



Board Attributes and Stock Returns of Listed Industrial Goods Companies in Nigeria

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Abstract

The main objective of this study is to examine the effect of board attributes on stock returns of quoted industrial goods companies in Nigeria. A sample size of eleven (11) firms listed in the industrial goods sector of Nigerian Stock Exchange as at 2021 and the study applied a panel analysis. Board independence, board size and board financial expertise were used as predictor variables, and findings shows that board size, board independence and board financial expertise have positive significant effect on stock returns of quoted industrial goods companies in Nigeria. From the findings, the study recommended that the board of directors of industry goods firms should increase their monitoring capacity towards discretionary behavior of management activities by increasing the number of experts in accounting and finance on the board to at least three in order to improve the quality of earnings.

Keywords: Board Size, Financial Expertise, Independence, Stock Returns, Industrial Goods Companies.

1. Introduction

In order to meet the competing needs, companies obtain funds through money markets and capital markets. Through the capital market the company can obtain funds by selling shares and bonds. For investors, capital market is a means to invest in the hope of getting a profit. Gitman (2015) states that investment in the form of shares will provide benefits in the form of dividends and capital gains. Information that is relevant to the conditions of the capital market is something that capital market players need to look for in an effort to make investment decisions. Stock return is very important as it is the main objective of investment in ordinary shares. Investors, both existing and potential regard return as the fundamental reason for investing in a particular firm. Stock return can be in form of capital appreciation/depreciation plus dividend received if any. Stock prices are important metrics of measuring stock market returns. Stock Market Returns are the returns or gain that the investors generate out of the stock market. The most common way of generating stock market return is through trading in the secondary market. In the secondary market an investor could earn stock market return by buying a stock at lower price and selling it at a higher price. Book value of equity constitutes the accounting-based value for owners and it can be useful in judging the true value of equity.



The stock markets play critical role in every economy of a nation. The criticality of the stock markets to the growth of every economy is based on the fact that resources are channeled to the most productive investment opportunities (Kumar, 2012). They serve as a place where securities are traded as well as provide the platform for effective and efficient interactions between savers and users of capital by means of pooling of funds, sharing risk and transferring wealth among stakeholders. Equity shares provide major channel of investment that has the potential of yielding meaningful returns to investors. However, a number of factors such as market conditions, activities of regulatory bodies, performance of particular stocks, among others can cause the returns from equity investment to fluctuate, knowledge of such factors and their possible impact on share prices is highly appreciable as it would help investors make wise investment decisions and enable firms to enhance their market value.

The role of board of directors in corporate governance is essential both in developed and developing economies. The ultimate responsibility for ensuring that firms are properly managed rests with the shareholders. However, with the separation of ownership from control in most major business enterprises, the responsibility for strategic decisions and ensuring that top managers discharge their day-to-day duties effectively and efficiently is entrusted to the board of directors. As board members possess power and influence over firms' strategy, policy and decision-making authority, a potentially significant event in any firm is a change in the composition of the board with the appointment of a new member of the board or an existing member ceasing, for whatever reason to remain on the board.

Accordingly, the composition of the board is of great importance in determining stock returns. This is because the board is one of the most reliable tools within the organization that can be used to predict the performance of firm and its reporting capabilities. For example, Fama & Jensen (1983) stated that non-executive directors are able to act as mediators in disputes that occur between managers, oversee policies, and provide advice to management. The independent board is a monitoring function in order to create a company that has good corporate governance. Jiraporn and Ning (2006) state that the strength of the board of directors is more indicated by the composition of the board of directors who are independent. Also, Agency theory states that the board size, which is one of the variables that predicts if corporate governance can prevent the tendency of managers to behave in an opportunistic manner, by distributing free cash flow to shareholders as cash dividends (Eisenhardt, 1989). Board financial expertise is also, considered a good predictor of stock returns variation. This entails having a member on the board that is financially, literate. Kirkpatrick (2009) and Walker (2009) argue that the lack of financial expertise on corporate boards played a major role during the financial crisis. Therefore, the presence of more financial expertise on a board ultimately influences the board's decisions, including dividend policy. Having financial expertise on the board will keep them from being accused of failure in their watchdog role and will better serve the shareholders' interests. Aim of this study is to assess the effect of board independence on stock returns of quoted



industrial goods companies in Nigeria, also to determine the effect of board size on stock returns of quoted industrial goods companies in Nigeria, and to ascertain the effect of board financial expertise on stock returns of quoted industrial goods companies in Nigeria

2. Literature Review

Board Attributes- The concept of the board is derived from the attributes or incentives and variables that play a significant role in monitoring and controlling managers and can be described as a bridge between company management and shareholders (McIntyre, 2007; Bonn, 2004; Kiel & Nicholson, 2003). To understand the role of the board, it should be recognized that boards consist of a team of individuals, who combine their competencies and capabilities and collectively represent the pool of social capital for their firm that is contributed towards executing the governance function (Westphal, 2001). Board composition can reflect various degrees of heterogeneity (Bhagat & Black, 2002). Common measures of board composition include the ratio of independent non-executive directors and board size (Rashid, 2011), which is the measure used in this research. Other measures of board composition in the literature include gender and age diversity. However, to date there have been inconclusive findings as regards to the relationship between board composition and firm performance (Finegold & Lawler, 2007; Bermig, 2010; Rashid, De Zoysa, Lodh & Rudkin, 2010). Other differences in board composition are considered here to represent 'board diversity'. More independent board composition can result in enhanced decision making through increased information flows, although this may entail a cost (Sanda *et al.*, 2011). In light of this, Eklund, Palmberg and Wiberg (2009) stress that, board heterogeneity entails a trade-off between "information efficiency" in the case of heterogeneous boards, which typically are better informed on 'outside' issues, versus "decision efficiency" of homogenous boards deriving from higher trust, shared experience and values.

Board Size- Dozie (2003) defined board size as the number of members that form the board. There is no agreed number of members that make up an ideal board size. There have been diverging opinions by various researchers on the number of persons that should make up an ideal board. Some school of thought are of the opinion that a small board is more effective because it enhances fast decision making and cannot be manipulated by management. Dozie (2003) also argued that a smaller board may be less encumbered with bureaucratic problems, more functional and is able to provide better financial reporting oversight. Some of the disadvantages associated with a large board are high cost of coordination and delay in passing information. It is also associated with weak monitoring. Dalton *et al.* (1999) argue that a large board is overcrowded and hence does not give room for each member's input; it is also less organized and unable to reach a decisive conclusion on time. The study measured the board size by the number of directors serving on such boards and expected this to have a negative relationship with stock returns.

John and Senbet (1998) argue that large boards are less effective and are easily controlled by the CEO. When a board gets too big, it becomes difficult to coordinate and for it to



process and tackle strategic problems of the organization. Role of Board size has been a matter of continued debate from different perspectives (Jensen 1993; Yermack, 1996; Dalton et al., 1999; Hemalin & Weisbach, 2003). While some have suggested smaller boards enhance financial reporting quality (Lipton & Lorsch, 1992); Jensen 1993); Yermack, 1996) others have suggested larger boards are better for improving financial reporting quality (Pfeffer, 1972; Klein, 1998; Adams & Mehran, 2003; Anderson., 2004; Coles 2008). Scholars have argued for smaller boards on grounds of easy co-ordination, (cohesiveness and communication Jensen, 1993) and to avoid social loafing and freeriding (Lipton & Lorsch, 1992). As the size of the board increases, interpersonal communication becomes less effective. As the board size increases, problems of communication and coordination manifest and are likely to develop factions and conflict (Charles, Reilly & Jennifer, 1989). Klein (1998) argues that the need for advice for CEO will increase with organizational complexity. Klein (1998) further suggests that the advisory needs of CEO increases with the extent of firm's dependence on environmental resources. So, increasing board size helps businesses to manage the environment (Pfeffer, 1972; Pearce & Zahra, 1992). From an agency theory perspective, larger boards allow for effective monitoring by reducing the domination of the CEO within the board and protect shareholder's interests (Singh & Harianto, 1989). According to Hermalin and Weishbach (1998), board effectiveness is a function of its independence. The independence of a board depends on the negotiations between the board and the CEO. A larger board improved the bargaining position of the board vis-à-vis the CEO and thus, make the board more effective in monitoring the management. Further, a larger board will also make it easy to create committees to delegate specialised responsibilities.

Board Independence- In terms of this tension, however, agency theory is in favour of a majority of independent non-executive directors (Huse, 2007; Rashid, 2011). King III stresses that the board should include a balance of executive and non-executive directors, with a majority of independent non-executive directors, as this reduces the possibility of conflicts of interest (IOD, 2009). The corporate governance literature tends to advocate expanding the independent/outsider elements on corporate boards (Sanda *et al.*, 2011). Sahin, Basfirinci and Ozsalih (2011), however, observe that previous literature does not offer consistent evidence on the impact of the proportion of non-executive to executive directors on financial performance. On the one hand, certain studies (Weisbach, 1988; Pearce & Zahra, 1992; Daily & Dalton, 1993; Rosenstein & Wyatt, 1994; MacAvoy & Millstein, 1999; Krivogorsky, 2006) suggest a positive relationship between board composition and firm performance. Others, on the other hand, have found no relationship between firm performance and board composition (Daily & Johnson, 1997; Bhagat & Black, 2002; Dulewicz & Herbert, 2004). In support of the latter camp, Finegold & Lawler (2007) note that no consistent empirical evidence has been found to suggest increasing percentages of outsiders on boards will enhance performance, but "pushing too far to remove insider and affiliated directors may harm firm performance by depriving boards of the valuable firm and industry specific knowledge they provide."



An argument challenging the role of independent non-executive directors' rests on the information asymmetry between executive directors and independent non-executive directors (Rashid, 2011). Executive directors are nested within the company they govern and may therefore have a better understanding of the business than independent non-executive directors and may, in addition, be better able to make useful decisions (Sanda *et al.*, 2011). By contrast, independent non-executive directors may lack day-to-day inside knowledge of the company and therefore may play a reduced control role in the firm (Nicholson & Kiel, 2007; Rashid *et al.*, 2010). Nevertheless, this debate is set to continue, as there are no empirical findings to tilt the argument in any particular direction (Rashid, 2011). There are several explanations for the inconclusive results on the relationship between executive versus independent non-executive directors and firm performance. One such explanation is that the simultaneity between key variables of interest confounds the interpretation of the results in studies that focus on direct relationships (Finegold *et al.*, 2007). Yet another explanation is that performance and board characteristics are jointly endogenous, and thus firm performance is not only a function of past board independence, but also influences board structure (PanAsian, Prevost & Bhabra, 2008).

Board Financial Expertise- Unlike the size criterion that was specified by CAMA (2004), the expertise criteria were specified in Nigeria by the 2011 and 2018 SEC Codes, 2006 Post consolidation CBN code amongst other codes. These codes specify that at least, a member of the audit committee must possess financial management and accounting knowledge. The US SEC also has a similar condition as it expects that firms must have at least one person with financial expertise. Juhmani (2017) asserted that the availability of an accounting and financial knowledge in the audit committee would enhance its efficiency and its ability in detecting and preventing earnings management. Kibiyaa, Ahmada and Amran (2016) also buttressed in their study that the presence of a member with financial literacy or knowledgeable in accounting, finance or financial management will enhance the quality of the financial report. However, Dhaliwal *et al.* (2006) noted that the expertise criterion given is broad in terms of definition. They claim that persons with financial expertise can mean any of the following (1) certified public accountant, auditor, financial officers, or controllers (2) anyone that has worked in a supervisory role that involves financial statement preparation. Thus, expertise can be technical or supervisory in nature but the contention is that which of this nature of expertise is fundamental to financial reporting quality? Is it technical/accounting or supervisory/financial management? Livingston (2003) provides evidence that supervisory expertise does not translate to effective understanding of accounting issues and may not ensure reporting quality.

Generally, companies prefer to have more financial experts on the corporate board, but this demand for financial experts on the board increased after the Sarbanes-Oxley Act (SOX) of 2002. Expertise can be defined as "skillfulness by virtue of processing special knowledge." It is evaluated based on standards discussing the aptitude to perform a task. The corporate governance reports of CalPERS in 1997, Blue Ribbon Commission report in 1998, SOX in



2002 and NYSE in 2004 also suggest some guidelines regarding the expertise of board members. These reports were issued in response to various accounting scandals that have occurred since the 1990s, such as Enron, HealthSouth, Tyco, WorldCom and different financial crises. Reports further include the significance of financial expertise of directors in performing their central function of monitoring the firm's financial performance. According to the SOX (Section 407), a financial expert is a person who has experience in accounting or finance or has supervisory expertise. DeFond. (2005) and Krishnan and Visvanathan (2008) use SOX of 2002 to explain financial expertise.

Stock Returns- In simple terms a stock refers to a share in the ownership of a company. Stock represents a claim on the company's assets and earnings. The percentages take that an investor hold is reflected in the number of stocks the investor acquires from the company's stocks. Thus, the more shares that one acquires, the greater his/her ownership rights in the company. When one holds a company's stock, it means that person is one of the many owners (shareholders) of the company and as such has a claim (albeit usually very small) to everything the company owns. An investor's share ownership is represented by a stock certificate. That is a piece of paper which serves as a proof to one's ownership. According to Beni and Alexander (1999), ordinary stock simply represents an ownership interest in a corporation. In this modern age of business however, such certificates are rarely given the shareholder because the brokerage firms keep this record electronically otherwise known as holding shares in street name. This is done in an attempt to make the stock easily tradable. Unlike in the past where one has to physically take a share certificate to the broker age in order to sell, now with just a click on the mouse or even a phone call; stocks can easily be traded. Return refers to the financial rewards gained as are suit of making an investment. The nature of the return depends on the form of the investment. For instance, accompany that invests in fixed assets and business operations expects returns in the form of profit, which may be measured on before-interest, before tax or after-tax basis, and in the form of increased cash flows. An investor who buys ordinary shares expects returns in the form of dividend payment and capital gains (share price increases). Again, an investor who buys corporate bonds expects regular returns in the form of interest payments (Frimpong, 2010).

Stock return is very important as it is the main objective of investment in ordinary shares. Investors, both existing and potential ones' regard return as the fundamental reason for investing in a particular firm. Stock return can be in form of capital appreciation/depreciation (as obtained in the Nigerian stock exchange) plus dividend received if any. Stock prices are important metrics of measuring stock market returns. Therefore, the value attached to them matters a lot to both existing and prospective investors in the stock market. There are several factors in stock prices determination in the stock market. These factors range from accounting and non-accounting information. Stock Market Returns are the returns or gain that the investors generate out of the stock market (Lin & Zhan, 2011).



Empirical Review

Aloui and Jarboui (2017) investigated the relationship between the stock return, the outside and the independent directors. The volatility, as the dependent variable in the model, is measured by the standard deviation of annual stock returns. The sample comprises 89 firms listed on the SBF 120 index over 2006-2012. The study used multiple regression analysis technique to analyse the data. Findings revealed that the outside directors have a positive and significant effect on the stock return. Moreover, the firm's size and ROA have a negative effect on the stock return volatility, which is clearly evidence in all the regressions. On the other hand, the CEO, audit size and debt ratio have statically significant and positive effect on the stock return volatility. This study data stopped in 2012 while this current study data is 2019 making it more current to rely on its findings for decision purpose. Rostami, Rostami and Kohansa (2016) investigated the effect of corporate governance components on return on assets and stock return of companies listed in Tehran stock exchange. In order to test the hypothesis, about 469 firm-year observations were collected using systematic sampling for a period of seven years. In this paper, we have used 6 internal components of a corporate governance system such as ownership concentration, institutional ownership, Board independence, Board size, CEO duality and CEO tenure as independent variables and their effect on return on assets and stock return, as the firm financial performance evaluation criteria, were studied. The control variables of this study are the market value of the equity and the ratio of book value to market value of the equity. The results, which were based on estimated generalized least square method, indicated that there is a significant positive relationship between ownership concentration, Board independence, CEO duality and CEO tenure and return on assets. On the other hand, there is a significant negative relationship between institutional ownership and Board size and return on assets. Besides there is a significant positive relationship between institutional ownership, Board independence, CEO duality and CEO tenure with stock return. However, there is a significant but negative relationship between ownership concentration and Board size with stock return. Findings from this study will be misleading for decision purpose in Nigeria due to the problem of external validity.

The affairs of an organization are determined by the boards of directors (Butt, 2012). The daily operational activities of organization are handled by the executive directors which is headed by the CEO. Role of board for acting as advisor to the CEO is necessary to enhance value of the organization (Kirkpatrick, 2019). This then means that the presence of board directors with accounting and finance (i.e., have financial literacy) to perform effective monitoring of company's financial reporting process and its disclosure practices to ensure integrity (Xie, Davidson & Dadalt, 2003). This also can help increase the value of organization and its performance (Finegold & Lawler, 2007). Kor and Sundaramuthy (2009) state the directors who had reasonable financial backgrounds were more effective in providing internal control system mechanisms to control firm performance. The revised corporate governance code of 2018 suggested that there is a need for the board to have people with requisite skill and knowledge on the board. Abbott et al. (2000) asserted that



firms in which its board of directors have at least one financially literate member are less likely to be sanctioned by the SEC for financial reporting problems.

Theoretical Framework

Arbitrage Pricing Theory (APT) developed by Ross (1976) as a Capital Asset Pricing Model (CAPM), is premised on the basis that the stock returns are caused by a specific number of economic variables. The theory further suggests that there are different risks in the economy that cannot be eradicated by sole diversification. It is a one-period model in which every investor believes that the stochastic properties of returns of capital assets are consistent with a factor structure. Ross (1976) argued that if equilibrium prices offer no arbitrage opportunities over static portfolios of the assets, then the expected returns on the assets are approximately linearly related to the factor loadings. Ross' (1976) heuristic argument for the theory is based on the preclusion of arbitrage. Her formal proof showed that the linear pricing relation is a necessary condition for equilibrium in a market where agents maximize certain types of utility. The subsequent work, derives either from the assumption of the preclusion of arbitrage or the equilibrium of utility-maximization. A linear relation between the expected returns and the betas is tantamount to an identification of the stochastic discount factor (SDF).

Basically, at the core of APT is the recognition that only a few systematic factors affect the long-term average returns of financial assets. APT does not deny the myriad factors that influence the daily price variability of individual stocks and bonds, but it focuses on the major forces that move aggregates of assets in large portfolios. By identifying these forces, one can gain an intuitive appreciation of their influence on portfolio returns. The ultimate goal is to acquire a better understanding of portfolio structuring and evaluation and thereby to improve overall portfolio design and performance. The returns on an individual stock in, say, the coming year, will depend on a variety of anticipated and unanticipated events. Anticipated events will be incorporated by investors into their expectations of returns on individual stocks and thus will be incorporated into market prices. Generally, however, most of the return ultimately realized will be the result of unanticipated events. Of course, change itself is anticipated, and investors know that the most unlikely occurrence of all would be the exact realization of the most probable future scenario. But even though it is realized that some unforeseen events will occur, their direction or their magnitude is still unknown. What can be known is the sensitivity of asset returns to these events.

3. Methodology

This study adopted a descriptive ex- post facto research method and positivist research philosophy for the purpose of addressing the research problem. The population of the study comprises of all the thirteen industrial goods companies quoted on the Nigerian Stock Exchange as at 2021. Given the small population, the study through a filtering process which require that all firms must have the complete financial and market information necessary to extract the panel data, eleven (11) out of the thirteen (13) companies were



sampled for the purpose of data collection. The data was collected from the annual reports of the sampled companies for a period of ten (10) years (2012 to 2021). Annual financial statements are a preferred choice for the purpose of data collection based on the type of data to be collected, availability of data to be collected and ease of results comparability. The data for the study is panel in nature (that is cross-sectional time series data). In order to check for endogeneity, the study used the Hausman specification test. Additional robustness tests adopted in this study include the test for Multicollinearity using the Variance Inflation Factor (VIF) and the Breusch-Pagan test for heteroscedasticity, to check for the fitness of model and reliability of findings. The model for the study is adopted from previous studies of Igbal *et al.* (2016) Nguyen and Nguyen (2016) and Ltaifa and Khoufi (2016) and modified to suit the variables of the study as presented below:

$$SR_{it} = \beta_0 + \beta_1 BI_{it} + \beta_2 BZ_{it} + \beta_3 BE_{it} + \varepsilon_{it} \dots\dots\dots 1$$

Where: SR= Stock Returns, BI= board independence, BZ= board size, BE= board expertise, b0 = intercept (constant), i= cross-sectional time, t=time series, ε = Error term

Table 1: Measurement of Variables

Variables	Definitions	Measurement	Construct Source	Validity
SR	Stock Returns	$P1-P0 / P0 \times 100$ Where: P1 represent price of the stock in current year as quoted at the end of the financial year. P0 represent price of the stock in the last financial year end.	Ayuba (2018); Bala and Idris (2015).	
BI	Board Independence	measured by the proportion of independent non-executive directors on the board to the total number of directors.	Alvas (2014); Hassan and Bello (2013); Akeju and Babatunde (2017).	
BZ	Board Size	measured by the total number of executive and non-executive directors on the board	Adebisi (2017); Holtz and Neto (2014); Chalaki, Didar and Riahinezhad (2012).	
BE	Board Expertise	Measured by the proportion of directors on the board with financial expertise to the total number of directors.	Gray and Nowland (2015); Güner, Malmendier and Tate (2008).	

Source: Researcher's Compilation, 2022.

4. Results

This section presents and analyses the results obtained from the data. The section begins with descriptive statistics and correlation analysis of the variables. This was followed by the presentation and discussion of the regression results for the purpose of estimating the model used in the study.



Descriptive Statistics

The data for the study were sourced from annual report of quoted industrial goods companies in Nigeria, which covers stock returns, board size, board independence and board financial expertise. The descriptive statistics was used to explain the behaviour of data used for the study. The result of the descriptive is presented in Table 2.

Table 2: Descriptive Statistics

Variables	Obs	Mean	Std Dev	Min	Max
SR	110	63.432	127.10	12.000	975.00
BI	110	0.1778	0.0789	0.0129	0.4285
BZ	110	10.510	2.9014	0.5000	22.000
BE	110	0.1128	0.0642	0.0129	0.5714

Source: Authors Computation, 2022

The result of the descriptive statistics on Table 2 shows that the mean stock returns stand at 63.4326 with a corresponding standard deviation of 127.107. This shows a wide variation in the stock returns of companies in the industrial goods sector and this outcome is substantiated by the value of the minimum and maximum value that is widely dispersed at 12 and 975 respectively. The descriptive statistics on Table 2 again, indicates that the sampled industrial goods firms in Nigeria have an average of 0.1778 independent directors on the board stood during the period of the study, with a standard deviation of 0.0789. This suggest that an average of 17% directors have independent status. This is confirmed by the value of the standard deviation which is close to the mean. Meanwhile, the minimum and maximum value stood at 1% and 42% respectively. Again, the result in Table 2 shows that the average board size of all sampled industrial goods firms in Nigeria during the period of the study stood at 10 with a corresponding standard deviation of 2. This suggest that on average the size of the board is 10. However, the value of the standard deviation shows a certain level of disagreement. The result further shows that the minimum and maximum number of directors stands at 5 and 22 respectively. Also the descriptive result shows that on average, 11% of the board members in the sampled industrial goods companies have financial expertise. This is evidenced by the mean value of 0.1128 and the standard deviation of 0.0642. The value of the standard deviation which is close to the mean significantly, uphold this claim. Meanwhile, the value of board financial expertise for minimum and maximum is 0.0129 and 0.5714 respectively. This means the highest proportion of directors with financial expertise in the company stood at 57%.

Table 3: Correlation for Board Attributes and Stock Returns

	CTA	BS	BIND	BEXP
CTA	1.0000			
BI	0.0778	1.0000		
BZ	0.0724	0.2502	1.0000	
BE	0.1469	-0.4165	0.4143	1.000

Source: Authors Computation, 2022



The Table 3 reveals positive correlation between the dependent variable (stock returns) and the explanatory variables board independence, board size and board financial expertise with coefficients of 0.0778, 0.0724 and 0.1469 respectively. This implies that all explanatory variables move in the same direction with stock returns. According to Gujarati (2004), a correlation coefficient between two independent variables 0.80 is considered excessive and thus certain measures are required to correct that anomaly in the data. From this study, it can be seen that no correlations between independent variables exceed 80%.

Diagnostic Test

The two robustness tests conducted in this study are multicollinearity and heteroskedasticity tests. These tests are important to regression estimation in order to satisfy the assumptions of the Ordinary Least Square (OLS) of homoskedasticity and absence of exact correlations among the independent variables in the model.

Table 4: Tolerance and Variance Inflation Factors

Variable	VIF	1/VIF
BI	1.05	0.9115
BZ	1.07	0.9322
BFE	1.10	0.9396
Mean VIF	1.06	

Source: Authors Computation, 2022

To formally validate the absence of multicollinearity among the independent variables, collinearity diagnostics were observed and presented using the VIF and tolerance values. As well-known if the variables have average VIF above 10, and tolerance values above 1, then there is strong sign of multicollinearity. The variance inflation factors were computed and found to be consistently smaller than 10. The tolerance values were also computed and found to be consistently smaller than 1. The outcomes of the above table thus provide strong evidence of absence of multicollinearity.

Test for Heteroscedasticity

This test was conducted to check whether the variability of error terms is constant or not. The presence of heteroskedasticity signifies that the variation of the residuals or term error is not constant which would affect inferences in respect of beta coefficient, coefficient of determination (R²) and F-statistic of the study. Heteroscedasticity was tested using Breusch Pagan's and Cook-Weisberg Test. The goodness of fit test which is a statistical hypothesis test to show how sample data fit a distribution from a population with a normal distribution shows pearson chi² value of 6.441 and a corresponding probability of 0.1472. This indicated that the adjustment of the observations problems is well and no errors exist underlining the general fitness of the model.

Hausman Specification Test

The result of the Hausman Test revealed that the value of chi² is 4.24 and the prob>chi² of 0.0440. According to Gujarati (2004), Hausman probability values less than 5% favours



the fixed effect model while greater than 0.05 are in favour of random effect model. The significant value as reported by the probability of chi2 indicates that the Hausman Test is in favour of the fixed effect model.

Regression Result

Table 5: Fixed Effect Regression Result

CTA	Coefficient	T	p-value
BI	0.0273	-3.64	0.000
BZ	0.1234	2.57	0.018
BE	0.3334	-3.67	0.000
R-Squared	0.2225		
F-Statistics	81.10		
Prob > F	0.0001		

Source: Authors Computation, 2022

Table 5 indicates that the aggregate influence of the explanatory variables included in the model are able to explain stock returns up to about 22% as indicated by the R-squared, while the remaining 78% is controlled by other factors that are not included in the model. The F-Statistics value of 81.10, which is significant at 1% indicating that the model is fitted and therefore provides substantial evidence that board attributes have significant impact on stock returns of listed industrial goods firms in Nigeria. Given the individual explanatory variables, the summary of the result in Table 5 shows that board independence had a positive and significant effect on stock returns. This was based on the evidence of the coefficient which is 0.0273. This means the independent directors have 3% influence on the level of returns on stock. This claim is substantiated by the p-value which is significant at 5% level of confidence. Hence, the study rejects the hypothesis which states that board independence has no significant effect on stock returns of industrial goods companies quoted on Nigerian stock exchange. The relationship between board size and stock returns was also, investigated and the result from table 5 clearly shows that board size has positive influence on stock returns in the industrial goods sector. The evidence from the result show that a coefficient of 0.1234 and a p-value of 0.018 indicating a statistically, significant relationship. Hence, the study rejects the hypothesis that board size has no significant effect on stock returns of quoted industrial goods companies in Nigeria. The study also, looked at the extent to which board financial expertise can influence the stock returns of quoted industrial goods companies in Nigeria. The output in table 5 shows that a positive and strong statistical relationship exist between board financial expertise and stock returns. This is evidenced by the value of coefficient and probability which stands at 0.3334 and 0.000 respectively. This shows that the board with high financial expertise can determine highly the extent of stock returns. Based on this the study rejects the hypothesis which states that board financial expertise has no significant effect on stock returns.



5. Conclusion and Recommendations

The concept of the board is derived from the attributes that play a significant role in monitoring managers and can be described as a bridge between company management and shareholders. To understand the role of the board, it should be recognized that boards consist of a team of individuals, who combine their competencies and capabilities that collectively represent the pool of social capital for their firm that contributed towards executing the governance function. Given the level of importance of boards to company management and control, the main objective of this study is to examine the effect of board attributes on stock returns of quoted industrial goods companies in Nigeria. In this study, board independence, board size and board financial expertise were used as predictor variables. The overall regression result judging from the R-squared showed that board attributes can be used to predict the behaviour of stock returns in the industrial goods sector. Based on the findings, the study concluded that the more independent directors on the board the more the possibility that dividends will be paid to shareholders. Hence, the study finds evidence to suggest that board independence is a predictor of stock returns in the area covered by the study. Also, the study concluded that board size is a determinant of stock returns of quoted industrial goods companies in Nigeria. Hence, the size of the board can be used to predict the behaviour stock returns in the sector covered by the study. The study has statistical evidence to conclude that the presence of more financial expertise on a board ultimately influences the board's decisions, including dividend policy decisions. Because having financial expertise on the board will keep them from being accused of failure in their watchdog role and will better serve the shareholders' interests. This study therefore recommends that the Board of Directors of industrial goods firms should increase their monitoring capacity towards discretionary behavior of management activities by increasing the number of experts in accounting and finance on the Board to at least three in order to improve earning quality. It is also, more independent director should be encouraged on the board. This is in an attempt to improve monitoring activities that will curb the individual behavior of management.

Reference

- Adams R. B., & Mehran, H. (2003). Bank board structure and performance: evidence for large bank holding companies. *Journal Finance Intermed*, 21(2), 243–267.
- Aloui, M., & Jarboui, K., (2017). The relationship between the stock return, the outside and the independent directors. *Contemporary Accounting Research*, 25(3), 827-858.
- Anderson, R. C. (2004). Board composition: Balancing family influence in S&P 500 firms; *Administrative Science Quarterly*, 49(2), 209–237.
- Beni, L. & Alexander, V. (1999). Ownership Structure and Firm Performance; Evidence from Isreal; *Kluwer Academic Publishers Netherland*, 3, 189–201.
- Bermig, A. (2010). Who is the Better Monitor? The impact of female board of Directors, Board Composition, and Board Size on Earning Management. Paderborn: University of Paderborn.



- Bhagat, S., & Black, B. (2002). The Uncertain Relationship between Board Composition and Firm Performance. *Business Lawyer*, 54, 921-63.
- Bonn, I., Yoshikawa, T., & Phan, P. H. (2004). Effects of Board Structure on Firm Performance: A Comparison between Japan and Australia; *Asian Business & Management* (3), 105-125.
- Coles, (2008). Boards: Does one size fit all? *Journal of Financial Economics*, 87(3), 329–356.
- Daily, C. M., & Dalton, D. R. (1993). Board of directors' leadership and structure: Control and performance implications; *Entrepreneurship Theory and Practice*, 17, 65–81.
- Dalton, H., Catherine, A., Alan, K., & Jonathan, L. (1999). What's wrong with having friends on the board. *Across the Board*, 36(3), 28–32.
- DeFond, M. L. (2005). Audit research after Sarbanes-Oxley. *Auditing: A Journal of Practice & Theory*, 24 (supplement), 5-30.
- Dhaliwal, D., Naiker, V., & Navissi, F. (2006). Audit committee financial expertise, corporate governance, and accruals quality: An empirical analysis. Working paper, The University of Arizona.
- Dozie, M. L., (2003). Audit research after Sarbanes-Oxley. *Auditing: A Journal of Practice Theory*, 24 (supplement), 5-30.
- Eisenhardt, K. M. (1989). Agency theory: An assessment and review; *Academy of Management Review*, 14(1), 57–74.
- Eklund, J. E., Palmberg, J., & Wiberg, D. (2009). Ownership structure, board composition and investment performance. Electronic Working Paper Series No. 172. *The Royal Institute of Technology, Centre of Excellence for Science and Innovation Studies (CESIS) Sweden*, 1-28.
- Fama, E. F. & French, K. R., (1992). “The Cross-Section of Expected Stock Returns”. *Journal of Finance*, 47, 427-465.
- Finegold, D., & Lawler, E. E. (2007). Appraising boardroom performance; *Harvard Business Review*, 76(1), 136-148.
- Frimpong, M. (2010). The impact of external debt on economic growth in Ghana: A Cointegration Analysis; *Journal of Science and Technology*, 26(3), 121-130.
- Hermalin, B. E., & Weisbach, M. S. (2003). Board of Directors as an Endogenously Determined Institution: A Survey of the Economic Literature, *Economic Policy Review*, 9 (1), 7-26.
- Iqbal, M. J., Siddiq, A., Gul, H., & Gul, H. (2016). Institutional Ownership and Discretionary Accruals: Empirical evidences from Pakistani listed non-financial companies; *Journal of Information Management and Business Review*. 4(4), 217-222.
- Jensen, M.C. (1993). The modern industrial revolution, exit, and the failure of internal control systems; *The Journal of Finance*, 3(48), 831-880.
- Jiraporn, P., & Ning, Y. S. (2006). Corporate Governance, Shareholder Rights and Firm Diversification: An Empirical Analysis; *Journal of Banking and Finance*, 30, 947-963.



- John, K., & Senbet, L. W., (1998). Corporate governance and board effectiveness; *Journal of Banking & Finance*, 22(4), 371-403.
- Juhmani, O. (2017). Ownership structure and corporate voluntary disclosure: Evidence from Bahrain; *International Journal of Accounting and Financial Reporting*, (3)2, 133-148.
- Kibiya, M. U., Ahmad, A. U., & Amran, N. A. (2016). Audit committee characteristics and financial reporting quality: Nigerian non-financial listed firms; *The European Proceedings of Social and Behavioral Sciences*, 753-760.
- Kiel, G. C., & Nicholson, G. J. (2003). Board composition and corporate performance: How the Australian experience informs contrasting theories of corporate governance. *Corporate Governance: An International Review*, 11(3), 189-205.
- Kirkpatrick, G. (2009). "The corporate governance lessons from the financial crisis", report, OECD, Paris.
- Klein, A. (1998). Firm performance and board committee structure; *Journal of Law and Economics*, 41, 275-303.
- Krishnan, G. V., & Visvanathan, G. (2008). Does the SOX definition of an accounting expert matter? The association between audit committee directors' accounting expertise and accounting conservatism; *Contemporary Accounting Research*, 25(3), 827-858.
- Lin, W., & Zhang, R. (2011). Corporate social responsibility, ownership structure, and political interference: Evidence from China. *Journal of Business Ethics*, 96(4), 631-645.
- Lipton, M., & Lorsch, J. (1992). A modest proposal for improved corporate governance; *The Business Lawyer*, 48(1), 59-77.
- Ltaifa, M. B., & Khoufi, W. (2016). Book to market and size as determinants of stock returns of banks: an empirical investigation from MENA Countries; *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 6, 142-160.
- MacAvoy, P., & Millstein I. M. (1999). The Active Board of Directors and Its Effect on the Performance of the Large Publicly Traded Corporation; *Journal of Applied Corporate Finance* 11(4), 8-20.
- McIntyre, M. L., Murphy, S. A., & Mitchell, P. (2007). The top team: Examining board composition and firm performance; *Corporate Governance an International Review*, 7(5), 547-561
- Nguyen T. T. & Nguyen, H. (2016). Management Behaviour in Vietnamese Commercial Banks.
- Nicholson, G. J., & Kiel, H., (2007). Board composition and corporate performance: How the Australian experience informs contrasting theories of corporate governance. *Corporate Governance: An International Review*, 11(3), 189-205.
- Panasian, C., Prevost, A. K. & Bhabra, H. S. (2003). Board composition and firm performance: The case of the deyr report and publicly listed Canadian firms.



- Pearce, J. H., & Zahra, S. A. (1992). Board Composition from a strategic contingency perspective. *Journal of Management Studies*, 29(2), 411-438.
- Pfeffer, J. (1972). Size, composition, and function of hospital boards of directors. *Administrative Science Quarterly*, 18(2), 349-364.
- Rashid, A., De Zoysa, A., Lodth, S., & Rudkin, K. (2010). Board composition and firm performance: Evidence from Bangladesh. *Australasian Accounting Business and Finance Journal*, 4 (1), 76 - 95.
- Rashid, M. A. (2011). Assimilating entrepreneurial orientation and market orientation dimensions in the context of women-owned small and medium sized businesses; *African Journal of Business Management*, 5(14), 5974.
- Rosenstein, S. & Wyatt, J. G. (1994). Outside Directors, Board Independence and Shareholder Wealth; *Journal of Financial Economics*, 26(2), 175–191.
- Ross, S.A. (1976). The Arbitrage Theory of Capital Asset Pricing; *The Journal of Economic Theory*, 13, 341–360.
- Rostami, M., Rostami, M., & Kohansa, S. (2016). The effect of corporate governance components on return on assets and stock return of companies listed in Tehran stock exchange; *African Journal of Business Management*, 6(12), 4603-4611.
- Sahin, K., Basfirinci, C. S. & Ozsalih, A. (2011). The impact of board composition on corporate financial and social responsibility performance: Evidence from public-listed companies in Turkey; *African Journal of Business Management*, 5(7), 2959-78.
- Sanda, A. U., Mukaila, A. S, & Garba, T. (2011). Corporate Governance Mechanisms and Firm Financial Performance in Nigeria; *Final Report Presented to the Biannual Research Workshop of the AERC*, Nairobi, Kenya, 24-29.
- Singh, H. & Harianto, F. (1989). Management-board relationships, takeover risk, and the adoption of golden parachutes; *Academy of Management Journal*, 32, 7–24.
- Walker, M. (2009). Do IFRS reconciliations convey information? The effect of debt contraction; *Journal of Accounting Research*, 47, 1167–1199.
- Weisbach, M. S. (1988). Outside directors and CEO turnover; *Journal of financial Economics*, 20, 431- 460.
- Yermack, D., (1996). Higher Market Valuation of Companies with a Small Board of Directors; *Journal of Financial Economics*, 40(1), 185-211.