

## **Corporate Attribute of Board Size and Market Value of Firms in the Nigerian Chemical and Paints Industry**

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### **Abstract**

*This study examines the relationship between corporate attribute of board size and market value of firms in Nigerian chemical and paints industry. A sample of six companies was used for the period of 2004 to 2012. The study uses board size as corporate governance attribute while market price of shares was used to proxy market value of equity. Using correlation and multiple regression analysis, the results of the study shows that board size (BS) has insignificant and negative impact on market value of equity implying that increasing the number of directors on the board decreases the market value of equity. This suggests that the industry should maintain a small but an effective board capable of exercising better control and monitoring of management activities.*

**Keywords:** corporate attribute, market value of equity

### **1. Introduction**

The last two decades have witnessed a flurry of initiatives around the world to improve corporate governance. Hence, the corporate governance structure specifies the distribution of rights and responsibilities among the different participants in the organization such as the board of directors, managers, shareholders and other stakeholders and laid down rules and procedures for decision-making. The increasing interest dedicated to corporate governance can be explained in light of the recent collapse of giant companies such as Enron, World com, Parmalat, Oceanic Bank and Intercontinental Bank. The collapse of these giants gave raise to high concentration on corporate governance. Both investors and shareholders are interested in corporate governance, the former in order to invest with greater awareness and fewer risks, the latter in order to exploit the positive effects of good governance on the market value of the firm.

A company's market value is a good indication of investors' perceptions of its business prospects. The relationship between corporate governance and firm market value is an essential area to focus on, as better-governed firms could be more profitable today; investors could expect higher future profitability; they could pay more dividends for a given level of profits; they could make better investments; or investors could value the same earnings (or dividends) more highly. Market value is determined by the valuations or multiples accorded by investors to companies, such as price-to-sales, price-to-earnings, enterprise value-to-Earnings before Interest Tax and Dividend, and so on. The higher the valuations, the greater the market value of the firm. Market value can fluctuate a great deal over periods of time, and is substantially influenced by the business cycle and the sector in which a company operates.

Market values plunge during the bear markets that accompany recessions, and rise during the bull markets that are a feature of economic expansion. Market value is also dependent on numerous other factors, such as the manner in which the company is being governed that is the corporate governance put in place in the company's structure, the sector in which the company operates, its profitability, debt load and the broad market environment these and other factors motivates the selection of Nigerian chemicals and paints industry. In view of the above, the main aim of this study is to examine the relationship between corporate attribute and market value of equity of Nigerian chemical and paint industry in Nigeria for the period 2004 to 2012, by relating the component of corporate governance of board size with the market value.

## 2. Literature Review

The notion of corporate governance can be dated back to 1932, when Berle & Means argues that, in practice, managers of a firm pursue their own interests rather than the interests of shareholders. The contractual nature of the firm and the principal-agent problem highlighted by Berle & Means led to the development of the agency approach to corporate finance. Allen & Gale (2001) address the issue of shareholders ensuring that non-owner managers pursue the shareholders' interests. However, another conflict of interests arises as controlling shareholders take actions to benefit themselves at the expense of minority shareholders.

Many definitions and postulations have been made by academic scholars, legal practitioners, professional, regulatory agencies, government institution, NGO and international financial institution with respect to defining corporate governance all of which stress the potential conflicts of interest between insiders (managers, boards of directors, and majority shareholders) and outsiders (minority shareholders and creditors) of the company. The set of internal and external mechanisms to balance these conflicts of interest is what it is usually known as corporate governance (Garay & Gonzalez, 2008).

In words of Shleifer & Vishny (1997) "corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment" (p: 737-783) Corporate governance ensures that the measures put in place works for the benefit of the firm and can help in increasing firm's performance.

Cadbury (1992) suggested that corporate governance deals with the value creation of the shareholders by effectively utilizing the assets of a firm. Finally, Monks & Minow (2001) defined corporate governance as the mechanism by which the board of directors improves the value of the shareholders by controlling the actions of managers, CEO and other stakeholders in a firm. Johnson & Scholes (2005) main concern is who the organization is to serve.

### Corporate Governance Dimension

Corporate governance is a multi-dimensional construct that consists of many systems and processes that elevate the monitoring and control functions in the firm. Prior literature presents several key dimensions to corporate governance such as ownership and board structures, audit committee and financial disclosure. This study focuses on one corporate governance dimension, which is board composition because of its direct impact on investors and stakeholder's decision which subsequently have direct effect on firms' market value.

The board consists of two types of directors; outsider (independent) and insider directors. The majority of directors in a board should be independent to make rational decisions and create value for the shareholders. The role of independent directors is important to improve the value of a firm as they can monitor the firm and can force the managers to take unbiased decisions. The independent directors can also play a role of a referee and implement the principles of corporate governance that protect the rights of shareholders (Bhagat & Jefferis, 2002; Tomasic, Pentony & Bottomley, 2003).

Similarly, internal directors are also important in safeguarding the interests of shareholders. They provide the shareholders with important financial information, which will decrease the information asymmetry between managers and shareholders as argued by Bhagat & Black (1999) and Bhagat & Jefferis (2002). The board size should be chosen with the optimal combination of inside and outside directors for the value creation of the investors. Shareholders are likely to expect outside directors on the board as vigilant monitors of management's performance and behavior. Board monitoring is likely to control managerial behavior because it is a natural phenomenon when one is at close monitoring and surveillance he acts accordingly.

### Concept of Market Value

Market value can said to be the price an asset or an item of monetary value would fetch in the market place. Market value is also commonly used to refer to the market capitalization of a publicly-traded company, and is obtained by multiplying the number of its outstanding shares by the current share price. Market value is easiest to determine for exchange-traded instruments such as stocks and futures, since their market prices are widely disseminated and easily available, and is a little more challenging to ascertain for over-the-counter instruments like fixed income securities.

A company's market value is a good indication of investors' perceptions of its business prospects. The range of market values in the market place is enormous, ranging from a company with the smallest capital base to the biggest and most successful company operating in the stock market. Market value is determined by the valuations or multiples accorded by investors to companies, such as price-to-sales, price-to-earnings, enterprise value -to-Earnings before Interest Tax and Dividend, and so on. The higher the valuations, the greater the market value of the firm. Market value can fluctuate a great deal over periods of time, and is substantially influenced by the business cycle. Market values plunge during the bear markets that accompany recessions, and rise during the bull markets that are a feature of economic expansion. Market value is also dependent on numerous other factors, such as the manner in which the company is being governed that is the corporate governance put in place in the company's structure; the sector in which the company operates Company's profitability, Debt load and the broad market environment. Market value for a firm may diverge significantly from book value or shareholders' equity. A stock would generally be considered undervalued if its market value is well below book value, which means the stock is trading at a deep discount to book value per share. This does not imply that a stock is overvalued if it is trading at a premium to book value, as this again depends on the sector and the extent of the premium in relation to the stock's peers (Omura 2005).

How strongly does a firm's corporate governance behavior affect the market value of its shares? Intuitively, governance behavior should matter. But evidence that the governance behavior of Nigerian firms affects their market value is scarce. Most tests of whether variations in corporate governance behavior between Nigerian firms affect firm value find either no effect or an economically small effect. And yet, perhaps the weak results are found largely because the variation in Nigerian firm behavior is small. After all, the minimum quality of Nigerian corporate governance, set by law and by norms so widely accepted that almost no public firms depart from them, is quite high. Some corporate governance actions affect value, but the effect is usually economically small a percentage point or two. Effects of this size are found, for example, from a staggered board, eliminating cumulative voting and other antitakeover provisions.

### **Corporate Governance and Market Value**

Most literatures of corporate governance that relates to market value focus on one aspect of corporate governance and determine their effects on firm market value, particularly the relationship of ownership and market value (Hiraki *et al*; 2003, Sung; 2003, and Chen; 2001 cited in Core 2005) investigate ownership structure and market value in Japan, Korea and China respectively. Scholars have attempted to link general corporate governance and firm value.

For instance, Gompers (2003) has constructed such corporate governance index to evaluate shareholders right at firm level. It reveals that higher index score gives better return by taking long position of a stock. Mostly, they construct their corporate governance index in 5 categories: Delay, Protection, Voting, Other and State. In these categories, there are 24 governance rules with equal weights in index, such as golden parachutes, blank check and by laws. Although this index is comprehensive on external forces of corporate governance, internal factors, such as board size, board composition, corporate control and financial transparency, are neglected. However, emerging markets corporate governance can better be measured using an index focusing on internal mechanism.

### **Empirical Studies on Corporate Governance and Market Value**

Studies provide an insight into whether or not adoption of certain Corporate Governance practices has relation to market value of firms and its shareholders and majority of such studies suggest that firms having better governance also have higher market valuation.

Paligovora (2002) examine Corporate governance and executive pay on the Sarbanes-Oxley Act of 2002 (SOX) on the structure of executive pay in USA. Specifically, he considers the increased board oversight implied by SOX, which is expected to weaken the pay for performance link under traditional agency models. Alternatively, if entrenched CEOs managed to capture the pay process before SOX, stronger boards are expected to reduce CEO pay for luck and strengthen pay for performance. Using executive Compensation data finds that the pay for performance link increases after 2002 in firms with weaker board oversight prior to 2002 that is in firms more are expected by SOX stipulations. In contrast, pay for performance link changes little in firms with independent boards. Black, Love & Rachinsky (2006) studied that there is increasing evidence that broad measures of firm-level corporate governance predict higher share prices in Russia. However, almost all prior work relies on cross-sectional data.

This work leaves open the possibility that endogeneity or omitted firm-level variables explain the observed correlations. It address the second possibility by offering time-series evidence from Russia for 1999-present, exploiting a number of available governance indices. The study finds an economically important and statistically strong correlation between governance and market value both in OLS and in fixed effects regressions with firm-index fixed effects. It also finds large differences in coefficients and significance levels, including some sign reversals, between OLS and fixed effects specifications. This suggests that cross-sectional results may be unreliable. Furthermore, it finds significant differences in the predictive power of different indices, and in the components of these indices. How one measures governance matters. Finally, they regressed Tobin's Q against the result of their governance index and found that this correlation is highly significant with a coefficient of 0.0064 ( $t = 6.12$ ). They offer an explanation for the causes of the association between corporate governance and firm market value.

Black, Jang & Kim (2012) Report strong *OLS* and instrumental variable evidence that an overall corporate governance index is an important and likely causal factor in explaining the market value of Korean public companies. There study construct a corporate governance index (*KCGI*, 0~100) for 515 Korean companies based on a 2001 Korea Stock Exchange survey. In *OLS*, a worst-to-best change in *KCGI* predicts a 0.47 increase in Tobin's *q* (about a 160% increase in share price). This effect is statistically strong ( $t = 6.12$ ) and robust to choice of market value variable (Tobin's *q*, market/book, and market/sales), specification of the governance index, and inclusion of extensive control variables. The study rely on unique features of Korean legal rules to construct an instrument for *KCGI*. Good instruments are not available in other comparable studies. There study also find that Korean firms with 50% outside directors have 0.13 higher Tobin's *q* (roughly 40% higher share price), after controlling for the rest of *KCGI*. This effect, too, is likely causal. Thus, it reports the first evidence consistent with greater board independence causally predicting higher share prices in emerging markets.

### **Theoretical Frame Work**

The theoretical framework upon which this study is based is the agency theory, which posits that in the presence of information asymmetry the agent (in this case, the directors and managers) is likely to pursue interests that may hurt the principal, or shareholder (Ross, 1973). At first, the theory was applied to the relationship between managers and equity holders with no explicit recognition of other parties interested in the well-being of the firm. Subsequent research efforts widened the scope to include not just the equity holders but all other stakeholders, including employees, creditors, government, etc. This approach, which attempts to align the interests of managers and all stakeholders, has come to be regarded as the stakeholder theory.

### **Agency Problem from the Perspective of Board Size**

There are arguments in favor of small board size. First, Yermack (1996), in a review of the earlier work of Monks & Minow (1995), argues that large boardrooms tend to be slow in making decisions, and hence can be an obstacle to change. A second reason for the support for small board size is that directors rarely criticize the policies of top managers and that this problem tends to increase with the number of directors (Yermack, 1996; Lipton & Lorsch, 1992).

Yermack (1996) examines the relation between board size and firm performance, concluding that the smaller the board size the better the performance, and proposing an optimal board size of ten or fewer. John & Senbet (1998) maintain that the findings of Yermack have important implications, not least because they may call for the need to depend on forces outside the market system in order to determine the size of the board.

### **3. Methodology**

To examine the relationship between corporate attribute of board size and Market value, the study uses board size as corporate governance variable and market value of equity. The study adopts ex-post factor research design to guide the study.

The population of this study comprises of all chemical and paints manufacturing companies listed on the Nigerian Stock Exchange (NSE) for the period 2004 to 2012. There are a total of 8 manufacturing firms listed on the NSE which are:

1. African Paints Plc,
2. Berger Paints Plc,
3. CAP Plc,

4. DN Mayer Plc,
5. SANDEX,
6. IPWA,
7. PCMN,
8. Premium Paints Plc.

To ensure a reliable and complete set of data, a two point filter was adopted which comprise of (i) being quoted on or before 31/12/2003 and (ii) must not have been delisted within the study period. Applying the above filter gives the following working population which also served as the sample of the study:

1. Berger Paints Plc,
2. CAP Plc,
3. DN Mayer Plc,
4. Premium Paint Plc,
5. IPWA,
6. African Paints Nigerian Plc.

The data sources for measuring variables (dependent and independent) are from the NSE Monthly Statistics, dated 31st December of each year.

#### Techniques of Data Analysis and their Measurements

The study uses multiple regressions and correlation as the main statistical techniques in testing the relationship between corporate attribute of board size and market value of equity. The main regression model is defined in the following equation:

$$MVE_{it} = \alpha + \beta BS_{it} + \epsilon_{it}$$

$\alpha$  = intercept

$\epsilon_{it}$  = error term

$\beta$  = beta

MVE<sub>it</sub> = Market Value of Equity

Board size (BS) = this is the total number of directors sitting in the board meeting and is measured using a dichotomous scale by assigning 1 if the number of directors reaches eight (8) and above and 0 if less than eight.

The researcher adopts the corporate attribute monitoring mechanism as prime predictor: specifically Board Size (BS) as independent variable to compare it with market value of equity (dependent variable). The study employed the quantitative dichotomous scale of 0-1 to measure the existence or absence of certain qualities of corporate governance as used by (Musa, 2006; Zattoni & Cuomo, 2006; and Kantudu, 2006 cited in Tahir 2009). Therefore, this study uses the same scale of 0-1 to measure the existence or absence of Corporate Governance. This is consistent with Tahir (2009). The multiple regression analysis would be used to test the effect while correlation would be used to establish the nature and the direction of the relationship that exist between the dependent and independent variables.

#### 4. The Findings

This section presents the analysis and interpretation of the data generated from the annual report and accounts of the sampled firms for the study.

#### Descriptive Statistics for Dependent and Independent Variable

Table 1 shows the summary of the descriptive statistic of the dependent and independent variables for the study. The descriptive statistics include measures of central tendency such as the mean and measure of dispersion such as the standard deviation, minimum and maximum.

**Table 1: Descriptive Statistics of Dependent and Independent Variables**

Variable	Mean	Std Dev	Min	Max
MVE	9.1	12.15	0.33	59
BC	0.63	0.49	0	1

Source: Generated by the Author using the data extracted from the annual reports and accounts of Nigerian chemical and paint companies

Table 4.1 shows the descriptive statistic of the dependent and independent variables of the study. The mean of MVE of the sampled companies in the Nigerian chemical and paints industry is 9.10. The max is 59 while the min is 0.33. The standard deviation of 12.15 indicates that the variation in the MVE of the sampled firms is not skew toward either of the extreme.

Similarly, the board size (BS) of firms in the Nigeria chemical and paint on the average comprises of 8 as indicated by the dichotomous value of 1. This suggests that for the study period the size of the board is not too large nor too small for effective and efficient control and monitoring of the firm's management during the study period. The standard deviation of 0.49 indicates that most of the sampled firms have at least 8 members presiding on its board. The minimum value is zero while the maximum value is 1 been the dichotomous value.

### Correlation Matrix for Dependent and Independent Variable

The correlation matrix shows the relationship between dependent variable with the independent variable. The correlation matrix is shown on Table 2 below

**Table 2 Correlation Matrix**

Variable	MVE	BS	VIF
MVE	1.0000		
BS	-0.1549	1.0000	1.49

Source: Generated by the Author using the data extracted from the annual report and accounts of Nigerian chemical and paint companies

Table 2 shows the correlation coefficient of the dependent and independent variable. The coefficient ranges from -1 to 1. The sign of the correlation matrix indicates the direction of the relationship, with positive sign indicating positive relationship and negative sign indicating negative relationship between variables. The closer the value is close to 1, the stronger the relationship between the pairs of variables. The correlation coefficient along the primary diagonal is 1, this indicates that the variable has a perfect positive relationship with itself. The correlation coefficient for board size (BS) and market value (MVE) as shown on Table 2 is -0.16. This implies that board size and market value of equity are weakly and negatively correlated.

The variance inflation factor (VIF) for the independent variables 1.49 as shown on Table 2, This indicates the absence of collinearity or multicollinearity in the independent variable as 3.00 and 5.00 are still accepted as proofs of multicollinearity absences.

### Regression Result

Table 3 presents the regression result of the dependent and explanatory variables of the study. The coefficient, standard error, t-statistic, probability of t-value, R-squared, Adjusted R-squared and the probability of F-value.

**Table 3: Regression Result**

Variable	Coefficient	Std error	T	P>/t/
CONSTANT	35.5950	16.4848	2.16	0.036
BS	-11.7590	4.1639	-2.82	0.007***
R-square			0.3825	
Adj R-squared			0.3454	
Prob>F			0.0000	

Source: Generated by the Author using the data extracted from the annual and accounts of Nigerian Chemical and paints firms

\*\*\* and \*\* indicate 1% & 5% Significant level

Table 3 presents the OLS result for the dependent and independent variable. The multiple determination coefficients (R<sup>2</sup>) of 0.38 indicate that 38% of the variation in the dependent variable MVE is jointly explained by the changes in the independent variable; BS. This position is confirmed by adjusted value of the multiple determination coefficient (Adj R<sup>2</sup>) of 0.35 which signifies that after adjusting for error term, 35% of the changes in MVE of the sampled firms is jointly explained by the changes in Board Size.

Considering the relationship between board size (BS) and market value of equity (MVE) in the Nigerian chemical and paint industry, the t-value of regression result on Table 4.3 was utilized. The t-value of -2.82 indicates that BS has a negative but significant effect on the MVE of Nigerian chemical and paints companies at 1% level of significant. The coefficient of result of -11.76 between BS and MVE implies that with an increase in the number of board members, MVE of firms in the Nigerian chemical and paints industry is more likely to decrease. This is so because an increase in the number of directors called for an increase in running particularly where these directors are not acting in the best interest of the firms.

This position is further enhanced by the correlation coefficient of -0.16 for BS and MVE which implies a negative relationship between BS and MVE in the sampled chemical and paints industry. This finding is in line with the result of Gill and Obradovich (2012) in American and Gill and Marthur in Canada, whose result shows a negative and significant relationship between BS and MVE. This was confirmed by the result of Cheng (2008) and Haniffa and Hudaib (2006). On the contrary the work of Weterings and Swagerman (2012) document a negative relationship between BS and value of firms in Asian real estate industry. Therefore, the null hypothesis which states that there is no relationship between Board size and market value of equity in the Nigerian Chemical and paints industry is rejected.

### **5. Summary, Conclusions and Recommendation**

Market value remains one of the fundamental factors considered by most investors because of its eminent importance in determining the viability or otherwise of a company. Despite its importance, market value is influenced by a firm's corporate governance practice suggesting that if the corporate governance of a firm is well established by the board or management as specified by code of corporate governance practice, it may affect the market value of a firm positively. However, since the board is only responsible for formulating policies on how market value of a firm will increase and the management is responsible for implementing those policies, it is expected that the activities at the level of the board through Corporate Governance would impact on activities at the level of management, since Executive Directors participate at both levels of the board and that of management. Since The larger board of firms in the Nigerian chemical and paint industry result in a decrease in the market value of equity of firms operating in the industry. The study recommends that firms in this industry should improve the efficiency of their board, SEC in collaboration with CAC should allow firms in the Nigerian chemical and paints industry to have a small but an effective board capable of exercising better control and monitoring of management activities

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