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## Bankruptcy Risk of Listed Companies in The Nigerian Stock Exchange

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### Abstract

*The study examined bankruptcy risk among companies listed on Nigerian stock exchange. Bankruptcy represents the indicator to prevent allocation of resources from further channeling into failing business. Financial distress among companies is mostly linked to bankruptcy. In this study bankruptcy risk was measured using the Altman's Z-Score bankruptcy prediction model. The study adopted the ex-post facto research design. Secondary data were utilized as sourced from the sample size of one hundred and twenty four (124) companies listed on the Nigerian Stock Exchange between years 2012 to 2016. Methodologically, the study employed two (2) multiple regression models. The analyses involve the application of descriptive statistics, correlation matrix, panel data regression (model one) and hierarchical moderated regression (for model two). The result shows that, there is a significant negative effect of executive compensation on bankruptcy risk of listed companies in Nigeria. Considering that executive compensation significantly reduces the risk of bankruptcy, the study recommends that management of Nigerian listed companies should consolidate and strengthen their top compensation structures with the use of appropriate incentive plans that guarantees both short and long terms for sustained financial performance, while deteriorating firms should adopt a compensation system based on managerial performance in order to maximize managerial productivity.*

**Keywords:** Bankruptcy Risk, Listed Companies in Nigeria, and Nigerian Stock Exchange

The issues pertaining to corporate financial distress and business collapse are not new in all business climes. Large corporations from different climes have collapsed in recent past for several reasons including massive earnings distortions and accounting malpractices. The financial crisis and eventual collapse of high-profile companies such as Enron, WorldCom, Parmalat (USA) was a 'big blow' to the business world as their going concern statuses were never in doubt prior to their filing for bankruptcy (Dibra, 2016). There were equally some similar cases involving Nigerian firms, such as Lever Brothers and Cadbury, which further re-establish the certainty that no company could be termed as "too big to fall". Reports from different researchers contest that despite

receiving clean bills of health from their auditor, majority of the distressed firms went bankrupt not long after declaring huge earnings (Dabor & Dabor, 2015). The consequential effects of insolvency are often not pleasant to all stakeholders.

Bankruptcy has been described as a circumstance where the company is unable to service its debt obligation or having difficulty in paying pecuniary obligation to creditors (Venkata, Azash & Ramakrishnaiah, 2012), while bankruptcy risk can be referred to the probability that a company would fail or survive. Nagar and Sen (2016) noted that bankruptcy risk is often greater when the firm's assets are poorly managed. Thus, in line with agency theory, where ownership and control are separated, the opportunistic behaviour of managers in seeking their own interest rather than those of the shareholders' can pose a risk of bankruptcy to the firm.

Bankruptcy is a circumstance when companies are unable to meet or having difficulty to pay pecuniary obligation to creditors. "Bankruptcy", "insolvency", "default", and "failure" are the other terms usually used to describe the situation where the firms face financial difficulties. Bankruptcy occurs when the liabilities of a firm is more than value of the assets existing in the firm (Gitman & Emery, 1996). According to Senbet and Wang (2012), bankruptcy is essentially a transfer of ownership from equity holders to debt holders when the value of assets drops below the value of debt. Beaver (1966) describes bankruptcy as business failure and eventual death. Corporate bankruptcy represents the indicator to prevent allocation of resources from further channeling into failing business. Some study also link financial distress to bankruptcy. For example, Kihoto, Omagwa, Wachira and Ronald (2016) described financial distressed firms as those facing financial constraints thus not being able to carry out their day to day activities smoothly. They also linked distress to bankruptcy, insolvency, failure or even default.

A clearer description of bankruptcy was given by Amendola, Restaino and Sensini (2013) to ascribed bankrupt status to include those firms that have been legally declared as being unable to meet financial obligations to creditors and is under court supervision. The dissolved status includes the company that no longer exists as a legal entity, but the reason for this is not specified. This means that the company is dead, has no more activity or is no longer included in the companies register. Gordon (1971) as cited in Outecheva (2007) assert that the term "financial distress" is used in a negative connotation in order to describe the financial situation of a company confronted with a temporary lack of liquidity and with the difficulties that ensue in fulfilling financial obligations on schedule and to the full extent. He notes that financial distress is determined in terms of failure, default, bankruptcy, or distressed restructuring, dependent on the underlying methodology and the objectives of the overall research. He also stressed that the deepest point of financial distress (i.e. extreme financial distress), is known as default (i.e. bankruptcy). Financial distress can be subdivided into four sub-intervals: deterioration of performance, failure, insolvency, and default. Whereas deterioration and failure affect the profitability of the company, insolvency and default are rooted in its liquidity (Outecheva, 2007). Specifically, bankruptcy risk (probability of bankruptcy), as used in this study, means the probability that a firm would go into 'default' (fails) or not (survives). Considering this definition, it's evident that the definition of financial distress better describes the concept of bankruptcy risk because financial distress predates or precedes bankruptcy.

A firm that files for bankruptcy is universally considered to be in financial distress, but bankruptcy is the extreme manifestation of financial distress. A firm filing for bankruptcy may have been experiencing financial problems for some time before the filing, but it is difficult to identify when the period of distress began. Moreover, liquidation and bankruptcy are often discussed in the literature as though they are related. Liquidation is the process of dismantling the firm's assets and selling them (either piecemeal or in their entirety) to new management teams. Liquidation is optimal when the value of the firm's existing resources is higher in alternative uses. Hence, liquidation should be viewed as a capital budgeting decision that is independent of the way in which the firm is financed. Liquidation and bankruptcy are separate, independent events. A profitable firm with high leverage may remain viable as a going concern, irrespective of bankruptcy, while an unprofitable firm may be liquidated even if it has no debt in its capital structure. It is important to resist the temptation of confounding bankruptcy and liquidation, because liquidation costs may be mistakenly characterized as bankruptcy costs. The latter, if significant, are determinants of the firm's capital structure, but liquidation costs are inconsequential to corporate financial policies or leverage decisions. Bankruptcy actually reduces the likelihood of assets disposals because assets are not sold quickly once a bankruptcy filing occurs. Upon filing for bankruptcy, cash does often not leave the firm without the approval of a judge. Without pressure to pay debts, the firm can remain in bankruptcy for months as it tries to decide on the best course of action. Hence, the increasing research attention towards bankruptcy risk and its possible determinants can be linked to the renewed stakeholders' quest for pre-detecting and avoiding 'about-to-die' firms in order to reduce investment risks.

Eminent failure or bankruptcy of businesses and its prediction is of great importance to various stakeholders including investors, suppliers, creditors and shareholders. A business could fail as a result of economic reasons, where a firm's revenue cannot cover its cost, financial where the firm is unable to meet its current obligations even though its asset is more than its total liabilities or bankruptcy if a firm's total liability exceeds its total assets. Whitaker (1999) found that firms become bankrupt as a result of economic distress stemming from a fall in industry operating income and poor management, arising out of incessant losses over a period of five years. Whitaker's explanations of business failure seem to agree with the economic and financial reasons given above, but differ from the fact that, the fall in operating income is as a result of poor management. Altman (2006) assigned managerial incompetence as the most pervasive reason for corporate failures. This assertion seems to agree with the view of Whitaker that management incompetence is a main reason for company failure. In recent times many business failures have been attributed to poor corporate governance. Corporate governance is a set of dependable relationship between the directors, owners and other stakeholders of an entity. Corporate governance also underpins the structural arrangements put in place to enable the entity achieve its objectives and be able to monitor and measure performance. Poor corporate governance results in inappropriate decisions, lack of supervision and oversight responsibility over company activities, poor internal controls and abuse of power by both the board of directors and management.

Competition is another facet that when not properly managed would result in business failure.

The empirical approach to bankruptcy prediction has recently gained further attention from financial institutions, mainly due to the increasing availability of financial information. Therefore, this paper intends to corroborate other studies by examining bankruptcy risk of listed companies in the Nigerian Stock Exchange.

### **Objectives of the Study**

The specific objectives are to:

1. examine the effect of executive compensation on bankruptcy risk of listed companies in Nigeria.
2. determine the effect of debt covenant on bankruptcy risk of listed companies in Nigeria.
3. ascertain the extent to which income smoothing affect bankruptcy risk of listed companies in Nigeria.

### **Research Questions**

Based on the above objectives, the researcher proposes the following research questions:

1. What effect does executive compensation have on bankruptcy risk of listed companies in Nigeria?
2. How does debt covenant affect bankruptcy risk of listed companies in Nigeria?
3. To what extent does income smoothing affect bankruptcy risk of listed companies in Nigeria?

### **Research Hypotheses**

1. **H<sub>0</sub>**: Executive compensation has no significant effect on bankruptcy risk of listed companies in Nigeria.
2. **H<sub>0</sub>**: There is no significant effect of debt covenant on bankruptcy risk of listed companies in Nigeria.
3. **H<sub>0</sub>**: Income smoothing has no significant effect on bankruptcy risk of listed companies in Nigeria.

### **Methodology**

The study adopts the *ex-post facto* research design because of its suitability for the quantitative research paradigm that underpins this study. The population consists of the entire companies listed on the floor of the Nigerian Stock Exchange (NSE). As at 31<sup>st</sup> December, 2016, there are a total of one hundred and seventy-nine (179) companies listed in the NSE ([www.nse.com.ng](http://www.nse.com.ng)). The simple random sampling technique was used to arrive at a sample size of one hundred and twenty four (124). The study made use of secondary data obtained from published annual financial statements of the sampled companies for a period of five (5) financial years 2012 to 2016. The empirical analysis incorporates a panel regression model The Z(EM) score model is given as follows:

$$Z(EM) = 6.56 * X_1 + 3.26 * X_2 + 6.72 * X_3 + 1.05 * X_4 + 3.25 \dots \dots \dots (2)**$$

Where:

X<sub>1</sub>= Working Capital/Total Assets,  
 X<sub>2</sub>= Retained Earnings/Total Assets,  
 X<sub>3</sub>= Operating Income/Total Assets, and  
 X<sub>4</sub>= Book Value of Equity/Total Liabilities.

\*\*Firms with a higher Z(EM) score are perceived to be more financially healthy. For ease of interpretation, a Z(EM) score below 0 indicates a bankrupt condition.

The assumption is that the dependent variable, Z-score bankruptcy predictor, is a linear function of the independent variable.

$$Z_1 = f(\text{Earnings management}) \dots\dots\dots (3)$$

Where Z<sub>1</sub> is the Bankruptcy risk (proxied using the modified Altman Z-score model of 2006); while Earnings management (independent variable) will be classified into its four main drivers including: managerial incentives (executive compensation), debt covenant, income smoothing, and tax planning.

The Random Effect Method (REM) and the Fixed Effect Method (FEM) was used in addition to the Pooled OLS.

**Test of Hypotheses**

**Analysis of Regression Result of Hypothesis One**

**Table 1: Result of Hypothesis on the effect of Executive compensation on bankruptcy risk of listed companies in Nigeria**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.517594	2.1893	0.693187	0.4885
EXEC	-0.38784	0.163081	-2.37822	0.0178

Source: Researcher’s calculations from Eviews output (2018)

From Table 1 above, it was observed that EXEC with an “absolute” t-statistics of 2.378 is greater than the critical t-value of 1.96 at 5% level of significance under the two-tailed test. Also, the p-value of 0.0178 (1.78%) is less than 0.05 (5%). Hence, we reject the null hypothesis. This implies that there is a significant effect of executive compensation on bankruptcy risk of listed companies in Nigeria.

**Analysis of Regression Result of Hypothesis Two**

**Table 2: Result of Hypothesis on the effect of debt covenant on bankruptcy risk of listed companies in Nigeria**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.517594	2.1893	0.693187	0.4885
DEBT	-0.042171	0.003652	-11.54810	0.0000

Source: Researcher’s calculations from Eviews output (2018)

In table 2, it was observed that DEBT with an “absolute” t-statistics value of 11.548 is greater than the critical t-value of 1.96 at 5% level of significance under the two-tailed test. In agreement, the probability value is far lower than 0.05. Hence, we reject the null hypothesis as stated above. Therefore, we can conclude that there is a significant effect of debt covenant on bankruptcy risk of listed companies in Nigeria.

**Analysis of Regression Result of Hypothesis Three**

**Table 3: Result of Hypothesis on the effect of Income smoothing on bankruptcy risk of listed companies in Nigeria**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.517594	2.1893	0.693187	0.4885
INCS	0.824742	0.328487	2.510730	0.0124

Source: Researcher’s calculations from Eviews output (2018)

In table 3, it was observed that DEBT with an “absolute” t-statistics value of 11.548 is greater than the critical t-value of 1.96 at 5% level of significance under the two-tailed test. In agreement, the probability value is far lower than 0.05. Hence, we reject the null hypothesis as stated above. Therefore, we can conclude that there is a significant effect of debt covenant on bankruptcy risk of listed companies in Nigeria.

**Discussions**

**Discussion of findings the effect of executive compensation on bankruptcy risk of listed companies in Nigeria.**

On the first hypothesis test, the result shows that the variable of executive compensation has a negative slope coefficient sign and a significant probability level (< 0.05) which led to the rejection of the first null hypothesis. What this implies is that there is a significant negative effect of executive compensation on bankruptcy risk of listed companies in Nigeria. The result also supports the schools of thought (such as Ismail, Yabai, & Hahn, 2014) who argue that executive compensation (by giving the right incentives to directors) is needed to solve the agency conflict by inspiring the executive to remain committed and adopt investment policies that may increase the shareholders’ wealth.

**Discussion of Findings on the Effect of Debt Covenant on Bankruptcy Risk of Listed Companies in Nigeria**

In the second hypothesis, the results showed that the debt covenant variable has negative coefficient sign and probability value less than 0.05 (< 0.05) leading to the rejection of the null hypothesis (Ho2). This implies that debt covenant has a significant negative effect on bankruptcy risk of publicly listed companies in Nigeria. Firms nearing debt covenant violations have greater likelihood of having a going-concern uncertainty, as it represents an indication of firm financial difficulty. However, our result finds support with most other empirical researches implying that debt violations seldom lead to liquidation or bankruptcy (e.g., Dichev & Skinner 2002), but rather typically result in renegotiation or waiver by the lender (Nini, Smith & Sufi 2012).

**Discussion of Findings on the Effect of Income Smoothing on Bankruptcy risk of Listed Companies in Nigeria**

The outcome of the third hypothesis test indicates that the variable of income smoothing has a positive coefficient sign (0.8247) with a probability value of 0.0124 (1.24%) which is less than 5%. This led to the rejection of the third null hypothesis (Ho3) meaning that income smoothing has a significant positive effect on bankruptcy risk of publicly listed companies in Nigeria. However, this current result negates this

earlier assumption and aligns with the school of thoughts (e.g. Omoye & Eriki, 2014) that claims income smoothing is an avenue of misleading some stakeholders about the underlying economic performance of the company which has far-reaching diminishing effects on the firm value. As a result, there is likelihood that the firm may be experiencing financial distress and be making it up from previous fluctuated earnings which may eventually not be sustainable on a long-run. As a stretching degree point, the impending insolvency becomes inevitable.

### **Conclusion**

Based on these outcomes, it can be concluded that the variable of executive compensation has a negative slope coefficient sign, that a significant probability level the debt covenant variable has negative coefficient sign and that probability value less than 0.05 and the variable of income smoothing has a positive coefficient sign

### **Recommendations**

Based on the findings of this study, the following policy recommendations are put forward:

- i. Considering that executive compensation significantly reduces the risk of bankruptcy, the study recommends that management of Nigerian listed companies should consolidate and strengthen their top compensation structures with the use of appropriate incentive plans that guarantees both short and long terms for sustained financial performance, while deteriorating firms should adopt a compensation system based on managerial performance in order to maximize managerial productivity. More so, policy makers also need to provide adequate regulation on the determination of remuneration of the directors of listed companies in Nigeria.
- ii. Since there are indications that aggressive income smoothing triggers the possibility of bankruptcy in a high uncertainty market like Nigeria, management should reduce the use of accrual-based income smoothing in order to reduce agency cost and information asymmetry.

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