficient in each regression are negative and significant at 1% level. Negative relationships are consistent with conventional theory, which supports the concern that investors have concerning high levels of debt carried by listed firms. Surprisingly, the study finds that age is insignificantly related to valuation (and even negative in some cases) and not surprisingly, firms that have better financial performance (measured by ROA) have higher market valuation. For the overall governance measure the study estimates that with fixed effect a two-standard deviation change in governance predicts 20.6 in Tobin's Q. The overall results as measured by adjusted R2 and by which the independent variables explain over 90% of the variance in the value of firms in all the regressions show the fitness of the model.

#### 4.5 Results for Different Governance Measures

The study takes more detailed look into the governance components. Table 4 reports the results of regression on the relationship between market valuations on individual components. Each component was included as a separate independent variable with pool OLS, firm's fixed effects and firm's random effects specification. These regressions show that components are responsible for the predictive effects of the overall index. The results are somewhat sensitive to the empirical model. Disclosure is overall the most powerful indicator especially in firm's random effect and firm's fixed effect regression where it has t-statistics of close to 4 in qa and 5 in qb. The regression of the market valuation on the five (5) variables used to construct the corporate governance index for listed firms becomes necessary as prior researches have shown that the relationship can vary across the sub-categories. This was done in a similar way with full control variables. In robustness checks, similar results for each sub-index are obtained.

**Table: 4 Regression result Governance Component on market valuation**

Dependent Variable Tobin's Q	OLS			Fixed effect			Random effect		
	Qa	Qb	Qc	Qa	Qb	Qc	Qa	qb	Qc
DIS	0.229 (3.628)*	0.021 (2.648) **	0.021 (4.525) *	0.231 (3.691) *	0.004 (1.981)	0.412 (3.282)*	0.312 (3.331) *	0.022 (2.112) **	0.316 (5.146) *
Bod	0.564 (2.845) **	-0.826 (-0.519)	0.020 (0.845)	0.062 (0.728)	0.061 (1.991)	0.214 (0.748)	0.020 1.218	0.008 (1.212)	0.020 (0.845)
Own	0.131 (0.931)	3.377 (1.533)	0.048 (1.745)	0.324 (2.116) *	0.461 (1.316)	0.321 (1.674)	0.048 (2.714) **	0.362 (1.722)	0.426 (2.682) *
Shar	0.745 (5.103)*	3.917 (0.745)	0.009 (2.340) *	0.064 (2.721) *	0.506 (0.821)	0.762 (2.140) **	-0.004 (-0.010)	6.381 1.099	5.540 (0.001)
excomp	0.602 (2.541)* *	0.437 (0.269)	0.044 (0.749)	0.040 (1.721)	(3.481) (1.066)	1.220 (0.414)	0.296 (1.909)	0.850 (0.414)	0.009 (0.340)
Age	0.001 0.002	0.108 (1.127)	0.344 (1.540)	0.241 (1.621)	-0.343 (-0.538)	0.001 (0.344)	-0.004 (-0.287)	0.150 (0.147)	0.001 (0.344)
Lev	-0.309 (-5.100)	-2.170 (-0.292)	0.362 -4.251	-1.240 (0.216)	-1.480 (-0.080)	5.540 (0.362)	1.930 (0.197)	-2.430 (-0.232)	5.540 (0.362)
Lnas	-0.7617 (-4.251)	-0.482 (-)	0.612 (-)	-0.621 (-)	12.601 (3.565)	-0.251 (8.539)	-1.483 (-)	2.157 (1.238)	-0.251 (-)

	**	0.385)	2.839)*	1.214)	**	**	9.025)*		8.539)**
ROA	-0.206 (-3.186)	-0.204 (-0.123)	-0.206 (-124)	-0.204 (0.123)	-0.640 (-0.396)	-0.008 (0.344)	-0.426 (-4.012)	-0.412 (-0.264)	-0.050 (-3.774)
Intercept	28.219 (-1.321)	-28.419 (-1.219)	-28.419 (-3.241)	- 28.649 (-1.220)	(- 98.418) (-2.284)	1.994 (5.509)	1.994 (5.509)	-46.585 (-1.695)	1.415 (5.034)
Obs no	763	763	763	763	763	763	763	763	763
Adj R <sup>2</sup>	0.17	0.13	0.21	0.11	0.31	0.41	0.41	0.42	0.32

Note that \*, \*\*, and \*\*\* indicate significance at 1%, 5%, and 10% levels of significance

The table reports estimated co-efficient, t-statistic (in parenthesis) and adjusted R<sup>2</sup> from regression of Tobin's q value on individual governance variable. Among the five (5) control variables, both the ROA and leverage have negative relationship with **qa**. Other control variables except age are significant. Also, all the corporate governance components except ownership structure have significant relationship with the market valuation in pool OLS result. In the second regression, qb was regressed on corporate governance variables. The overall results are mostly inconsistent with those from the first regression. The co-efficient of the variables shareholders right and executive compensation become statistically insignificant although their signs remain the same as in the first regression. For the regression on qc, the co-efficient of board of director becomes insignificant but remain positive. All the three regressions have relatively high explanatory power as R squares are between 0.17 and 0.42. The control variable of size and leverage have negative and significant co-efficient.

In summary, the results from the three regressions with Tobin's Q as dependent variables are mostly consistent with the prediction of the corporate governance theories and this justifies the construction of corporate governance index aggregating the effects of each corporate governance component.

#### 4.6 Corporate Governance and Market-to-book Ratio

For a sensitivity check, and a robust test, the study further tested the robustness of the result to different specifications of dependent and independent variables. Table 5 reports the summary results for the dependent variable, for OLS, random and fixed effects estimations. Each cell reports results from a separate regression and all models include the same set of control variables. The study used market-to-book ratio as an alternative measure of firm value. The OLS, fixed effect, and random effect results using the corporate governance index are presented in the columns 1, 3, and 5 while the columns 2, 4, and 6 present results using the five components of the governance score. The results are generally consistent with those regressions with Tobin's q as the measure of the firm valuation. Notably the R-square remains quite high.

**Table 5 Governance Relationship with Value using market-to-book ratio**

Dependent variable market-to-book ratio						
	pool OLS		Fixed effect		Random effect	
Intercept		-1.051 (-1.028)	16.776 (2.408)**	-10.531 (-1.693)	3.552 (0.689)	0.341 (2.945)**
CGI	0.334 (2.745)**		0.624 (2.821)*		0.473 (2.072)**	
DIS		1.216 (2.304)*		1.088 (1.875)*		0.198 (0.230)
Bod		1.186 (2.843)**		1.300 (3.080)**		1.188 (2.425)**

Own		1.065 (1.818)		1.370 0.674		1.644 (2.423)**
EXC		-0.896 (-2.075) *		2.267 (1.574)		-0.285 (-0.450)
Shar		-2.050 (1.774)		-6.000 (-0.160)		0.874 (0.663)
Lev	-2.690 (-1.373)	-3.400 (-1.718)	-3.040 (0.081)	-2.917 (-4.097)	-8.390 (-0.288)	-1.220 (-0.418)
Lnas	-0.244 -0.870	-0.202 (-0.634)	-2.551** (-3.7172)	0.223 (1.736)	-1.011 (-2.143)	-1.247 (-2.557) **
Age	-0.035 -1.450	-0.045 (-1.769)	0.254 (2.177)***	-0.05 (-1.985)	-0.009 (0.188)	-0.028 (-0.566)
Roa	1.052** (2.481)	242 (2.824)**	0.303 (0.947)	0.278 (0.851)	0.388 (2.230)*	0.349 (2.084)**
Obs no	781	763	781	763	781	763
Adj R <sup>2</sup>	0.73	0.28	0.61	0.57	0.74	0.016

*Note that \*, \*\*, and \*\*\* indicate significance at 1%, 5%, and 10% levels significance.*

The main result is found to be generally robust and significant for the aggregate corporate governance index and some individual components. The individual indices have varying significant levels. All except shareholders component are significant in market-to-book regression using OLS. In general, the market-to-book results are less significant than Tobin's Q results. The study also introduced various specifications for control variables. This produced even less significant result for market-to-book regression. The Tobin's Q results were unaffected by these changes. However, the overall picture remains largely unchanged- governance is significantly and positively associated with different measures of firm valuation.

Also, the regression on all different areas of firm-level governance shows that components have positive impact on valuation and only a few of them are statistically significant on their own. Moreover, there is no clear pattern on what works best. In terms of valuation, it seems that the impact of disclosure and financial transparency is the most. The regression results also reveal that all the control variables relate to market valuation except age. Previous studies have consistently identified age as having explanatory power in the regression. However, the finding in this study fails to identify any significance in the co-efficient of age. The variable was not removed from the regression because of the strong prior theory that supports its inclusion.

## 5. Conclusion

This study has followed the approach used in the literature and empirically analyzed the effects of corporate governance index (CGI) on market valuation. The assumption of the empirical work is that the contribution of good corporate governance practices in Nigeria is positive and this was tested by looking at the relationship between composite governance index and individual components of governance and market valuation. Within the limitation presented by time and absence of comprehensive data base, the study's finding is in line with earlier empirical works which suggested a positive relationship between corporate governance and market valuation.

The models in this study show in the context of Nigerian economy how corporate governance index help to improve market valuation. The empirical estimation has the implication on how Nigerian firms and economy at large can increase productivity, performance and improve value at the firm-level through adoption and implementation of code of best practices. The results also show in a descriptive statistics a high degree of compliance with CG

by listed firms in Nigeria. The results indicate that Nigerian firms have good corporate governance practices and that firms with better corporate governance have a higher valuation

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## Appendix i : Corporate governance index questions

### *Disclosure and Financial transparency*

1. Does the company produce its legally required financial reports by the required date?
2. Does the company use an international accounting standard?
3. Does the company use one of the leading global auditing firms?
4. Does the company have audit committee?
5. Does audit committee have a written charter or terms of reference?
6. Does the company clearly and fully disclose directors total emoluments and those of the chairman and highest paid directors including pension contribution and stock options where the earnings are in excess of 500,000naira?

***Board Structure / Composition and Functioning***

7. Are the chairman of the board and chief executive officer not the same?
8. Is the board clearly not made up of corporate insiders and controlling shareholders?
9. Do members include at least one director representing minority shareholder?
10. Do board members serve consecutive one-year term as recommended by the security and exchange commission?
11. Does annual report indicate the position and function of each board member?
12. Is the classification of directors as independent, owner and related included in the annual report?
13. Is the board size between 5 and 15 as recommended by the security and exchange commission?
14. Is shareholder approval required to change board size?

***Ownership and Control Structure***

15. Do controlling shareholders own less than 50% of the voting right?
16. Is the percentage of voting share in total capital more than 80%?
17. Is the controlling shareholders 'ratio of cash-flow rights to voting rights greater than 1?
18. Are the executives and directors subject to stock ownership structure?

***Executive Compensation***

19. Does company have a remuneration committee?
20. Does the chief executive officer not the chairperson of the committee?
21. Were stock incentive plans adopted with shareholders approval?
22. Are the goals used to determine incentive awards aligned with the company's financial goals?
23. Is remuneration committee wholly composed of independent board members?
24. Are non-executive board members paid in cash and some form of stock-linked compensation?
25. Are non-executive board members paid entirely in some form of stock-linked compensation?
26. Does company remuneration committee have written charter or terms of reference?
27. Non-executive directors do neither participate in share option schemes with the company nor be pensionable by the company?

***Shareholder Right***

28. Do all common or ordinary equity shares have one-share, one vote with no restriction?
29. Does the company charter grant additional voting rights beyond what is legally required?
30. Does the company charter establish arbitration to resolve corporate conflicts?