

## Effect of Corporate Governance on Financial Distress of Pharmaceutical Firms in Nigeria

Ubesie Cyril Madubuko, Ani Michael Uchenna & Ezikanyi Justus Ikenna

Department of Accountancy

Enugu State University of Science and Technology, Enugu, Nigeria.

[ubesiemadubuko@yahoo.com](mailto:ubesiemadubuko@yahoo.com)

DOI [10.56201/ijebm.v10.no1.2024.pg1.14](https://doi.org/10.56201/ijebm.v10.no1.2024.pg1.14)

---

### ABSTRACT

*The study examined the effect of corporate governance on financial distress of pharmaceutical firms in Nigeria. Board size, board composition, and board meetings were the corporate governance mechanism used for the study, while Altman Zeta Score was the dependent variable of the study. The specific objectives of the study which is to ascertain the effect of board size and board composition on Altman Zeta Score of pharmaceutical firms in Nigeria. The study adopted an ex-post-facto research design, covering the period between 2013 and 2022. Secondary data were extracted from the annual reports and accounts of the sampled pharmaceutical firms in Nigeria. Multiple fixed effect regression analysis was used for the panel data analysis and it was revealed that board size has a positive and statistically insignificant effect on the financial distress of firms in Nigeria's pharmaceutical industry. Also, board composition has a positive and insignificant effect on the financial distress of firms in the pharmaceutical industry in Nigeria. These imply that corporate governance of pharmaceutical firms was not a significant cause of their financial distress. With regards to the size of the board, additions or subtractions to the size of the board should be made with respect to how the corporate governance of the organization affects other areas of its performance. The result of the study indicated that board composition has a negative and insignificant effect on the financial distress of pharmaceutical firms in Nigeria. The insignificance of the result shows that the composition of the board of pharmaceutical firms does not matter in their financial distress. However, the firms are advised to reduce the insider participation in the board and decision-making processes in the organization.*

---

### Background of the Study

The healthcare sector is widely acknowledged as a cornerstone of growth and development in any nation. However, in the case of Nigeria, the healthcare sector has faced various challenges that have hindered progress and impacted the well-being of its citizens. A study by Obansa and Orimisan (2013) revealed alarming statistics, with nearly 15 percent of Nigerian children not surviving to their fifth birthday. The leading causes of child mortality were identified as malaria (30 percent) and diarrhea (20 percent), while malnutrition contributed to 52 percent of deaths among children under the age of five.

Despite significant government expenditure and external assistance in the healthcare sector, the health status patterns in Nigeria are worse than anticipated given the country's GDP per capita. The health system faces various issues, including policy inconsistency and reversals, which have

undermined reform efforts over the years. The lack of effective corporate governance, coupled with inefficient human resource management and policy implementation, has led to a massive brain drain in the healthcare sector, with health professionals seeking better conditions abroad.

Corporate governance, the process through which an organization is governed and controlled, plays a pivotal role in ensuring fairness, transparency, and accountability (Arayssi & Jizi, 2018). It has garnered attention due to its profound impact on the performance of businesses and, by extension, the economy. Good corporate governance is associated with high and predictable earnings growth in private sector-driven economies, while weak corporate governance practices are often blamed for the poor performance of businesses in developing nations (Bansal & Singh, 2021).

Corporate governance is essential in resolving conflicts of interest between shareholders and firm managers, optimizing resource management, and ensuring access to low-cost funds (Arayssi & Jizi, 2018). However, in the context of developing economies like Nigeria, many pharmaceutical firms continue to exhibit weak corporate governance practices. This situation leads to conflicts of interest between shareholders and managers, inefficient resource management, and financial distress. Some pharmaceutical companies struggle to survive market competition due to governance-related issues, ultimately leading to financial distress.

Several Nigerian pharmaceutical firms face financial challenges resulting from losses, which can be attributed to poor leadership and corporate governance. For example, Evans Medicals Plc, a company with WHO pre-qualification, encountered financial difficulties and disputes with banks in 2017. As a result, the company faced potential takeover by these banks. This case highlights the financial distress that many pharmaceutical firms in Nigeria grapple with. To measure financial distress, this study employs Altman's Z-Score model, a reliable tool for evaluating the financial health of firms (Altman, 1968)

Altman (2006) submit that Altman's Z-Score model combines various financial ratios into a single score to assess financial viability. A lower score indicates a higher likelihood of financial distress. Studies have shown the model's effectiveness in predicting bankruptcy, making it a valuable diagnostic tool. Altman's model helps evaluate financial health statistically and provides insights into relative performance and financial viability.

The pharmaceutical sector in Nigeria, despite its potential, faces significant financial challenges and struggles to meet international standards for pharmaceutical production. Poor financing and mismanagement of available funds contribute to this poor performance. Shareholders entrust their firms to management, which is monitored through corporate governance mechanisms, including board size, composition, and meeting frequency. This study aims to investigate the impact of corporate governance on the financial distress of pharmaceutical firms in Nigeria, specifically examining the role of board size, composition, and meeting frequency in addressing the financial challenges facing these firms.

### **Objective of the Study**

Consequently, the main objective of this study was to ascertain the effect of corporate governance on financial distress of pharmaceutical firms in Nigeria, while determining the study, the following specific objectives were achieved to:

effect of board size on Altman zeta score of pharmaceutical firms in Nigeria, as well as ascertaining the effect of board composition on Altman zeta score of pharmaceutical firms in Nigeria.

## **Conceptual Review**

### **Corporate Governance**

Corporate governance, as a concept, encompasses the intricate processes involved in the governance of corporate entities (Okafor, 2011). Adeola (2003) highlights that corporate governance codes play a pivotal role in defining the relationships between company management, their boards, and their shareholders. These codes also emphasize that management and directors must carry out their responsibilities within a framework of accountability and transparency. The definitions of corporate governance can be broadly categorized into two types: "narrow" and "broad" (Claessens and Yurtoglu, 2013, as cited in Nguyen and Nguyen, 2016).

Narrow definitions primarily focus on the internal mechanisms of corporate governance within a single country, with a specific emphasis on ascertaining firm performance and maximizing shareholders' benefits (Claessens and Yurtoglu, 2013, cited in Nguyen and Nguyen, 2016). One of the most typical definitions, provided by Shleifer and Vishny (1997), emphasizes that corporate governance concerns the ways in which suppliers of finance to corporations ensure they receive a return on their investment. Similarly, the Cadbury Committee (1992) defines corporate governance as the system by which companies are directed and controlled.

In contrast, the broad set of definitions places greater emphasis on the external institutional environment that affects firms (Claessens and Yurtoglu, 2013, cited in Nguyen and Nguyen, 2016). This broader perspective is particularly suited for cross-national comparative analyses of corporate governance to examine how country-level differences in specific characteristics influence the behavior of firms, shareholders, and stakeholders. The Organization for Economic and Development (OECD) provides a comprehensive definition of corporate governance, emphasizing that it involves a set of relationships between a company's management, its board, its shareholders, and other stakeholders. It further underscores that corporate governance establishes the structure for setting the company's objectives, determining the means of achieving those objectives, and monitoring performance.

This broader definition recognizes that corporate governance is not solely concerned with the internal mechanisms of corporate governance structure and shareholders' profit. It also takes into account the external mechanisms of corporate governance and the interests of stakeholders (Nguyen and Nguyen, 2016). In the context of this study, the focus will be on the characteristics of board size, board composition, and the number of board meetings as crucial internal corporate governance mechanisms for in-depth analysis within an individual country.

### **Board Size**

Board size is a critical board characteristic that has been extensively studied for a variety of reasons. Firstly, it is widely believed that board size can significantly impact firm performance. This belief aligns with agency theory, which suggests that the number of directors on a board plays a crucial role in determining the CEO's dominance within the board. In this context, a larger board size can make it more challenging for the CEO to exert complete control over the board, ultimately leading to a more effective board in terms of managing earnings and enforcing performance standards (Zahra and Pearce, 1989).

Additionally, board size's importance is also recognized by resource dependency theory, which posits that external parties possess resources that are vital for a business organization to achieve its internal objectives. To access and maintain these resources, a company must establish connections with its external environment, and the board of directors serves as a vehicle for this

purpose. From this perspective, a larger board of directors is assumed to be more capable of co-opting external influences, thereby gaining access to valuable resources that are essential for corporate success (Johnson et al., 1996).

However, it is worth noting that not all views on board size are positive. Lipton and Lorsch (1992) argue that larger board size can decrease firm productivity because it becomes more challenging to reach a consensus with the CEO when boards are large. They suggest that larger boards may face difficulties in coordination, and free riding among board members may become more common. Forbes and Milliken (1999) and Hackman (1990) support this perspective by demonstrating that large boards can be challenging to coordinate, and making value-maximizing decisions can be problematic for them.

### **Board composition**

The primary role of corporate boards is to engage in monitoring activities, and empirical studies have highlighted the crucial link between effective monitoring and the independence of boards (John, 1998). Consequently, the independence of boards, particularly the presence of outside directors, becomes increasingly important for board performance (Zahra, 1989). Outside directors have strong incentives to monitor managers because their own reputations are tied to the company's performance, and they can enhance their own human capital through this role. Moreover, studies like Prevost, Rao, and Hossain (2002b) have found an inverse relationship between the proportion of outside board members and capital expenditure commitment, which serves as a proxy for growth. They also observed a positive relationship between the proportion of outside board members, firm performance, and board size.

Wan and Ong (2005) point out that outside directors are more likely to exhibit independence in fulfilling their roles and responsibilities. These directors are inclined to improve the norms of effort within the board because they aim to demonstrate that the board is effectively carrying out its responsibilities. A board with a higher proportion of outside directors is assumed to be more aligned with the firm's mission, goals, and strategies. Wan and Ong (2005) also argue that outside directors bring a wealth of skills and knowledge to the company. Unlike insiders who are deeply entrenched in their organizational relationships, outside directors have diverse backgrounds from various organizations and are less familiar with the inner workings of the company. Mak and Roush (2000) also discovered a positive relationship between the proportion of outside directors and a firm's growth opportunities.

## **Theoretical Review**

### **Agency Theory**

Agency theory has established itself as a dominant approach in the realm of corporate governance studies (Dwivedi and Jain, 2005). It revolves around the concept of an agency relationship, which is essentially a contract where one or more individuals (the principal) engage another person (the agent) to perform certain services on their behalf. This arrangement often involves delegating decision-making authority to the agent (Jensen and Meckling, 1976). According to the agency model, the fundamental issue arises from the separation of ownership and control, giving rise to an inherent conflict of interest between the shareholders (the principals) and the management (the agents) (Aguilera et al., 2008).

While managers are assumed to be rational, there is a lack of absolute trust in their unwavering commitment to act in the best interests of the principals because they are also considered to be self-interested (Williamson, 1975; Padilla, 2002). As a result, mechanisms are needed to control

managers and prevent "moral hazard," which involves their potentially deviant behaviors (Jensen, 1983). Recognizing the importance of the board as a means of controlling the opportunistic behavior of managers, agency theory emphasizes the board's role as an instrument of owners (Stiles and Taylor, 2001). The theory advocates for a clear separation between decision management and control (Fama and Jensen, 1983).

Holmstrom and Milgrom (1994) introduced an alternative perspective that suggests agents should focus on projects with high returns and receive fixed wages without fluctuating incentive payments. This theory proposes that the roles of CEO and chair should be distinct, although it does not eliminate corporate misconduct. It relies on a positivist approach where agents are controlled by rules established by principals to maximize shareholders' value. Therefore, this theory takes a more individualistic view (Clarke, 2004). Agency theory can be effectively employed to explore the relationship between ownership and management structure, particularly in cases where a separation exists, as it helps align the management's objectives with those of the owners.

### **Stewardship Theory**

The stewardship theory took an opposite view of management (Donaldson, 1991; Donaldson and Muth, 1998). While agency theory hypothesised that managers are self-interested, the stewardship theory advanced that indeed managers can be trustworthy and thus not enticed by the extrinsic value but rather intrinsically motivated by the desire for accomplishment, acknowledgement, self-actualization, self-fulfilment, power, and affiliation. The theory recommends unification of the position of CEO and board chair to reduce agency costs and promote the unity of command doctrine. One of the most viable paths to achieving board effectiveness and performance variation is conditioned on the degree of board dependency with greater executive directors' involvement. By privilege, the executive directors are presumed to have perfect information about the workings of the firm and therefore more suitable to play a monitoring and control role as against the outsiders who might not possess the requisite knowledge and expertise required to perform the task (Donaldson and Muth, 1998).

The stewardship perspective suggests that stewards are satisfied and motivated when organizational success is attained. Agyris (1973) argues agency theory looks at an employee or people as an economic being, which overwhelms an individual's aspirations while stewardship theory recognizes the importance of structures that empower the steward and offers maximum autonomy built on trust (Donaldson and Davis, 1991). It stresses the position of employees or executives to act more autonomously so that the shareholders' returns are maximized. Indeed, this can minimize the costs aimed at monitoring and controlling behaviours (Davis, Schoorman & Donaldson, 1997).

### **Empirical Review**

Potharla and Amirishetty (2021) conducted a study in India to examine the non-linear relationship between board size, board independence, and the financial performance of listed non-financial firms. The study utilized panel least squares regression and quantile regression techniques on data from 2011 to 2018. The findings indicated a non-linear inverted U-shaped relationship between board size and board independence with financial performance, as measured by return on assets (ROA) and Tobin's Q.

Andoh et al. (2022) investigated the impact of board characteristics on the performance of listed non-financial firms and banks in Ghana. The study employed fixed and random effects models



with generalized least squares specifications. The results revealed similarities and differences between the two types of firms. Board size had a significant non-linear impact on Tobin's Q for both non-financial firms and banks. The proportion of foreign board members had a positive relationship with firm performance in both samples. However, the impact of board composition, board gender diversity, and the proportion of board members with higher educational qualifications on firm performance differed between banks and non-financial firms.

Radu et al. (2022) examined the relationship between board of directors' attributes and corporate social performance. The study analyzed the effects of board characteristics such as size, independence, and gender diversity on the environmental and social dimensions of corporate social performance. The study used a multivariate approach and found that the impact of board attributes varied depending on the industry. Board independence had a positive association with the environmental dimension of performance across all industries but had a negative association with the social dimension in environmentally sensitive industries. Board size had a positive association with the environmental dimension in environmentally sensitive industries and with the social dimension in all industries. The effects of board attributes were also influenced by the industry sector.

Jirasek (2021) examined the moderation effect of board characteristics on performance feedback in German automobile and manufacturing firms. The study analyzed the impact of board size, turnover, and age diversity on firms' responsiveness to performance feedback. The findings showed that age diversity of the board and turnover of board members had a moderating effect, while board size did not significantly influence firms' responsiveness to performance feedback.

Erena et al. (2021) studied the impact of corporate governance mechanisms on financial and non-financial performance in medium and large-scale manufacturing firms in Ethiopia. The study used a questionnaire to collect data on board independence, board effectiveness, shareholders' role, internal audit effectiveness, and disclosure and transparency. The analysis using structural equation modeling revealed a positive relationship between board independence and firm performance. However, board effectiveness showed a significant negative effect on certain aspects of firm performance. The study also found positive effects of disclosure and transparency on certain performance indicators, while internal audit effectiveness had a negative impact on some performance measures. Shareholders' role was found to have a positive impact on board characteristics and firm performance.

Dakhli (2021) conducted a study on the impact of financial performance on the relationship between board attributes and corporate social responsibility (CSR) in French companies. Using panel data from 200 listed French companies during the period 2007-2018, the study found significant direct relationships between board attributes and CSR. Board independence and female board representation were positively associated with CSR, while board size and CEO-chair duality had a negative association with CSR. The study also revealed that corporate financial performance significantly influenced the effect of board size, board independence, and CEO duality on CSR, but did not moderate the relationship between female board representation and CSR.

Nguyen et al. (2021) conducted a study on the impact of corporate governance on the dividend policy of enterprises in Vietnam. The research focused on companies listed on Vietnam's stock exchange during the period from 2008 to 2018, with a total of 2,937 observations. The GLS regression method was employed to analyze the data collected from these listed companies. The findings revealed that corporate governance, the chairman of the board of directors (BOD), and

the managing director had a negative effect on the dividend policy. Specifically, companies with strong BODs tended to pay low dividends.

Bansal and Singh (2021) investigated the impact of board structure on the financial performance of Indian software companies. The empirical study analyzed 92 software companies from 2011 to 2018. Board size, board independence, board meetings, CEO duality, audit committee, remuneration committee, and nomination committee were considered as board structure variables. Financial performance was measured using return on assets (ROA), return on equity (ROE), and Tobin's Q. Panel regression was employed to test the hypotheses. The results indicated that board size, board meetings, and remuneration and nomination committee had a positive impact on multiple performance measures. However, the audit committee did not show any significant relationship with the performance measures. Additionally, CEO duality had a negative but significant relationship with firm performance, while board independence had a negative influence on ROA.

Haddad (2022) compared the impacts of board quality (BQ) on the financial performance (FP) of conventional and Islamic banks (IBs) after the Subprime financial crisis. The study used the GLS method and collected data from 30 countries located on 4 continents. The sample consisted of 112 banks, with equal representation from conventional banks and Islamic banks. The analysis focused on banks that regularly published annual reports from 2010 to 2018. The cylindrical panel results revealed that in conventional banks, BQ had a negative impact on FP, while in Islamic banks, the impacts of BQ on FP were ambiguous. However, the positive impacts were found to be more significant on the FP of Islamic banks compared to the negative impacts.

Roonowah and Seetanah (2022) examined the influence of corporate governance mechanisms and ownership structures on corporate governance disclosure (CGD) in listed Mauritian companies. The study analyzed 42 Mauritian listed companies (38 non-financial and 4 financial firms) from 2009 to 2019. Multivariate regression techniques, including static and dynamic panel data models, were used for analysis. In the static model, board size, board meeting frequency, CG committee meeting frequency, and audit committee meeting frequency were found to be major determinants of CGD, while ownership structure variables such as managerial ownership and institutional ownership did not influence CGD. In the dynamic model, CG meeting frequency was identified as a major determinant. The determinants of CGD varied between non-financial and financial firms.

### Research Design

The study adopted ex-post facto research design, leveraging historical data. This research was centered on Nigeria's pharmaceutical sector and included all fourteen publicly listed pharmaceutical companies on the Nigeria Stock Exchange as of December 31, 2022, and data were sourced from the annual reports and accounts of the selected pharmaceutical firms, spanning the period from 2013 to 2022. The final sample for the study comprised four pharmaceutical companies, selected based on their ability to provide the necessary data and employing a judgmental sampling technique.

The model was specified as follows:

$$Z\text{-SCORE}_{ti} = \beta_0 + \beta_1\text{BDSIZE}_t + \beta_2\text{BDCOMP}_t + \varepsilon_t \quad - \quad [\text{Equation (4)}]$$

Where;

Z-SCORE	Altman zeta score
BDSIZE	Board Size

BDCOMP	Board Composition
$\epsilon$	Stochastic disturbance (Error) Term
$\beta_0$	Coefficient (constant) to be estimated
$\beta_i - \beta_2$	Parameters of the independent variables to be estimated
t	Current period

The Altman's Zeta score model was specified as follows:

$$\text{Z-Score} = 1.2(\text{Z1}) + 1.4(\text{Z2}) + 3.3(\text{Z3}) + 0.6(\text{Z4}) + 0.999(\text{Z5})$$

Where:

- Z 1 = working capital / total assets
- Z 2 = retained earnings / total assets
- Z 3 = earnings before interest and tax / total assets
- Z 4 = market value of equity / total liabilities
- Z 5 = sales / total assets

The Z score was calculated by multiplying each of several financial ratios by an appropriate coefficient and then summing the results. Significant ratios identified by Altman with regard to bankruptcy prediction were working capital over total assets, retained earnings over total assets, earnings before interest and taxes over total assets, market value of equity over book value of total liabilities. Employing a multiple discriminant analysis (MDA) statistical technique, Altman evaluated 22 different financial ratios using a database of 66 publicly traded manufacturing firms in USA (Altman, 1968). The research concluded that by combining five balance sheets and performance ratios, weighted by established coefficients that account for their relative importance, one could discriminate or identify financially distressed companies.

## DATA PRESENTATION AND ANALYSIS

**Table 4.2.1: Descriptive Statistic**

	<b>Z_SCORE</b>	<b>BDSIZE</b>	<b>BDCOMP</b>
Mean	3.050027	9.000000	0.625713
Median	1.775000	9.000000	0.563492
Maximum	25.89000	14.00000	0.888889
Minimum	-0.630000	7.000000	0.428571
Std. Dev.	4.670966	1.432230	0.151698
Skewness	3.740831	1.484924	0.469552
Kurtosis	17.45240	6.200000	1.904419
Jarque-Bera	441.4120	31.76667	3.470359
Probability	0.000000	0.000000	0.176369
Sum	122.0011	360.0000	25.02853
Sum Sq. Dev.	850.8992	80.00000	0.897480
Observations	40	40	40

*Source: Computed by Researcher Using Eviews 10.0 Statistical Software*



The normality of the distribution of the data series is shown by the coefficients of Skewness, Kurtosis, and Jarque-Bera Probability. From the Table 4.2.1, the probability of the Jarque-Bera Statistics for all the variables (focal and explanatory) have significant p-values, except for board composition. They are as follows z-score (0.000000), board size (0.000000) and board composition (0.176369). The significance of p-values depicts a non-normal distribution for majority of the variables studied used in the study. This was further confirmed by the skewness coefficients which are all greater than one, except for board composition. The kurtosis coefficient provides a second level of confirmation that all the variables, except for board composition and board meetings, are non-normally distributed with the following coefficients, z-score (17.45240), board composition (1.904419) and board size (6.200000) which are all greater than three, except for board composition. This is the case of the data extracted from annual reports and accounts of firms in Nigeria's pharmaceutical industry.

**Table 4.2.2: Regression Analysis Result**

Dependent Variable: Z\_SCORE

Method: Panel Least Squares

Date: 10/04/23 Time: 04:01

Sample: 2013 2022

Periods included: 10

Cross-sections included: 4

Total panel (balanced) observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BDSIZE	0.759553	0.496616	1.529459	0.1357
BDCOMP	8.289309	9.602008	0.863289	0.3942
BDMT	-0.000290	0.616008	-0.000471	0.9996
C	1.402262	8.736697	0.160503	0.8735

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.379796	Mean dependent var	3.050027
Adjusted R-squared	0.267032	S.D. dependent var	4.670966
S.E. of regression	3.998981	Akaike info criterion	5.767585
Sum squared resid	527.7311	Schwarz criterion	6.063138
Log likelihood	-108.3517	Hannan-Quinn criter.	5.874448
F-statistic	3.368049	Durbin-Watson stat	1.260722
Prob(F-statistic)	0.010602		

*Source: Computed by Researcher Using Eviews 10.0 Statistical Software*

Table 4.2.2 reveals that board size has an insignificant and positive effect on financial distress, measured with z-score, with a probability value that is greater than 0.05 (0.1357) and t-statistic that is lesser than 2 (1.529459). Board composition has a positive but insignificant effect on financial distress of pharmaceutical firms in Nigeria with probability values that is greater than 0.05 (0.3942) and t-statistic that is lesser than 2 (-0.863289).

The table further depicts that a one percent increase in board size will increase Z-score by 75%. This indicates that board size decreases the financial distress in the pharmaceutical industry. While a one percent increase in board composition, results in 828% increase in Z-score. This means that the variable decreases the level of financial distress in the pharmaceutical industry. Furthermore, one percent increase in board meetings will decrease the Z-score by 0.02%. This means that the variables increase the financial distress in the pharmaceutical industry. The adjusted R-squared ( $R^2$ ) indicated that about 26% of the changes in financial distress, measured by Z-score, is accounted for by the explanatory variables. The remaining 74% could be explained by other factors capable of influencing the financial distress of firms in the pharmaceutical industry in Nigeria. The probability of the F-statistic (0.010602) is significant which shows the statistical fitness of the multiple regression results. There is a presence of slight negative serial autocorrelation in the panel data extracted from annual reports and accounts of pharmaceutical firms in Nigeria as suggested by Durbin-Watson statistics of 1.26.

### **Test of Hypotheses**

**Statement of Decision Rule:** Reject  $H_0$  if the P-value tabulated is less than the  $\alpha$ -value calculated (0.05), t-statistic is  $> 2$ , and accept the null hypotheses if reverse becomes the case.

**Hypothesis One:** Board size does not significantly affect Altman zeta score of pharmaceutical firms in Nigeria.

**Decision:** From the panel regression analysis in Tables 4.2.5e, the p-value of 0.1357  $>$  0.05  $\alpha$ -value, and the 1.529459 t-statistic  $<$  2. Therefore, the null hypothesis is accepted and the alternative hypotheses rejected. The indication is board size does not significantly cause the financial distress of firms in Nigeria's pharmaceutical industry, measured by Altman zeta score.

**Hypothesis Two:** Board composition does not have significant effect on Altman zeta score of pharmaceutical firms in Nigeria.

**Decision:** From the panel regression analysis in Tables 4.2.5e, the p-value of 0.3942  $>$  0.05  $\alpha$ -value, and the 0.863289 t-statistic  $<$  2. Therefore, the null hypothesis is accepted and the alternative hypotheses rejected. This shows that the board composition of firms in Nigeria's pharmaceutical industry does not significantly cause the financial distress in the industry, which is measured by the Altman zeta score.

### **Discussion of Findings**

#### **Board size and financial distress**

In the test of hypotheses one, the panel regression analysis result reveals that board size has no statistically significant effect on Altman z-score. However, board size indeed showed a positive

effect on Altman z-score, but the value of the t-statistics indicated that this effect is not statistically significant. This result means that an increase or decrease in the board size of firms in the pharmaceutical industry in Nigeria, will in no way result to significant increase or decrease of zeta score in the industry. This further supports the belief that it is not the size of the board that matters in decision making processes of the organization, but the level of competence obtainable in the board. Meaning that whether the board size increases, or decreases, the financial situation of the industry will still remain the same.

In the test of hypothesis two, the panel regression analysis result reveals that board composition has a positive but insignificant impact on the Altman Zeta score of firms in the pharmaceutical industry in Nigeria. The value of the t-statistics (0.863289) further prove this. This finding is in line with the findings for Pharma-Deko Nigeria Plc and GlaxoSmithKline Nigeria Plc, when they are each considered in isolation. The result shows that even when the composition of the dependent board members of the organization is high, the level of financial situation that the organization has itself in will neither improve nor deteriorate further. Practically, this result means that when the number of non-executive board of directors in an organization increases, it does not necessarily translate into significant improvements in the firms' financial situation.

### **Conclusion**

The study examined the effect of corporate governance on the financial distress of pharmaceutical firms in Nigeria. Board governance over the years has gained a lot of traction, with a number of researchers of the opinion that corporate governance is vital for the improvement in profitability and general performance of any organization. Components of corporate governance such as board meetings, board composition, board size, board independence and board diversity, have been researched in a bid to understand the individual effects that they have on the performance of organizations. The path-goal theory and the agency theory all point to the various outcomes that may yield in the presence of various forms of board governance. However, the key motivation towards the persistence in this field is the skill and decision making that board of directors are believed to offer. More so, a very diversified board with adequate composition will even bring more to the table.

Therefore, the study was motivated to explore the effect of corporate governance on the financial distress of pharmaceutical firms in Nigeria. The objective of the study was properly drafted to capture the various components of corporate governance, and how each of them impact on the financial distress of organizations, with specific reference to the firms in the pharmaceutical industry. Using a fixed effects panel regression model the study found that board size has a positive and insignificant effect on the Altman z-score, which is the measure of financial distress in the study. Furthermore, the study found a negative and insignificant effect of board composition and board meetings on the Altman z-score, measuring financial distress of firms.

### **Recommendations**

Following the findings from the outcome of the study, the following recommendations are made:

- i. That with regards to the size of the board, additions or subtractions to the size of the board should be made with respect to how the corporate governance of the organization affects other areas of its performance.
- ii. That pharmaceutical firms are advised to reduce the insider participation in the board and decision-making processes in the organization.

## 6. REFERENCES

- Adeola, F. (2003). Transparent and accountable corporate governance in the capital market: challenges for market operators and stakeholders, *Nigerian Stock Market Annual*.
- Agyris, C. (1973). Some limits of rational man organizational theory. *Public Administration Review*, 33, 253–267.
- Altman, E.I. (1968) Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy. *Journal of Finance*, 23 (4), 589-609.
- Altman, E.I. (2006) *Corporate Financial Distress and Bankruptcy: Predict and Avoid Bankruptcy, Analyze and Invest in Distressed Debt*. Hoboken, New Jersey: Wiley.
- Andoh, J. A. N., Abugri, B. A. and Anarfo, B. E. (2022). Board characteristics and performance of listed firms in Ghana. *Corporate Governance: The International Journal of Business in Society*, 2(3); 23-30
- Anya, O.A. (2003). Corporate governance as an effective tool for combating financial and economic crimes, *The Nigerian Banker*, October-December.
- Arayssi, M. & Jizi, M. I. (2018). Does corporate governance spillover firm performance? A study of valuation of MENA companies, *Social Responsibility Journal*, 15(5);187-200
- Bansal, D. and Singh, S. (2021). Does board structure impact a firm's financial performance? Evidence from the Indian software sector. *American Journal of Business*, 37(); 45-55
- Bansal, D. and Singh, S. (2021). Does board structure impact a firm's financial performance? Evidence from the Indian software sector. *American Journal of Business*, 37(); 45-55
- Claessens, S.; Djankov, S. & Fan, J.P.H. (2002). Disentangling the incentive and entrenchment effects of large shareholders. *The Journal of Finance*, 57 (6): 2741-71.
- Dakhli, A. (2021). Does financial performance moderate the relationship between board attributes and corporate social responsibility in French firms? *Journal of Global Responsibility*, 12(4); 211-230
- Davis, J.H., Schoorman, F.D. & Donaldson, L. (1997). Toward a stewardship theory of management. *Academy of Management Review*, 22, 20-47.
- Donaldson, L. (1991) The ethereal hand: organizational economics and management theory. *Academic Management Review*, 15, 369–381.
- Donaldson, L. and Davis J. H. (1991) Stewardship theory or agency theory: CEO governance and shareholder returns. *Aust Journal of Management*, 16, 49–64.
- Dwivedi, N. and Jain, A. K. (2005). Corporate Governance and Performance of Indian Firms: The Effect of Board Size and Ownership. *Employee Responsibilities and Rights Journal*, 17, 161–172.
- Erena, O. T., Kalko, M. M. and Debele, S. A. (2021). Corporate governance mechanisms and firm performance: empirical evidence from medium and large-scale manufacturing firms in Ethiopia. *Corporate Governance: The International Journal of Business in Society*, 22(2), 76-100

- Fama, E. F., & Jensen, M. C. (1983). Agency problems and residual claims. *Journal of Law and Economics*, 27, 327–349.
- Forbes, D. P. and Milliken, F. J. (1999). Cognition and corporate governance: understanding boards of directors as strategic decision-making groups. *Academy of Management Review*, 24(3), 489-505.
- Hackman, J. R. (Ed.). (1990). Groups that work (and those that don't). San Francisco: Jossey-Bass.
- Haddad, A. (2022). Effect of board quality on the financial performance of conventional and Islamic banks: international comparative study after the Subprime crisis. *Journal of Accounting in Emerging Economies*, 36(2), 32-40
- Holmstrom, B. and Milgrom, P. (1994). The firm as an incentive system. *The American Economic Review*, 84(4), 972-991.
- Jensen MC (1994) Self-interest, altruism, incentives, and agency theory. *J Appl Corp Finance* 7:40–45.
- Jensen, M. (1993). The modern industrial revolution, exit and the failure of internal control systems. *Journal of Finance*, 48, 831-880. <http://dx.doi.org/10.2307/2329018>.
- Jensen, M. C., & Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, 3, 305–360.
- Jirasek, M. (2021). Corporate boards' and firms' R&D responses to performance feedback. *Journal of Strategy and Management*, 23-40
- John, A. O. (1998). Effect of firm size on profitability: Evidence from Nigerian manufacturing sector. *Prime Journal of Business Administration and Management*, (BAM), 3(9), 1171-1175.
- Johnson J L, Daily C M and Ellstrand A E (1996), “Boards of Directors: A Review and Research Agenda”, *Journal of Management*, 22(3), 409-438.
- Lipton, M., and Lorsch, J. (1992). A Modest Proposal for Improved Corporate Governance. *Business Lawyer*, 48(1), 59-67.
- Ma, S. & Tian, G. G. (2009). Board Composition, Board Activity and Ownership Concentration, the Impact on Firm Performance. *Problems and Perspectives in Management*, 7(3), 31-50.
- Nguyen, H. V., Dang, H. N., & Dau, H. H. (2021). Influence of corporate governance on dividend policy in Vietnam. *Journal of Asian Finance, Economics and Business*, 8(2), 893-902. DOI: 10.13106/jafeb.2021.vol8.no2.0893.
- Nguyen, T., Locke, S., & Reddy, K. (2015). Ownership concentration and corporate performance from a dynamic perspective: Does national governance quality matter?. *International Review of Financial Analysis*, 41, 148-161.
- Obansa, J. A. and Orimisan, A. (2013). Health Care Financing in Nigeria: Prospects and Challenges. *Mediterranean Journal of Social Sciences* 4(1), 221-236.



- OECD (2004). *Principles of Corporate Governance*, (Paris: OECD 2004), at p. 11.
- OECD (2009). *The corporate governance lessons from the financial crises*. Financial Market Trends
- John, A. O., & Adebayo, O. (2013). Effect of firm size on profitability: Evidence from Nigerian manufacturing sector. *Prime Journal of Business Administration and Management (BAM)*, 3(9), 1171-1175.
- Okafor, F.O. (2011). *50 years of Banking Sector Reforms in Nigeria (1960-2010. Past Lessons): Future Imperatives*, Enugu: Ezu Books Ltd. 52-57.
- Padilla, A. (2002). Can agency theory justify the regulation of insider trading? *The Quarterly Journal of Austrian Economics* 5(1), 3-38.
- Potharla, S. & Amirishetty, B. (2021). Non-linear relationship of board size and board independence with firm performance – evidence from India. *Journal of Indian Business Research*, 13(4); 1-15
- Prevost, A. K. Rao, R. and Hossain, M. (2002). Determinants of board composition in New Zealand: A simultaneous equations approach. *Journal of Empirical Finance*, 9(4), 373-397.
- Radu, C., Smaili, N. & Constantinescu, A. (2022). The impact of the board of directors on corporate social performance: a multivariate approach. *Journal of Applied Accounting Research*, 1(1); 123-140
- Ronoowah, R. K. & Seetanah, B. (2022). Determinants of corporate governance disclosure: Evidence from an emerging market. *Journal of Accounting and Emerging Economies*, 211220
- Shleifer, A. & Vishny, R. (1989). Management entrenchment: The case of manager specific investments. *Journal of Financial Economics*, 25: 123-140.
- Stiles, P., & Taylor, B. (2001). *Board at Work: How Directors View their Roles and Responsibilities*. Oxford: Oxford University Press.
- Wan, D. and Ong, C. H. (2005). Board Structure, Process and Performance: Evidence from Public-listed Companies in Singapore. *Corporate Governance An International Review*, 13(2), 277-290.
- Williamson, O. (1975). *Markets and Hierarchies*. New York: Free Press.
- Zahra, S. A. and Pearce, J. (1989). Boards of Directors and Corporate Financial Performance: A Review and Integrative Model. *Journal of Management* 15(2): 291-334.