

EARNINGS MANAGEMENT AND BANKRUPTCY RISK AMONG NIGERIAN LISTED DEPOSIT MONEY BANKS: MODERATOR EFFECT OF BANK SIZE AND AGE (2006 – 2018)

Okoye, I. Emma

Department of Accountancy,
Nnamdi Azikiwe University, Awka, Nigeria.

Nwobi, Ebele Grace

Department of Accountancy,
Nnamdi Azikiwe University, Awka, Nigeria.
E-Mail: ebelenwobi@gmail.com

Abstract

This study determines the effect of Earnings Management on Bankruptcy Risk among Deposit Money Banks listed on the Nigerian Stock Exchange (NSE). The specific objectives are to: ascertain the effect of Income Smoothing on Bankruptcy Risk of listed Deposit Money Banks on Nigerian Stock Exchange; determine the effect of Executive Compensation on Bankruptcy Risk of listed Deposit Money Banks on Nigerian Stock Exchange and ascertain the effect of Tax Planning on Bankruptcy Risk of listed Deposit Money Banks on Nigerian Stock Exchange. The study used *Ex Post Facto* Research design. Data were collected from fourteen (14) sampled listed Deposit Money Banks in Nigeria. The data collected were analyzed and tested using regression analysis with E-view 9.0. The result shows that there is no significant effect of Income Smoothing on Bankruptcy Risk of listed Deposit Money Banks on NSE. While Executive Compensation and Tax Planning has significant effect on bankruptcy risk of listed deposit money Banks on NSE. The study recommended among others that listed DMBs should adopt executive directors' cash and stock-options compensation plans that are concomitant with long-run organisational performance and should not be based on short-term earnings declarations. More so, policy makers need to provide adequate regulations on the specific metrics for the determination of directors' remunerations and emoluments/bonuses of listed companies in Nigeria.

Keywords: Earning management, Bankruptcy, Income Smoothing, Executive Compensation and Tax Planning.

Introduction

A company is considered bankrupt when it has been legally declared unfit to service its debt obligation or having difficulty in paying pecuniary obligation to creditors (Arzu, Gloria and Mantovani, 2017). A firm that files for bankruptcy is universally considered to be in financial distress, but bankruptcy is the extreme manifestation of financial distress. Bankruptcy risk, on the other hand, refers to the probability or likelihood that a company may go into default or become insolvent. That is the likelihood that a company will be unable to meet its debt obligations. Bankruptcy risk is simply the probability of a firm becoming insolvent due to its inability to service its debt. Nagar and Sen (2016), note that bankruptcy risk is often greater when the firm's assets are poorly managed. Many investors consider a firm's bankruptcy risk prior to making equity or bond investment decisions.

Poor management was among the factors responsible for the series of bank failures, distress or collapse experienced in the banking sector over the years. The history could be traced back to the free banking era that prevailed before the introduction of banking ordinance of 1952. The free era saw the establishment of African Banking Corporation (ABC) in 1892, now First Bank of Nigeria plc. During this era, there were no forms of regulation in the banking system. Thus, many banks were established at random and some of them went bankrupt and failed as quickly as they emerged (Iwedi, 2017). Available statistics show that the first bank distress in Nigeria was recorded in 1930 which involved the first indigenous bank (Industrial and Commercial Bank [ICB]) established in 1929 but went into liquidation few months later. As at 1998, the Central Bank of Nigeria (CBN) had already registered up to eighty-nine (89) operational banks in Nigeria.

However, the political crisis and the appalling human rights records of the military government brought global sanctions on the country, which almost completely destroyed its socio-economic foundations. During the period, all the public utilities deteriorated. The banking sector floundered and became distressed. In 1st January 2006, the eighty nine (89) Nigerian banks were shrunk to twenty five (25) by the CBN due to under-performance. The consolidation exercise then required banks to raise their minimum capital base from N2 billion to N25 Billion, with December 31, 2005 as deadline. Only few banks were able to meet up with the new minimum capital base, resulting in several mergers and acquisitions with only the earlier mentioned 25 out of 89 banks surviving the conditions and operating thereafter. Some of the banks formed as a result were Unity Bank Plc, Fin Bank Plc, Sterling Bank Plc, Fidelity Bank Plc, IBTC Chartered Bank Plc (now Stanbic IBTC Bank Plc), Skye Bank Plc, Bank PHB and the United Bank for Africa. Prior to 2009, most of the then 25 banks, which appeared to be performing optimally, were technically near-comatose. The then CBN Governor, Charles Soludo accused most of the banks of publishing paper profits (Soludo, 2009), which led to the dismissal of several bank chief executives and the subsequent mergers and or acquisitions of the affected banks – including Afribank PLC, Finbank PLC, Intercontinental Bank Plc, Oceanic Bank Plc and Union Bank Plc. The trends of bank collapse in Nigeria have continued till earlier 2019 which saw the takeover of the distressed Diamond bank by Access bank. In line with agency relationship, which separates

the company's ownership from its control, the opportunistic behaviour of managers in pursuing their own interest rather than those of the shareholders' can increase the risk of bankruptcy. Viacheslav (2014) also stressed that aggressive earnings management deficiencies and inappropriate allocation of resources are two key factors capable of weakening the going-concern status of the firm, which increases the threat of bankruptcy.

Earnings management involves exploiting opportunities to make accounting decisions that change the earnings figure reported on the financial statements. This occurs when managers apply permissible accounting techniques in distorting the reported earnings to reflect the desires of management rather than the underlying financial performance of the company. Accounting decisions can in turn affect earnings because they can influence the timing of transactions and the estimates used in financial reporting. Financial performance of company is normally conveyed by the managers on the financial reports and this either positively or negatively affects the investment in the company because the stakeholders depend on the financial statement to make their investment and if it is poorly stated, they will be discouraged. Earnings management therefore, is a strategy used by the management of a company to deliberately manipulate the company's earnings so that the figures match a pre-determined target. This target can be motivated by a preference for more stable earnings, in which case management is said to be carrying out income smoothing. Thus, rather than having years of exceptionally good or bad earnings, companies will try to keep the figures relatively stable by adding and removing cash from reserve accounts. It also occurs when managers make judgments about financial reporting to mislead shareholders about the company's economic performance or the effect on the contracts that depend on accounting reports.

A review of extant literature showed that studies abound on issues relating to earnings management activities by companies, including its determinants, motivations and implications. Although earnings management is not illegal, per se, because accounting principles allow a firm's management to use some discretion in financial reporting. However, several researchers (such as Ahmadpour & Shahsavari, 2016; Balsam, Bartov, & Marquardt, 2002) have found evidence suggesting that opportunistic dimension is the common motivation for earnings management. Going by casual empiricism, therefore, if earnings management practices are borne out of opportunistic attempts by management to obfuscate the true underlying performance of a firm, it is therefore expected that the relationship between earnings management proxies and bankruptcy risk could be bidirectional and/or can go either way. On one hand, engaging in earnings management may imply that the management is hiding some company's internal problems which can increase the likelihood of bankruptcy (Gusarova & Shevtsov, 2017). On the other hand, bankruptcy risk may have significant impact on degree of earnings management based on the assumption that highly distressed firms (potentially bankrupt firms) can largely be associated with aggressive earnings management more than healthy firms (Campa & Camacho-Minano, 2014). In both divides, majority of the existing studies have focused on the direction of the latter, while the

possibility that the motivations behind earnings management could explain variations in bankruptcy risk appear not to have received commensurate research attention in literature.

Specifically, majority of the studies that have linked earnings management and bankruptcy risk have focused on examining the earnings management behaviours of potentially bankrupt firms (for example, Agrawal, Chatterjee and Agrawal, 2015; Cenciarelli, 2018; Hassanpour and Ardakani, 2017; Jacoby, Li and Liu, 2017; Li, Abeysekera, and Ma, 2011; Zhongling and Xiao, 2017), as well as the effect of bankruptcy threats on the likelihood of earnings management (example, Egbunike & Igbinoia, 2018; Howe & Houston, 2016). Thus, several of prior studies have adopted earnings management as dependent variable, and bankruptcy risk as the explanatory variable. The closest to this current study amongst the previous studies (that is, those that adopted bankruptcy as dependent variable) include Gusarova and Shevtsov (2017); Shabani and Sofian (2018); Veganzones and Severin (2016) which studied the association between earnings management and the likelihood of bankruptcy using Beneish M-score, earnings smoothing and real/accrual-based earnings management (EM) (respectively) as proxies for earnings management. Despite the fact that the above mentioned three-related studies were all conducted in foreign countries (United Kingdom, Malaysia and France, respectively) with distinctive peculiarities, their differing earnings management proxies coupled with the conflicting evidences in their outcomes ignited the need to replicate such studies from another dimension in the Nigerian context.

For example, while Gusarova and Shevtsov (2017) found that bankruptcy risk does not depend on earnings manipulation, Shabani and Sofian (2018) found significant relationship. To the best of the researcher's knowledge, no Nigerian study has examined whether or not there is a dependence of bankruptcy risk (as dependent variable) on the earnings management incentives - as independent variables. This study intends to contribute to existing knowledge from this dimension.

This study determines the effect of Earnings Management on Bankruptcy Risk among Deposit Money Banks listed on the Nigerian Stock Exchange (NSE). The specific objectives are:

1. To ascertain the effect of Income Smoothing on Bankruptcy Risk of listed Deposit Money Banks on Nigerian Stock Exchange.
2. To determine the effect of Executive Compensation on Bankruptcy Risk of listed Deposit Money Banks on Nigerian Stock Exchange.
3. To ascertain the effect of Tax Planning on Bankruptcy Risk of listed Deposit Money Banks on Nigerian Stock Exchange.

REVIEW OF RELATED LITERATURE

Conceptual Review

Earnings Management

Earnings are the profits of a company. Investors and analysts look to earnings to determine the attractiveness of a particular stock. Companies with poor earnings prospects will typically have lower share prices than those with good prospects. A company's ability to generate profit in the future plays a very important role in determining a stock's price. Paying attention to earnings is very informative because they are arguably the relevant driver of the future firm's prospects and value (Richardson, Sloan, Soliman & Tuna, 2005) as cited in (Veganzones & Severin, 2017). Financial performance of company is normally conveyed by the managers on the financial reports and this either positively or negatively affects the investment in the company. This is because a lot of investors depend on the financial statement to make their investment and if it is poorly stated, they will be discouraged.

Earnings management occurs when managers make judgments about financial reporting to mislead shareholders about the company's economic performance or the effect on the contracts that depend on accounting reports. Earnings management is a kind of artificial manipulation of earnings by management in order to reach the expected level of profits for some specific decisions (DeGeorge, Patel and Zeckhauser, 1999) as cited in (Karami, Shahabinia & Gholami, 2017). Due to the opportunities and loopholes offered in accounting policies, managers with their background in business choose the best reporting methods, estimate and disclosures that match the firm's business economics. Since the application of accounting standards requires professional judgments, sometimes managers use this discretion to create an image of the company that lack economic reality.

Rahman, Moniruzzaman, and Sharif (2013) defined earnings management as the accounting policies that are selected by management to make the earnings arrive to the expected level according to the stakeholder. García, García and Mora (2005) affirm that earnings management is an intentionally carried out management practice, opportunistic and/or educational, with the purpose to report desired results, distinct from the real ones. Among the several definitions of this concept, Scott (2009) sees earnings management as "the choice of accounting policies or actions that can affect earnings in order to achieve a specific objective". Prior literature has shown many incentives that drive managers to manipulate the results of the company. The basic concept of earnings management underlies the manipulation of financial reporting information by management of a firm for their self-interests in the expense of others. Roychowdhury (2006) found evidence that managers practiced manipulation for real activities to avoid reporting annual losses and suggesting price discounts to temporarily increase sales. Rani, Hussain and Chand (2013) stated that the main reason for applying earnings management is the incentive for compensation in addition to borrowing cost and the incentive to meet/beat targets/expectations and increase (decrease) regulatory benefits.

Bankruptcy Risk

Generally, bankruptcy, according to Senbet and Wang (2012), is essentially a transfer of ownership from equity holders to debt holders when the value of assets drops below the value of debt. However, bankruptcy risk refers to the likelihood that a company will be unable to meet its debt obligations. It is the probability of a firm becoming insolvent due to its inability to service its debt. Many investors consider a firm's bankruptcy risk prior to making equity or bond investment decisions. As per Hochang (1985), 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, Kihooto, Omagwa, Wachira and Ronald (2016) described financially 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) asserts 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 (that is extreme financial distress), is known as default (that is 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 (Troy, 2003). 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.

Bankruptcy Prediction Model

The history of bankruptcy prediction includes application of numerous statistical tools which gradually became available, and involves deepening appreciation of various pitfalls in early analyzes (Gerritsen, 2015). From mid-1960's research on bankruptcy prediction model focused on univariate (that is, single factor/ratio) analysis and the most widely recognized univariate study is that of Beaver (1966), Bellovary, Giracominio and Akers (2007) as cited in Gerritsen (2015). Beaver (1966) is considered as the foremost scholar who published his study about financial ratios as predictors of failure in modern bankruptcy prediction literature. He applied a univariate discriminate analysis model on a number of financial ratios of a paired sample of failing and non-failing companies in order to predict company failure.

Beaver (1966) applied a dichotomous classification test in order to identify those ratios that were the best in classifying the companies as failing or non-failing. Beaver's study classified a company as failed when any one of the following events occurred: bankruptcy, bond default, an overdrawn bank account or nonpayment of a preferred stock dividend. He sampled a matched pair of 79 failed and 79 non-failed companies using a dichotomous classification test. He used mean comparisons and likelihood analysis methods to develop a univariate model and found that there are three valid financial ratios to forecast financial failure and they are: Cash Flow/Total Debt, Net Income/Total Assets (returns on assets) and Total Debt/Total Assets (debt ratio). Beaver suggested that the cash flow/total debt ratio was the best with an accuracy of 87 percent as the model assumed a linear relationship between all measures and the failure status.

According to Altman (1968), there is at least one primary advantage of MDA in comparison with Beaver's (1966) and other traditional univariate ratio analysis. This is the fact that the MDA technique has the potential to analyze an entire set of explanatory variables simultaneously, as well as the interaction of these variables, whereas the univariate analysis can only consider the measurements used for group assignments one at a time. He used a sample of 33 solvent companies and 33 distressed companies in predicting bankruptcy. Altman (1968) used an estimation sample and a hold-out sample. The estimation sample is used to estimate the function and the hold-out sample is used to validate the estimated function. The time frame was set from 1946 to 1965. Firms were defined as bankrupt when they filed bankruptcy in the period within the time frame. Firms were defined as non-bankrupt if they were still in existence in 1966. Altman (1968) evaluated twenty-two variables. These variables/ratios are chosen on the basis of their popularity in the literature and potential relevancy to the study. The result was a model with five different financial explanatory variables and a qualitative dependent variable (that is, bankrupt within 1-2 years or non-bankrupt). These five variables are not the most significant variables when they are measured independently. This is because the contribution of the entire variable profile is evaluated by the MDA function (Altman, 1968). The Z-score has linear properties as it involve the objective weighing and summing up of five measures to arrive at a single value

which becomes the criteria for classification of firms into various apriori groups (healthy and unhealthy).

The Z score comprises of X1, X2, X3, X4 and X5 representing;

X1 = Working Capital/Total Assets: a measure of the net current assets (that is, current assets less current liabilities) of a company in relation to its total Assets.

X2 = Retained Earning/Total Assets: a measure of the cumulative profitability over time of a company in relation to total assets. For an infant company, an adverse RE/TA ratio will emerge since it has no cumulative earnings overtime.

X3 = Earnings before Interest and Tax/Total Assets: a measure of the true productivity of the company's assets.

X4 = Market Value of Equity/Total Liabilities Ratio reveals the extent to which a firm's equity can reduce in value before the liabilities exceed the assets and the company becomes insolvent. Equity is a combination of market value of preference and common shares.

X5 = Sales/Total Asset: or Gross Earning to Total Assets: a measure of the firm's assets utilization. It measures the ability of management in handling competitive conditions.

The Original Z score which is applicable to public manufacturing firms is as follows.

$$Z = 1.2 X1 + 1.4 X2 + 3.3 X3 + 0.6 X4 + 0.999 X5$$

Where;

X1 = Working Capital/Total Assets

X2 = Retained Earnings/Total Assets

X3 = Earnings Before Interest and Taxes/Total Assets

X4 = Market Value of Equity/Total Liabilities

X5 = Sales/Total Assets

Z = Overall Index

Zones of discrimination

i. Z is Below 1.80 = Poor Performance and high threat of Bankruptcy

ii. Z is Between 1.80 – 2.99 = Grey zone

iii. Z is Above 2.99 = Very Viable and Sound Performance with no threat of Bankruptcy

Altman then further revised the Z-score model where the market value of equity was changed to the book value of equity and the model was applicable to private and non-manufacturing firms. He also came up with different coefficients for the ratio as shown below.

$$Z' = 0.717 X1 + 0.847 X2 + 3.107 X3 + 0.420 X4 + 0.998 X5$$

Where;

X1 = Working Capital/Total Assets

X2 = Retained Earnings/Total Assets

X3 = Earnings Before Interest and Taxes/Total Assets

X4 = Book value of equity/Book value of total liabilities

X5 = Sales/Total Assets

Zone of Discrimination

- i. If Z is less than 1.23 = Zone of distress
- ii. If Z is between 1.23 and 2.9 = Grey zone
- iii. If Z is greater than 2.9 = Zone of safety

In 1995, this was further revised to include emerging markets where the model could be used by both manufacturing and non-manufacturing companies as well as public and private firms. The model had different coefficients and cut off points as follows.

$$Z'' = 6.56X1 + 3.26X2 + 6.72X3 + 1.05X4$$

Where;

X5 = Excluded

X1 = (current assets – current liabilities)/Total assets

X2 = Retained earnings/Total assets

X3 = Earnings before interest and tax /Total assets

X4 = Book value of Equity/Total liabilities

Zones of discrimination

- i. If Z is less than 1.1 = Distress zone
- ii. If Z is Between 1.1 and 2.60 = Grey zone
- iii. If Z is above 2.60 = Safe zone

Income Smoothing and Bankruptcy Risk

Income smoothing is commonly understood to mean management's use of discretionary accounting and management principles to reduce earnings variability (Li & Richie, 2016). The phenomenon of income smoothing is a common topic in Accounting and Financial Affairs. As the firms' real operational activities become more and more distant from the anticipated operational activities, the motivation to engage income smoothing also enhances. In fact, the more deviated the real operational activities from the expectation of users, the more motivation will be created for reported income smoothing (Purheydari & Aflatuni, 2007).

When firms become increasingly pressed by an unfavorable economic status, the managers may ask the accounting sector to improve the last line of financial statements (that is income) and thereby to change their informational content. Management of income is a method used by manager to manipulate data. 'Income smoothing' is a good example of data management used to provide investors with more confidence about income stability. Such deeds may have a noticeable effect on the data existing in financial statements. When practicing earning management, firm's manager obviously knows that the aim of the deed is to protect the firm's benefits against income owners (beneficiaries) (Nuravesh et al, 2006). Managers have various tools at hand to balance the trend of income within their firms. One example is to smooth firms' income through managing business activities (economic events). Managers can do so by, for example, accelerating or postponing the transmission of goods, or the issuing of bills or through changing the methods of asset depreciation. This proves that managers resort to various tools and techniques to smooth income. Income smoothing is a deliberate attempt of firms to decrease periodical changes and fluctuations of reported or expected income through

the use of selective techniques of accounting within the framework of generally accepted accounting principles (GAAP).

According to Li and Richie (2016), there are generally two schools of thought as to what motivates managers to smooth. First, smoothing presents an arguably efficient vehicle for managers to reveal private information because it is easier for investors to predict future earnings from smoother earnings. Second, smoothing represents “garbling”; that is, smoothing is an exercise undertaken by managers in an attempt to fool analysts and others and to enhance managerial careers or compensation. Verleun et al. (2011) assert that companies strive to minimize profit in profitable years in order to ‘reserve’ profit for rainy days of losses, this reserve will be used to boost the profitability to arrive at a stable level of profit (growth). Verleun et al. (2011) also stated that one of the reasons management indulge in income smoothing is to create a stable risk profile for the firm in order to reduce fluctuations in share price of the company, which positively influences the reputation of the firm. A smooth earnings sequence may increase the willingness of lenders and suppliers to grant short-term credit. This is particularly so if the firm has implicit contracts with these stakeholders. Charitou et al. (2007) showed that managers of bankrupt firms find more motivation for the reduction of income and to have a more conservative behavior when there are more outer-organizational supervisory systems and or when the auditors, in their statements, issue that the firm is qualified to continue its activities. Rosner (2003) in a study found that the behavior of those bankrupt firms that have not revealed financial crises on the basis of real information, hence showing a noticeable amount of reduction in their cash flows is the same as those firms that have shown their income more than the actual amount both before and after their bankruptcy. Using a sample of 859 members from American bankrupt firms, Anderson et al (2007) in a study evaluated earnings behaviors of managers during the period of bankruptcy via unusual promissory items in the years before bankruptcy. The results showed that the managers of the firms that are highly probable to experience bankruptcy decide to transfer their decreasing earnings.

Majority of previous related studies (see Chelchele, Abbasi and Bosra, 2012) use the probability of firms' bankruptcy as the independent variable while income smoothing is also used as the dependent variable. However, this study argues that their relation might be bidirectional as has been tested by Fadee and Chashmi (2016) who considered income smoothing as independent variable against bankruptcy and found a negative significant relationship. In that regards, Trueman and Titman (1988) argue that a smooth earnings stream may potentially decrease assessments of default (bankruptcy) risk, and thus decrease the debt cost of capital.

However, if income smoothing is garbling (that is an attempt to fool analysts and others and to enhance managerial careers or compensation), and creditors can recognize smoothing as garbling, then smoothing firms could exhibit a higher cost of debt capital as creditors punish managers for gaming earnings, thereby increasing bankruptcy risk. To that effect, researchers like Li and Richie (2016) examined the income smoothing and cost of debt and find that

firms with higher income smoothing rankings exhibit lower cost of debt, suggesting that the information signaling effect of income smoothing dominates the garbling effect. However, their result also show that the effect of income smoothing on debt cost reduction is stronger in firms with more opaque information and greater distress (bankrupt) risk.

Executive Compensation and Bankruptcy Risk

Prior studies (Bergstresser & Philippon, 2006; Houmes & Skantz, 2010; Salah, 2010) have explored the incentives for earnings management; one of the most common incentives for managing earnings is the manager's remuneration package and managerial bonuses. In most businesses, managers are entitled to cash bonuses or share options upon achieving predetermined reported earnings. It is quite common for management employment contracts to include accounting based constraints that determine compensation opportunities, such as annual salary increases, bonus, performance evaluation, and reaching targets set in compensation contracts (Singh, 2008). Healy (1985) provides the earliest evidence of contractual motivation to manage earnings. Since managers have inside information, they have opportunities to manage net income to maximize their bonuses. Therefore, it is more likely that managers will increase current-period earnings. According to Healy, most bonus schemes from his samples have a bogey but not have a cap. Further, he finds that for bonus schemes with a bogey and a cap, 46% are income-increasing.

On managerial bonus plan, as Healy documents, managers have incentives to maximize their bonuses, consistent with the bonus plan hypothesis of positive accounting theory. Consequently, they may adopt accounting policies to increase reported net income, or to reduce reported net income if it is below the bogey or above the cap of the bonus plan. Healy (1985) also showed how upper and lower bounds on executive bonus packages encourage managers to make discretionary accounting accruals in a strategic manner. Hence, compensation contracts specifying minimum levels of profits to grant bonuses provide incentives for income increasing or income decreasing earnings management depending on the actual level of profits attained in a particular period. Healy (1985) used accruals and changes in accounting procedures and found that managers choose income-increasing accruals as long as profits fall within the minimum and maximum boundaries.

However, managers also tend to move towards income decreasing accruals if earnings are above the maximum level. Gaver *et al.* (1995) extended Healy's study by examining the relationship between discretionary accruals and bonus plan bounds using a sample of 102 firms for the period 1980-1990. They found that when earnings before discretionary accruals are below the lower bound, managers select income increasing discretionary accruals (and vice versa). Gaver *et al.* (1995) thus believe that their results are more consistent with income smoothing hypothesis than with Healy's bonus hypothesis. Compensation induces managers to engage in earnings management; however, this is by no means consistent across countries - according to Brown & Higgins (2001). Other previous studies such as Cornett, McNutt and Tehranian (2009); Jiang, Petroni and Wang (2010) show that top managers' compensation can be linked to the performance of the firm, which is correlated to greater earnings

management. More importantly, managers may manage current earnings upward at the expense of future earnings in order to ensure job security (DeFond & Park, 1997).

However, some prior studies provide evidence that changes in top management provide incentives for income-decreasing earnings management. New managers are more likely to engage in income-decreasing earnings management in order to take a “big bath”, therefore increasing their chances of earning a bonus in the subsequent period. In all, managers of potentially bankrupt firm may continue on income-increasing earnings management for personal incentive gains which may affect the going concern status of the firm, and by implication bankruptcy risk. Authors like Bryan, Tiras and Wheatley (2002) theorize that the use of income-increasing accounting choices delays the filing of bankruptcy until the firm’s financial problem gets deeper, thus resulting in a lower likelihood that the firm will successfully emerge from bankruptcy. Thus, there is likelihood that executive incentives may increase the probability of bankruptcy.

Tax Planning and Bankruptcy Risk

Tax planning or management can be described as a process of organizing a corporation so that its tax liabilities stay in the minimum position according to tax code with opportunity cost and political cost (Hanlon & Slemrod, 2009). Most of the time, management desires to pay lower tax obligation as it will significantly reduce corporate net income which is usually a primary indicator of corporate performance. This is because; government often wants to levy tax as high as possible; as it is one of primary income source for the country. Though it’s a conflicting situation in most corporations, earnings management is usually applied to minimize corporate tax obligation (Mulyadi & Anwar, 2015). According to Wang and Chen (2012), companies’ operations and decision making are guided by the total value maximization concepts; hence they try to reduce tax expense in order to avoid the outflow of accumulated economic benefits. Since tax will reduce the companies’ net income, sometimes corporation use earnings management practice to control its income which will impact tax payment in the same time.

During an accounting period, discretionary accruals may be adjusted by accounting management, which results in differences between cash flows and profit. The tax expenditure has its rigidities and therefore when profit is defined, tax expense calculated by profit will lead to cash outflow. This shows that in enterprises under heavy tax burden, tax avoidance will be the motivation of earnings management. Thus, tax planning (management) constitutes one of the motivations of earnings management. A number of firms receive some form of assistance from the government such as grants, subsidies and tax exemptions depending on local productions and performance. Thus, firms would be inclined to report conservative earnings so that they can qualify for subsidies, tax exemptions and other grants from government. Healy & Wahlen (1999) report that firms may engage in earnings management to reduce income taxes, when there is a connection between financial statements and tax measurement. Managers may try to reduce results when they are high, to pay less income tax. Jones (1991) reported that firms seeking for government’s subsidy have enormous incentives

to manage earnings in order to appear less profitable. The firm may be able to postpone payment of taxes if it can minimize its reported income, for example by managing accruals, or using LIFO (if allowed by the tax authority). By reducing its reported net income, the firm may forestall government intervention which might ensue if the public felt the firm was earning excessive profits. Managers usually accelerate revenue recognition or defer expenses to influence income tax (Hu, Cao & Zheng, 2015). They can change depreciation methods or valorization method of inventories, reduce provision of bad debts and impairments, change assets' life time or defer taxes in assets and liabilities (Healy & Wahlen, 1999). If the firm generates losses in the periods focused on, the incentives for downwards earnings management based on saving taxes or achieving dividend reductions will likely be excluded. Also managers can alter the accounting numbers by adding various cost elements to different cost centers in a way that cost allocation results may lead to distortive decisions. Otherwise, they can shift costs or revenues from one subsidiary to another in view of a tax optimizing strategy (Krull 2004).

Zhu and Su (2002) find that small and medium-sized firms in China have incentives to manage earnings for management compensation and tax expense savings. In contrast, the regression results of Joosten (2012) demonstrate that firms which face higher tax rates use more REM to manage earnings downwards. This implies that higher tax rates do not constrain the use of real earnings management, but rather increase its use. Dhaliwal, Gleason and Mills (2003) study whether corporations will manipulate income tax expense when manipulating earnings to achieve the goal for certain business results. This study shows that corporations achieve the goal for certain business results firstly by means of manipulating non-taxable items. However, when the earning management of non-taxable items cannot bring enough profit to achieve that goal, corporations will through certain means reduce income tax owed to realize the profit target. This research provides theoretical support for realizing earnings management by tax means. Guenther (1994) studies the earnings management for tax saving purpose in nearly all industries except financial service and finds that firms with large size and low debt level are inclined to use more current accruals to decrease the taxable income and financial accounting income.

Coppens and Peek's (2005) study provides the evidence that when managers manipulate earnings, they would consider the effect on taxation, which is consistent with previous researches such as the timing of recognition of profit or loss from sales of long-term assets (Bartov, 1993). Managers do this by accelerating expense or defer revenue in order to shift the period of taxable income. In addition, earnings managements are used more frequently in the countries where accounting practice is aligned with tax practice than in the countries where the alignment is not significant. Most previous studies such as Chen, Chen, Chen and Shevlin (2010); Heitzman and Ogneva (2015), all find that tax planning-motivated earnings management is positively associated with higher market performance.

On the other hand, Kawor and Kpportorgbi (2014) found that tax planning and management enhanced tax savings but does not reflect in the firm's value which appeared consistent with the Agency theory notion that not all management strategies tends towards the achievement

of wealth maximization objectives. A recent study by a Nigerian researcher (Ogundajo and Onakoya, 2016) found that tax planning has negative insignificant relationship with return on asset, meaning that engaging in tax planning motivated earnings management may likely not lead to reduction in bankruptcy risk since it poses an insignificant relationship with performance.

Empirical Review

Numerous studies have empirically examined the effect of earnings management on several organizational outcomes. In this study, the focus is on its relation with bankruptcy and/or financial distress as well as other related names usually used in describing financially unstable firms (such as default, liquidation, exit, insolvency and so on). Muranda (2006) conducted a research with the purpose of investigating the relationship between corporate governance failures and financial distress in Zimbabwe's banking sector. The finding of the research revealed that in all cases of pronounced financial distress, either the chairman of the board or the chief executive wields disproportionate power in the board. The disproportionate power emanates from major shareholding. Gunay and Ozkan (2007) conducted a research with a purpose of proposing a new technique to prevent future crises, with reference to the last banking crises in Turkey. They used Artificial Neural Network (ANN) as an inductive algorithm in discovering predictive knowledge structures in financial data and used to explain previous bank failures in the Turkish banking sector as a special case of emerging financial markets. Their findings indicate that ANN is proved to differentiate patterns or trends in financial data. Olaniyi (2007) evaluated the susceptibility of Nigerian banks to failure with a view to discriminate between sound and unhealthy banks as a guide to investment decisions using First Bank and Trade Bank as case studies. Multivariate analysis of Z-score was carried out on the secondary data obtained from the two Banks annual reports and accounts between 1998-2003 and it was concluded that the model can measure accurately potential failure of unhealthy banks but inaccurately failure status of sound banks. Chung, Tan and Holdsworth (2008) utilized multivariate discriminate analysis and artificial neural network to create an insolvency predictive model that could effectively predict any future failure of a finance company value in New Zealand. The results indicate that the financial ratio of failed companies differ significantly from non-failed companies. Failed companies were also less profitable and less liquid and had higher leverage ratios and lower quality assets. Garcia, Garcia and Neophytou (2009) using a large sample of British Firms comparison with non-bankrupt companies found that bankrupt companies in the 4 years of pre-bankruptcy manage their profits in an increasing form. Their study showed that the profit management is done using both ways of earnings management and accounting earnings management as a result, the actual activities and management accounting income decreased reliability. Kangarzadehlouei (2009) focused on the Tehran stock exchange, looks at the link between income smoothing and financial distress. Adopting the Altman model as a tool to predicting the likelihood of financial distress, the result indicates that managers get involve in income smoothing to beautify their company's financial performance and position. Li, Abeysekera and Ma (2011) studied earnings management and the effect of earnings quality in relation to

stress level and bankruptcy level of Chinese listed firms and investigates the link between earnings management and earnings quality for the Chinese firms listed in the Shanghai and Shenzhen stock exchanges from 2003 to 2007. They found that the stressed/bankrupt firms prefer opportunistic earnings management. Sinkey, Treza and Dince (2012) applied a ZETA model which is revised model of Z score analysis for predicting the bank failure. They used the test sample consisting of commercial banks that failed in United States during the early 1980s. They found that although it is not as accurate as the original zeta model, this version of the zeta model is successful in identifying bank failure in about 3 out of 4 cases. Dastgir, Hoseinzadeh, Khodadi and Vaez (2012) investigated how earnings quality in companies was experiencing financial hardship. This research analyzes the companies listed on the Tehran stock exchange and was conducted in the period of 2001-2009. The results indicate that companies needed to manage money into their profits in the 3 years prior to bankruptcy in an increasing manner. Ani and Ugwunta, (2012) Studied ratio analysis, in particular the multi-discriminate analysis (MDA) model in predicting and detecting failing business in the manufacturing and other sectors of the Nigerian economy. Data were gathered for a five year period for eleven firms sampled from manufacturing, oil marketing and the conglomerates sector of the Nigeria economy. The result revealed that MDA is a veritable tool for assessing the financial health of firms in Nigeria. Accordingly, MDA has high predictive power to deduce from a set of ratios the likelihood of failure or otherwise. Adeyeye, Fajembola, Olopete and Adedeji (2012) examined the Predicting Bank Failure in Nigeria using Principal Component Analysis and D-Score Model. The analysis of the regression model indicates that the measures of profitability, liquidity, credit risk and capital adequacy are the key predictive financial ratios. It was found that the empirical analysis reveals that the warning signal so developed produces a robust result with high prediction accuracy. Ahmed Mohammed and Adisa (2014) in their study of “Loan Loss Provision and Earnings Management in Nigerian Deposit Money Banks” explores the relationship between loan loss provision and earnings management in Nigerian DMBs. Secondary data were obtained from the 8 banks’ annual reports for the period of 2006 to 2011 and robust regression was used as a tool for data analysis. The result indicated that there was a positive relationship between the provision for loan losses and earnings management in Nigerian DMBs. Ahmadpour and Shahsavari (2014) examined the link between earnings management and the quality of earnings using bankrupt and non-bankrupt firms listed in the Tehran Stock Exchange for the period 2007 to 2012. The analyses involve the use of an estimating unbalanced panel data technique for the 198 non-bankrupt firms and the 55 bankrupt firms using Altman's model. It was found that the bankrupt firms were inclined to opportunistic earnings management than the non-bankrupt who choose efficient earnings management. However, they find earnings management having a better predictive power for future profitability than earnings quality. Ukessays (2014) studied the importance of financial ratios in evaluation of firm’s financial position and performance. Ten financial ratios covering four important financial attributes namely: liquidity, activity and turnover, profitability and leverage ratios were examined under a two-year prior to bankruptcy. Multiple Discriminate Analysis (MDA) was used as statistical technique with the help of SPSS 17.0 version on a sample of twenty six (26) Bankrupt and 26

non-bankrupt firm two year prior to bankrupt with an asset range of N5million to N750million from 1996-2010. All companies were registered with Karachi Stock Exchange. The result showed that profit Margin, debt to equity ratio and return on asset has a significant contribution in prediction of corporate bankruptcy. Gerritsen (2015) examined the “Accuracy Rate of Bankruptcy Prediction Models for the Dutch Professional Football Industry”, tested and compared the accuracy rate of three commonly used accounting-based bankruptcy prediction models of Ohlson (1980), Zmijewski (1984), and Altman (2000) on Dutch professional football clubs between the seasons of 2009/2010 - 2013/2014. The sample size on the Dutch professional football industry throughout the different seasons fluctuates between 30 and 36 depending on the available data in a particular season of the annual report and season reports. Egbunike and Ibeanuka (2015) studied “corporate bankruptcy predictions: Evidence from selected banks in Nigeria” and examined corporate bankruptcy threats among selected banks in Nigeria. Data were collected from the annual reports of banks 2007-2011 available in 2010-2011 facts book of Nigerian Stock Exchange. In addition to descriptive statistics, t-test difference between mean, analysis of variance (ANOVA) test and multi-discriminant model were used in analyzing the collected data. The study identified five financial ratios – Working Capital/Total Assets, Retained Earnings/Total Asset, EBIT/Total Asset, Equity/Total Asset, and Gross Earning/Total Asset that could predict financial distress. Mohammadi, Mohammadi, and Amini, (2016) carried out investigation on the relationship between financial distress and earnings management in corporations of accepted in Tehran Stock Exchange during time between years of 2008-2015. The study in terms of purpose was applied research and regarding the method of inference, the research was descriptive – correlation research. Research results showed that, in research hypothesis with the increase of the free cash flow as a standard of financial distress, earnings management will be increased. Kihooto, Omagwa, Wachira and Ronald (2016) in their study of “financial distress in commercial and services companies listed at Nairobi Securities Exchange, Kenya” Using Altman’s Z score model, the study findings indicate that the companies’ Z scores (on average) lay between, 1.88 to 3.5. This is an indication that the companies were relatively not in danger of bankruptcy. Stewart (2016) carried out a research on “A cash flow based model of corporate bankruptcy in Australia. The study showed that the Altman Z score model failed to pick up the financial distress of Dick Smith, but the cash flow model provided a much better indication that the company was in serious financial trouble at least 6 months before the collapse of the company. Khan (2016) carried out research on Bankruptcy Prediction for Financial Sector of Pakistan: Evaluation of Logit and Discriminant Analysis Approaches and compares two models for measuring the financial position of financial firms listed in Karachi Stock Exchange. The sample period for the study was from 2009 to 2015. From the KSE listed financial firms, a total of 40 firms were selected and accounting ratios were extracted from balance sheet analysis reports published by State bank of Pakistan. The empirical results concluded that the logit model has a high rate of classification as compared to multiple discriminant analysis. The model has obtained overall 85.5% accuracy and identified three significant accounting ratios that are: retained earnings to total asset, earnings before income and taxes to the total asset, and current liabilities to total asset. Hassanpour and Ardakani

(2017) investigated pre-bankruptcy financial distress as a determinant of the choice of earnings management tools using a sample of 133 listed companies in Tehran stock exchange for the period 2010 - 2014. Their results reveal a significant positive relationship, existing between pre-bankruptcy financial distress and earnings management tool. Zhongling and Xiao (2017) provided evidence that managers downwardly manage earnings when ex-ante distress risk non-trivially increases. Such an association is ameliorated by sources of market monitoring such as institutional holders, short sellers, and analysts following the firm. Overall, they provided stronger evidence on the subject as well as clarified previous explanations through a larger sample and more selection bias robust design. Arzu, Gloria and Mantovani (2017) studied Forecasting Bankruptcy: a European Analysis and analyzed the ability of Integrated Rating model to anticipate potential corporate crisis. They studied bankrupt companies of four European Countries (Czech Republic, Spain, Italy, France, Slovakia, and the United Kingdom). They found that Integrated Rating model can forecast bankruptcy (assessing a negative merit of credit judgment) with an accuracy that exceeds 75%. Gusarova and Shevtsov (2017) studied the Association between Accounting Manipulations and Bankruptcy, likelihood analysis of 18 public companies from the United Kingdom. The results showed that there were no relations between the two phenomena. There was a negative correlation found between the likelihood of bankruptcy and the standard deviation. Since there was almost no effect of the beta on the Altman Z-score, the researchers concluded that the risk that causes the probability of insolvency was unsystematic and coming from the management of the company. Hamid and Rohani (2018) studied "Predicting financial distress: Applicability of O-score model for Pakistani firms". The study applied the most admired financial distress prediction O-score model and compared its predictive accuracy with estimated logit model. The sample for the estimation model consisted of 290 firms with 45 distressed and 245 healthy firms for the period 2006 - 2016 and covered all sectors of Pakistan Stock Exchange. Mattia and Giuseppe (2018) studied "Analysis of the Risk of Bankruptcy of Tomato Processing Companies Operating in the Inter-Regional Inter-professional Organization "OI Pomodoro da Industria Nord Italia", aimed at analyzing the financial sustainability of tomato processing firms by applying financial ratios. The research focused on the annual data of a sample of 17 tomato processing firms operating in the Inter-regional Inter-professional Organization, "OI Pomodoro da Industria Nord Italia". The firms were divided into still-active (not-distressed) and failed (distressed) firms, with the aim of analyzing the differences between the financial data and management practices of the two groups. The data suggest that larger firms, with an adequate financial structure, have been able to withstand the tomato market crisis in recent years, whereas distressed firms were on average smaller and suffer from higher recourse to debt capital and lower profit margins than not-distressed firms. The research highlighted that financial ratios could be usefully applied for predicting the continuity of activity and therefore the sustainability of the management cycle, including its relationship to the whole socio-economic system over time.

METHODOLOGY

Research Design

This study adopted the *ex-post facto* research design. An *Ex-post Facto* research determines the cause-effect relationship among variables.

Population of the Study

The study consist of the entire fourteen (14) deposit money banks listed on the Nigerian Stock Exchange (NSE) between years 2006 – 2018 (13 years). This is to accommodate the post N25 billion bank recapitalization era so as to evaluate the effect on banking sector. They include: Access Bank, Ecobank, Fidelity bank, First bank, FCMB, Guaranty Trust Bank, Polaris Bank (Skye Bank), Stanbic IBTC, Sterling Bank, Union Bank, UBA, Unity Bank, Wema Bank and Zenith Bank. Year 2006 was purposively chosen as the start-year of the study since it marked the year the CBN commenced the implementation of the reforms which created a new minimum paid-up capital for all banks, from ₦2billion to ₦25billion which eventually reduced the number of banks operating in Nigeria. Thus, the period of thirteen (13) financial years has been considered in order to capture a long-enough bankruptcy trends among the listed banks in the N25billion post-recapitalization era.

Sample Size

Based on the small number of listed Deposit Money Banks in the Nigerian Stock Exchange, the study purposively sampled and utilized the entire population.

Model Specification

The empirical analyses involve three (3) panel regression models in order to incorporate the two moderator variables in separate panel regressions, and also address the relationship between the selected earnings management incentives on bankruptcy risk in separate panel regression estimation. The dependent variable (bankruptcy risk) was proxied using the modified Altman Z-score model (2006) for predicting bankruptcy. The original Altman (1968) measure employed 5-weighted financial ratios and it only gauges the financial health of publically-listed firms in the US. Altman (1983, 1993) made several adjustments to the proxy including only four (4) factors so that it can be applied to firms in other contexts, while Altman (2006) further modified the coefficients of these four factors to adopt the model for emerging and developing markets called “The Emerging-Markets Score Model” (EMS Model) which this study adopted.

Thus, the Altman’s (2006) EMS model yields a bankruptcy measure (EMS score) that is a more appropriate measure for both manufacturing and financial publicly-held organizations in emerging economies and has been tested in over 20 countries with high accuracy and reliability in predicting bankruptcy (Li *et al*, 2011). The Z(EMS) score model is given as follows:

$$Z(EM) = 6.56 * X_1 + 3.26 * X_2 + 6.72 * X_3 + 1.05 * X_4 + 3.25 \dots \dots \dots (1)**$$

Where:

X_1 = Working Capital/Total Assets,

X_2 = Retained Earnings/Total Assets,
 X_3 = Operating Income/Total Assets, and
 X_4 = 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 1.1 indicates a bankrupt condition. The assumption is that the dependent variable, Z-score bankruptcy predictor, is a linear function of the independent variable.

$$Z_1 = f(\text{Earnings management}) \dots \dots \dots (2)$$

Where;

Z_1 is the Bankruptcy risk (proxied using the modified Altman Z-score model of 2006); Earnings management (independent variable) will be classified into the four identified drivers including: income smoothing, managerial incentives (executive compensation), tax planning and debt covenant.

In line with previous studies (see Li *et al*, 2011), income smoothing will be measured as the ratio of standard deviation of net income divide by total assets to standard deviation of cash flow divide by total assets as shown below:

$$INCS = sd \left(\frac{NP}{TAB} \right) / sd \left(\frac{CF}{TAB} \right) \dots \dots \dots (3)$$

Where;

INCS = Income Smoothness

sd = Standard deviation

NP = Net Income before extraordinary activities for firm i in time t .

TAB = Total assets at the beginning of the year for firm i in time t .

CF = Cash flow from operation for firm i in time t .

Method of data Analysis

For the purpose of the empirical analyses, the study used both descriptive and inferential statistical techniques. The analyses were performed using EViews 10 econometric computer software. The descriptive analysis was conducted to obtain the sample characteristics and to observe the average bankruptcy level of the sampled banks. The panel multiple regression analysis was performed to test how the independent variables affect bankruptcy risk (proxied using Altman Z-score, 2006); while the Hausman test was conducted in model one to help chose between fixed and random effect estimation techniques, the Hierarchical Moderated Regression was deployed for models 2 and 3 due to the inclusion of the moderating variables in both models. Some conventional diagnostic tests such as Panel Model Test, normality, multicollinearity, heteroskedasticity, autocorrelation and model specification test were equally conducted to address some basic underlying regression analysis assumptions.

Data Analysis

The analyses involved the application of descriptive statistics, correlation matrix, panel data regression (for model one) and hierarchical moderated regressions (for models two and three). Model one represented the equation without the moderators; while model two and

three have the moderating variables of size and age respectively. The outcome of the panel regression estimations were used to test the research hypotheses.

The entire results are presented in the following sub-sections:

Univariate Analysis

1: *Descriptive Statistics*

	Z_SCORE	INS	EC	TP
Mean	2.429852	-0.05906	607381.1	0.152641
Median	2.069415	-0.04652	367136.0	0.090842
Maximum	16.84797	0.479687	6884000.	0.884816
Minimum	-2.37914	-0.48908	14887.00	0.002809
Std. Dev.	2.492597	0.142241	881033.0	0.153768
Skewness	2.719756	0.236711	3.936223	1.656827
Kurtosis	13.82242	5.130534	22.52804	6.794644
Jarque-Bera	1112.574	36.12173	3361.843	192.4622
Probability	0.000000	0.000000	0.000000	0.000000
Sum	442.2330	-10.7479	1.11E+08	27.78074
Sum Sq. Dev.	1124.560	3.662099	1.40E+14	4.279682
Observations	182	182	182	182

Source: Eviews 10 (2019)

As observed from Table 1, the Z-score has a mean value of 2.42985 and minimum and maximum values of -2.38 and 16.85 respectively. The standard deviation which reveals the spread of the distribution stood at 2.493 which are very close to the mean value. This suggests minimal variability from the mean value in the period observed, meaning that the bankruptcy prediction score among the sampled banks did not disperse (\pm) much across the distributions. It further reveals that on the average, the sampled banks are in the ‘Grey zone’, going by Wurim (2015) suggestion that firms with Z-score value of between 1.1 and 2.6 can be termed as being in the “grey zone”, while firms with Z-score greater than 2.6 can be classified as “non-bankrupt”. Thus, the negative minimum value of -2.379 is an indication that few of the sampled banks are likely in the “distress zone”. The variable of EC (executive compensation) was used in its raw form solely for the descriptive statistics and it showed a mean value of 607381.1 which indicates that, taken together, the executive directors of the sampled banks received about ₦607.38 million on average during the period covered by the study. The mean value of variable of TP stood at 0.1526 indicating that, on average, the sampled banks are highly tax aggressive with an average effective tax rate of 15.3%.

Multivariate Analysis

Table 2: *Correlation Analysis*

Covariance Analysis: Ordinary
 Date: 09/21/19 Time: 23:28
 Sample: 2006 2018
 Included observations: 182

Correlation t-Statistic Probability	Z_SCORE	INS	LOG_EC	TP
Z_SCORE	1.000000 ----- -----			
INS	0.047714 0.640882 0.5224	1.000000 ----- -----		
LOG_EC	0.154694 2.100725 0.0371*	0.047699 0.640684 0.5225	1.000000 ----- -----	
TP	-0.034464 -0.462656 0.6442	-0.015360 -0.206098 0.8369	0.038797 0.520908 0.6031	1.000000 ----- -----

Source: EViews 10, 2019

**, *.significant at 1% and 5% respectively

Table 2 presents the correlation analysis of variables. The onus is to identify the direction of the associations among the variables as well as to check for high-correlations which can be signs of multicollinearity problem. As observed from the table, a weak negative correlation exists between the Z-Score variable and the independent variable of TP ($r=-0.03446$), while the other three independent variables (INS, and EC) have positive association with the bankruptcy risk proxy (Z-Score) at $r = 0.0477$, and $r = 0.155$ respectively. It can also be observed that among the four independent variables, only EC (converted to its log value). Overall, what this result suggests is that INS, EC move in the same direction with Z-Score (bankruptcy risk), as one goes higher, so does the other. Thus, higher levels of INS, EC will likely be associated with higher level of bankruptcy risk. On the other hand, the variable of TP moves in the opposite direction with Z-Score meaning that higher levels of tax planning will most likely be associated with lower levels of bankruptcy risk (Z-Score), but not significantly.

Lastly from the table, it can also be observed that there was no issue of high-correlation among the variables as Hair, Black, Babin and Anderson (2010) suggest that multicollinearity problem is likely present if the correlation coefficient is above 0.90.

Regression Diagnostic Tests

Some other underlying assumptions are required to be met in order for a multiple regression to give a valid result. In this sub-section, four underlying diagnostic tests were conducted prior to the regression estimation to ensure that the basic assumptions are not violated. The tests include: Variance Inflation Factor (VIF) for Multicollinearity, Normality Test using the Jargue Bera, Breusch-Godfrey Heteroskedasticity test and the Ramsey RESET Test for model (mis) specification which helps to show if the model is rightly or correctly specified prior to undertaking the econometric analysis.

Table 3 *Variance Inflation Factors*

Variance Inflation Factors

Date: 09/21/19 Time: 23:49

Sample: 1 182

Included observations: 182

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	9.075038	405.9253	NA
INC	1.227287	1.296042	1.104594
LOGEC	0.113132	1.542953	1.369833
TP	1.091750	2.286115	1.148315

Source: EViews 10 (2019)

Despite an indication of the unlikeliness of multicollinearity problem owing to the low correlation (r) values observed in Table 2, the Variance Inflation Factors (VIF) test for multicollinearity was further performed to reaffirm the assumption. As observed from the table (that is, Table 3), all the VIF values are very close to the value of 1 and far below the benchmark of 10. This indicates the absence of multicollinearity among the explanatory variables. It further implies that all the variables included in the model are properly fitted in the context for which they are deployed in this study.

Table 4: *Result of the Heteroskedasticity Test: Breusch-Pagan-Godfrey*

F-statistic	1.434366	Prob. F(4,177)	0.2245	
Obs*R-squared	5.714311	Prob. Chi-Square(4)	0.2215	
Scaled explained SS	31.09994	Prob. Chi-Square(4)	0.0000	
Date: 09/21/19 Time: 23:47				
Sample: 1 182				
Included observations: 182				
Variable	Coefficient	Std. Error	t-Statistic Prob.	
C	-16.87104	15.39948	-1.095560	0.2748
INC	14.77086	10.18575	1.450149	0.1488
LOGEC	4.105220	2.784633	1.474241	0.1422
TP	-6.303775	9.410480	-0.669868	0.5038
R-squared	0.031397	Mean dependent var	5.740703	
Adjusted R-squared	0.009508	S.D. dependent var	19.52866	
S.E. of regression	19.43560	Akaike info criterion	8.799178	
Sum squared resid	66860.41	Schwarz criterion	8.887200	
Log likelihood	-795.7252	Hannan-Quinn criter.	8.834861	
F-statistic	1.434366	Durbin-Watson stat	0.701431	
Prob(F-statistic)	0.224507			

Source: EViews 10 (2019)

Table 4 shows the test of heteroskedacity using the Breusch-Pagan-Godfrey test. The following test hypotheses are applicable:

Null Hypothesis = Residual is Homoskedastic

Alternative = Residual is not Heteroskedastic

The result as presented in Table 4 shows that the p-value (0.22 or 22%) of the corresponding observed chi-square value is greater than 5%. Hence, we cannot reject the null hypothesis. This means that the error variance is not serially correlated. Hence, we accept the null hypothesis of homoskedastic error term which is desirable.

Table 5: Ramsey Reset Test

Ramsey RESET Test

Equation: UNTITLED

Specification: Z_SCORE3 C INC LOGEC TP DC

Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	1.597338	176	0.1120
F-statistic	2.551488	(1, 176)	0.1120
Likelihood ratio	2.619528	1	0.1056

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	10.28694	1	10.28694
Restricted SSR	719.8731	177	4.067080
Unrestricted SSR	709.5862	176	4.031740

LR test summary:

	Value	df
Restricted LogL	-383.3780	177
Unrestricted LogL	-382.0683	176

Source: EViews 10 (2019)

In order to check for possible error in the functional model misspecification, the study applied the Ramsey Reset Test as shown in Table 5. The result of the test reported an F-statistic of 2.55 and a high probability value of 0.11 (>0.05). This implies that the test could not sustain the null hypothesis of wrongly specified model which means there is no possible nonlinearity in the distribution.

Estimation Results

This sub-section presents the regression results. As earlier noted, there are three (3) regression models in the study. The Fixed Effect and Random Effect panel data estimation techniques were both estimated since they recognize the heterogeneity or individuality that may exist among the sampled companies. However, in order to make a choice on the most appropriate model to adopt/interpret, the Hausman test for endogeneity was employed to help determine the most appropriate between the fixed and random effect models.

Table 6 below presents the extracted outcome of the models.

Regression Analysis

Dependent Variable: Z_SCORE

Method: Panel Least Squares

Sample: 2006 2018

Periods included: 13

Cross-sections included: 14

Total panel (balanced) observations: 182

Table 7 Result of the Panel Regression Results

<i>Independent Variables</i>	(Fixed effect)		(Fixed effect)		(Random effect)	
	Model 1	Model 2	Model 1	Model 2	Model 3	Model 3
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
(C)	-2.535356	0.1384	-3.012244	0.2113	-1.334262	0.5289
INS	-0.08985	0.9288	2.291949	0.1621	0.553938	0.6753
Log_EC	0.830395	0.008***	2.32731	0.025**	0.512816	0.2338
TP	2.680185	0.038**	3.576896	0.0377**	1.066819	0.4478
Moderating Variables						
SIZ_Interaction term	-	-	-0.290418	0.0484**	-	-
AGE_Interaction term	-	-	-	-	0.002059	0.9027
R-squared	0.337056		0.287879		0.055993	
Adjusted R-squared	0.263395		0.204358		0.029174	
F-stat (p-values)	4.58 (0.000)***		3.45 (0.000)***		2.09 (0.06)*	

Source: EViews 10 (2019) Notes: ***, **, * significant at 1%, 5% and 10% respectively; t-values in bracket

Table 7 presents the extracted output of the three econometric models. Although both the fixed and random effects methods were run (see full output in appendix), the fixed effect outcome was presented for models 1 and 2 while the random effect model was presented for interpretation of model 3. This was due to the outcome of the Hausman's test in Table 6 which suggested the presented outcomes as the most appropriate.

From the first column, the statistical significance of the model is assured at the 5% level owing to the f-statistics value of 4.58, implying that the entire four explanatory variables jointly affect the dependent variable (Z-Score). On the proportion of the variation in bankruptcy risk (Z-Score) that was accounted for by the earnings management incentives (independent variables) taken together, the result showed a total of about 33.7%. The adjusted R-squared which controls for the effect of the inclusion of successive explanatory variables on the degrees of freedom stood at 0.263395 (about 26%). This implies that the remaining

proportion of about 74% was not captured by the model and has been taken care of by the error term. This is an indication that the model has low explanatory power which means that there are other variables that could explain the variance in bankruptcy risk (Z-Score) but which were not included in the model.

On the direction and contribution of each of the independent variables to the behaviour of bankruptcy risk proxy, which is determined by the coefficients signs and their level of significance, an observation of the coefficient values of the four (4) independent variables show the existence of negative signs among income smoothing (INS), debt covenant (DC) and the dependent variable (Z-Score) as depicted by the coefficient values of -0.08985 and -0.098035 respectively. However, both (that is, INS) are not statistically significant owing to their high probability values of 0.9288 (93%) and 0.6627 (66.3%) respectively which are both greater than 5%. Thus, increases in income smoothing (INS). The remaining two independent variables (that is EC and TP) have positive coefficient signs of 0.830395 and 2.680185 respectively and both are statistically significant at 1% (p-value=0.008<0.01) and 5% (p-value=0.038<0.05) levels respectively. What this implies is that, on one hand, a unit increase in executive compensation (EC) will cause about 83% increasing effects on the level of Z-Score (bankruptcy risk) while on the other hand, a unit increase in TP (effective tax rate) will lead to about 2.68 units increases in Z-Score.

Test of Hypotheses

In order to answer the research questions, the three (3) null hypotheses earlier formulated in the chapter one of this study were tested in this sub-section. The result of model one was used in testing Hypotheses One (Ho1), Two (Ho2), and Three (Ho3). The probability (sig.) values obtained from the regression result were used for the hypotheses tests.

Decision Rule:

The decision rule goes thus: the null hypothesis will be accepted if the probability value (p-value) is greater than 0.05 or when the calculated t-statistics is less than 2.0, or reversely we reject the null hypothesis if the probability (p-value) value is less than 0.05 and or the t-statistics is ≥ 2 . The summary of the hypotheses results are shown in Table 4.8 below:

Table 8 Summary of Hypotheses Testing

	Hypotheses	Prediction	Actual Result	Decision
Ho1	Income smoothing does not affect bankruptcy risk	Significantly negative	Negative – Insignificant (p-value=0.93)	Accept null
Ho2	Executive compensation does not affect bankruptcy risk	Significantly positive	Positive – Significant (p-value=0.008)	Reject null**
Ho3	Tax planning does not affect bankruptcy risk	Significantly negative	Positive – Significant (p-value=0.038)	Reject null**

Source: Researcher's compilation (2019)

**..Statistically significant

Hypothesis One: There is no significant effect of Income Smoothing on Bankruptcy Risk of listed Deposit Money Banks on NSE.

Hypothesis one examined the effect of income smoothing as a proxy for earnings management on bankruptcy risk among Deposit Money Banks. As observed in Model 1, Table 7 the regression result indicates that the variable of income smoothing has a negative coefficient sign with an insignificant probability value that is greater than 5% (-0.08985 , $p=0.9288>0.05$). This led to the acceptance of the null hypothesis, meaning that income smoothing has a non-significant negative impact on bankruptcy risk among Deposit Money Banks in Nigeria.

Hypothesis Two: Executive Compensation has significant effect on bankruptcy risk of listed deposit money Banks on NSE.

The regression result in Model 1, Table 4.7 showed that the variable of executive compensation has a positive slope coefficient sign and a significant probability level, meaning that it is positively significant and statistically significant at 1% (0.830395 , $p=0.008<0.01$). This led to the rejection of the null hypothesis and acceptance of the alternative, that executive compensation has significant effect on bankruptcy. The implication of this result is that firms with higher executive compensation packages have higher bankruptcy risks.

Hypothesis Three: There is a significant effect of Tax Planning on Bankruptcy Risk of Listed Deposit Money Banks on NSE.

This hypothesis examined the effect of tax planning on bankruptcy risk and the result in Model 1, Table 4.7 showed that the variable of tax planning (TP) has a positive significant on bankruptcy risk and statistically significant at 5% (2.680185 , $p=0.038<0.05$). Relying on this outcome, the study rejected the null hypothesis and accepted the alternative hypothesis which implies that firms that are highly tax aggressive have greater chances of bankruptcy.

Discussion of Findings

The outcome of the first hypothesis test indicates that the variable of income smoothing has a negative coefficient sign with an insignificant probability value. This led to the acceptance of the null hypothesis one (H_01), meaning that income smoothing has a non-significant negative impact on bankruptcy risk of DMBs in Nigeria. What this portends is that higher level of income smoothing may likely decrease the risk of bankruptcy, but not significantly. The negative coefficient is in tandem with our apriori expectation that firms that engage in massive income smoothing activities, in order to have less fluctuation in yearly reported earnings are likely associated with stronger performance due to increased shareholders confidence due to earnings consistency and predictability. The negative sign is at variance with the position of Omoye and Eriki (2014) which claimed that income smoothing is an

avenue for misleading some stakeholders about the underlying economic performance of the company and has far-reaching diminishing effects on the value of the firm.

Thus, there is likelihood that the firm may be experiencing financial distress and management will be augmenting the shortfalls by manipulating accounting figures which may eventually not be sustainable on a long-run till the impending insolvency becomes inevitable. The result of most prior related studies, such as Kolozsvari and Macedo (2016); Ratnaningrum (2016); Zarnegar and Hamidian (2016), also found income smoothing to be negatively associated with firm performance, although theirs were statistically significant. Our result is also related to that of another Nigerian study (Umobong and Ogbonna, 2017) which found no significant difference in the performance of smoother and non-smoother firms, implying that income smoothing does not significantly enhance performance of firms.

On the second hypothesis test, the result shows that the variable of executive compensation has a positive slope coefficient sign and a significant probability level which led to the rejection of the null hypothesis (H_{02}). The positive coefficient sign is in line with our apriori expectation that engaging in earnings management in order to trigger managerial bonuses can be termed opportunistic and can destabilise the going concern status of the company on the long run. The implication of this result is that firms with higher executive compensation packages have higher bankruptcy risks. This result is at variance with agency theory which supports the belief that executive compensation helps to align shareholder interests with those of executives. The idea is to reward agents (directors) in such a way that they strive to maximise firm performance and shareholders wealth, which will ultimately causes the likelihood of bankruptcy to plummet. Empirically, our result on executive compensation supports those of Olaiyan (2015) and Yongli and Dave (2012) which found that higher executive compensation has strong decreasing effect on shareholders' funds, meaning that greater executive compensation increases the chance of financial distress and eventual bankruptcy by increasing the focus of executives only on their personal interests, thereby ignoring the shareholders' interests of profit maximization, resulting in vast turmoil on the viability of the company. Although their study were not on bankruptcy risk but on firm performance, however, the outcome of Kihooto, Omagwa, Wachira and Ronald (2016) has shown that highly profitable firms are less vulnerable to financial distress and eventual bankruptcy. Thus, both can be related.

In the third hypothesis, the result showed that the variable of tax planning (TP) has a positive coefficient sign and a significant p-value. Relying on this outcome, the study rejected the null hypothesis which implies that firms that are highly tax aggressive have greater chances of bankruptcy. This outcome is at variance with our apriori expectation of a negative effect. This could be linked to the fact that tax aggressiveness practice is shrouded in information asymmetry which reduces firm value and may ultimately increase the likelihood of default. Also, although engaging in tax management save the firm some cash, it also depends on the pattern of usage of the tax-cut proceeds. This position is probable considering Katz, Khan and Schmidt (2013) which found that tax aggressive firms are less profitable and sustainable on

the long-run than firms that are not tax aggressive because most of the savings from tax-saving strategies are diverted towards perquisite consumptions, rent extraction (that is, non-value maximizing activities pursued by the management at the expense of the shareholders/owners, including aggressive financial reporting) and value destroying projects. Our result on tax planning is also related to Salawu and Adedeji (2017) which found that tax planning activities has not been benefiting the increase in firm value of Nigerian companies owing to weak government policies. Others such as Ogundajo and Onakoya (2016) and Laura (2013) also found that high effective tax rate reduces firm performance. On the other hand, the result equally negates Chen, Chen, Cheng and Shevlin (2010), Kawor and Kportorgbi (2014); Heitzman and Ogneva (2015), Nwaobia, Kwarbai and Ogundajo (2016) who concluded that high tax planning firms do indeed earn higher returns after tax – meaning that effective tax rate (proxy for tax planning) enhances firm profitability, especially when firms re-invest the savings in positive net present value projects that enhance firm value.

CONCLUSION AND RECOMMENDATIONS

Flowing from the outcome of our statistical analysis, it implies that companies with highly remunerated directors do not outperform their counterparts and are more vulnerable to experience distress risk and/or eventual bankruptcy because they earn more than what they generated which directly affects the firms' financial status. Also, the implication of the outcome of the debt covenant variable is that firms nearing debt covenant violations in Nigeria must always re-strategize to avoid eventual collapse - either by renegotiating their debt contract with creditor or by management becoming more financially disciplined; and also by exploiting debt tax shield benefit and reduced corporate tax waivers. This position is highly probable in the context of this study since (as shown by our descriptive result) about 95% of the sampled banks are highly leveraged. They may have been exploiting some of the above strategies; hence they are still in business as none has been delisted in concomitant with their years of incorporation. The variable of tax planning was found significant, which means that by implication, firms may need to be bordered about their tax policies and try to balance the long run benefits of tax avoidance and thus remaining a faithful tax-paying corporate body.

Further, the income smoothing variable was found insignificant, by implication, firms engaging in aggressive income smoothing have no business worrying about risk of bankruptcy. In practice, it is most unlikely that a firm's income/earnings may remain steady year-in and year-out without significant outliers. By Implication, currently underperforming firms may be making it up with previously conserved higher earnings numbers which may not be sustainable if the poor performance lingers or becomes persistent.

Recommendations

Based on the findings, the study makes the following recommendations:

- i. Listed DMBs should adopt executive directors' cash and stock-options compensation plans that are concomitant with long-run organisational performance and should not be based on short-term earnings declarations. More so, policy makers need to provide

- adequate regulations on the specific metrics for the determination of directors' remunerations and emoluments/bonuses 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.
 - iii. Considering that tax planning has significant effect on the probability of a firm remaining a going concern, the management of our largely dominated debt finance banks should make/adopt effective tax management as part of the firm's strategic financial planning by employing the services of tax experts to the complexity and dynamic of Nigeria tax laws.

REFERENCES

- Adeyeye, P.O., Fajembola, O.D., Olopete, M.O., & Adedeji, D.B. (2012). Predicting bank failure in Nigeria using principal component analysis and D-Score Model. *Research Journal of Finance and Accounting*, 2(3), 159-170.
- Agrawal, K., Chatterjee, C. & Agrawal, K. (2015). Earnings management and financial distress: Evidence from India. *Global Business Review*, 16(5), 140-154.
- Ahmadpour, A. & Shahsavari, M. (2014). Earnings management and earnings quality impact on the future profitability of bankrupt companies in Tehran Stock Exchange, 2(41), 58-37.
- Ahmed, A., Mohammed, A.Y. & Adisa, A.O. (2014). Loan loss provision and earnings management in Nigerian deposit money banks. *Mediterranean Journal of Social Sciences*, 5(17), 49-58.
- Altman, E. I. (1968). Financial ratios. discriminant analysis and the prediction of corporate bankruptcy. *The Journal of Finance*, 23(4), 589-609.
- Amendola A., Restaino M., & Sensini, L. (2013). Corporate financial distress and bankruptcy: a comparative analysis in France, Italy and Spain. *Journal of Accounting*, 2, 131-142.
- Anderson., S., & Twaddle., J. (2007). Pre-positioning for effective resolution of bank failures. *Journal of Financial Stability*, 3(4), 324-341.
- Ani, W. U., & Ugwunta, D. O. (2012). Predicting corporate business failure in the Nigerian manufacturing industry. *European Journal of Business and Management*, 4(10), 86-93.
- Arzu, D., Gloria, S.D. & Mantovani, G.M. (2017). Forecasting bankruptcy: An European Analysis. International University of Monaco; Ca`Foscar.
- Balsam, S., Bartov, E. & Marquardt, C. (2002). Accruals management, investor sophistication, and equity valuation: Evidence from 10-Q filings. *Journal of Accounting Research*, 40(4), 987-1012.
- Bartov, E. (1993). The timing of assets sales and earnings manipulation. *The Accounting Review*, 68(4), 840-855.
- Beaver, W. H. (1966). Financial ratios as predictors of failure. *Journal of accounting research, Empirical Research in Accounting: Selected Studies*, 4(6), 71-111.
- Bellovary, J.L., Giacominio, D.E. & Akers, M.D. (2007). A review of bankruptcy prediction studies: 1930 to present, *Journal of Financial Education*, 1-42.
- Bryan, D.S., Tiras, S.L., & Wheatley, C.L. (2002). The association of audit opinion, auditor change and accounting choice with bankruptcy emergence, State University of New York at Buffalo working paper.
- Campa, D., Del Mar, M., & Miñano, C. (2014). Earnings management among bankrupt non-listed firms: Evidence from Spain. *Spanish Journal of Finance and Accounting*, 43(1), 3-20.
- Cenciarelli, V.G. (2018). Bankruptcy prediction and earnings management, Being Research seminar at Universitàsplatz 1 - Piazza Università, 1, 39100 Bozen-Bolzano

- Charitou, A., Neophytos, L., & Lenos T. (2007). Managerial discretion in distressed firms. *The British Accounting Review*, 39(4), 323–346.
- Chen, S., Chen, X., Cheng, Q., & Shevlin, T. J. (2010). Are family firms more tax aggressive than non-family firms? *Journal of Financial Economics*, 95(1), 41–61.
- Chen, Y., Chen, C.H. & Huang, S.L. (2010). An appraisal of financially distressed companies' earnings management: Evidence from listed Companies in China. *Pacific Accounting Review*, 22(1), 22 - 41, <https://doi.org/10.1108/01140581011034209>
- Chung .K. tan S.S. & Holdsworth D.K. (2008). Insolvency prediction model using multivariate Discriminate Analysis and artificial neural Network for the finance industry in New Zealand. *International Journal of Business and Management*, 3(1), 1-12.
- Coppens, L. & Peek, E. (2005). An analysis of earnings management by european private firms. *Journal of International Accounting, Auditing and Taxation*, 14(1), 1-17.
- Cornett, M.M., Marcus, A.J. & Tehranian, H. (2009). Corporate governance and pay-for-performance: The impact of earnings management. *Journal of Financial Economics*, 87(1), 357-373. Downloaded on March 28th 2018 from <https://www2.bc.edu/~tehran/h/Earnings%20management%20JFE.pdf>
- Dastgir, M., Hoseinzadeh, A., Khodadi, V., & Vaez, A. (2012). Earnings quality in distressed companies. *Financial Accounting Research*, 4(1), 1-16.
- DeFond, M. L., & Jiambalvo, J. (1994). Debt covenant violation and manipulation of accruals. *Journal of Accounting and Economics*, 17(1-2), 145-76.
- Degeorge, F., Patel, J. & Zeckhauser, R., (1999), Detecting earning management to exceed thresholds. *Journal of Business*, 72(1), 1 – 33.
- Egbunike P.A. & Igbini, I.M. (2018).Threat of bankruptcy and earnings management in Nigerian listed Banks, *ActaUniversitatisDanubius*, 14(3).
- Egbunike, P.A., & Ibeanuka, C.B. (2015). Corporate bankruptcy predictions: Evidence from selected banks in Nigeria. *Global Journal for Research Analysis*, 4(2), 17-23.
- Gaver, J.J., Gaver, K.M. & Austin, J.R. (1995). Additional evidence on bonus plans and income management, *Journal of accounting and Economics*, 19(1), 3-28.
- Gerritsen, P. (2015). Accuracy rate of bankruptcy prediction models for the dutch professional football industry, Master thesis, University of Twente, the Netherlands.
- Gordon, M. J. (1971). Towards a theory of financial distress. In: *The Journal of Finance*, 26(2), 347-356.
- Guenther, D. A. (1994). Earnings management in response to corporate tax rate changes: Evidence from the 1986 tax reform act. *Accounting Review*, 29(1), 230-243.
- [Gunay](#), E.N. & [Ozkan](#), M. (2007). Prediction of Bank Failures in Emerging Financial Markets: an ANN Approach. *The Journal of Risk Finance*, 8(5), 465-480, <https://doi.org/10.1108/15265940710834753>
- Gunny, K.A. (2010). The relation between earnings management using real activities manipulation and future performance: Evidence from Meeting Earnings Benchmarks, *Contemporary Accounting Research*, 27(3), 855888.

- Gusarova, M. & Shevtsov, Y. (2017). A study of association between accounting manipulations and bankruptcy likelihood analysis of 18 public companies from the United Kingdom, Bachelor's Degree thesis, JAMK University of Applied Sciences.
- Hamid, W. & Rohani, M. (2018). [Predicting financial distress: Applicability of O-score model for Pakistani firms](#). *Business and Economic Horizons* Prague Development Center, 14(2), 389-401.
- Hanlon, M., & Slemrod, J. (2009). What does tax aggressiveness signal? Evidence from stock price reactions to news about tax shelter involvement. *Journal of Public Economics*, 93(4), 126–141.
- Hassanpour, S., & Ardakani, M.N. (2017). The effect of pre-bankruptcy financial distress on earnings management tools. *International Review of Management and Marketing*, 7(3), 213-219.
- Healy, P., & Wahlen, J. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting Horizons*, 13(4), 365-383.
- Healy, P.M. (1985). The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics* 7, 85–107.
- Heitzman, S., & Ogneva, M. (2015). Corporate tax planning and stock returns. *University of Southern California – Marshall School of Business* October 30, 2015
- Howe, J.S., & Houston, R. (2016). Earnings management, earnings surprises, and distressed firms. *Accounting and Finance Research*, 5(1), 64-87.
- Hu, N., Cao, Q., & Zheng, L. (2015). Listed companies' income tax planning and earnings management: Based on China's capital market. *Journal of Industrial Engineering and Management*, 8(2), 417---434.
- Jacoby, G., Li, J. & Liu, M. (2017). Financial distress, political affiliation, and earnings management: The case of politically-affiliated private firms. Published article downloaded from: <https://ssrn.com/abstract=2903816>
- Joosten, C. (2012). Real earnings management and accrual-based earnings management as substitutes. Master thesis Department Accountancy Faculty of Economics and Business Studies Tilburg University.
- Kangarzadehlouei, (2009). Relationship between Income Smoothing and Financial Distress of Companies in the Tehran Stock Exchange, PhD Thesis, Iran: Tehran University.
- Karami, G., Shahabinia, S. & Gholami, A. (2017). Investigating the Relationship between Real Earnings Management and Timely Gains and Losses Recognition in Tehran Stock Exchange, *Journal of Engineering Technology*, 6(2) 496-505
- Kawor, S & Kportorgbi, H. K. (2014). Effect of tax planning on firms' market performance: evidence from listed firms in Ghana. *International Journal of Economics and Finance*, 6(3), 162 –168.
- Khan, U.E. (2016). Bankruptcy Prediction for financial sector of Pakistan: Evaluation of logit and discriminant analysis approaches, *Pakistan Journal of Engineering Technology and Science* (PJETS), 6(2).

- Kihooto, E., Omagwa, J., Wachira, M. & Ronald, E. (2016). Financial distress in commercial and services companies listed at Nairobi Securities Exchange, Kenya. *European Journal of Business and Management*, 8(27), 96-89.
- Li, F., Abeysekera, I., & Ma, S. (2011). Earnings management and the effect of earnings quality in relation to stress level and bankruptcy level of Chinese listed firms. *Corporate Ownership and Control*, 9(1), 366-391.
- Li, S., & Richie, N (2016). Income smoothing and the cost of debt. *China Journal of Accounting Research*, 9(3), 175-190.
- Mattia, I. & Giuseppe, B. (2018). Analysis of the Risk of Bankruptcy of Tomato Processing Companies Operating in the Inter-Regional Inter-professional Organization. An Article from Department of Civil Engineering, Environment, Territory and Architecture (DICAteA), University of Parma, 43124 Parma, Italy. e-mail mattia.iotti@unipr.it
- Mohammadi, F., & Amini, P. (2016). Investigating the relationship between financial distress and earnings management in corporations of accepted in Tehran Stock Exchange. *International Academic Journal of Accounting and Financial Management*, 3(6), 41-50.
- Mulyadi, M.S., & Anwar, Y. (2015). Corporate governance, earnings management and tax management. *Procedia - Social and Behavioral Sciences*, 177(5) 363 – 366.
- Muranda, Z. (2006). Financial Distress and Corporate Governance in Zimbabwean Banks. *Corporate Governance: The International Journal of Business in Society*, 6(5), 643-654, <https://doi.org/10.1108/14720700610706126>
- Myers, J.N., Myers, L.A., & Skinner, D.J. (2007). Earnings Momentum and Earnings Management, *Journal of Accounting, Auditing & Finance*, 22(2), 249-284.
- Nagar, N., & Sen, K. (2016). Earnings management strategies during financial distress. *Journal of Indian Institute of Management*, 2(3), 1-42.
- Ogundajo, G.O., & Onakoya, A.B. (2016). Tax planning and financial performance of Nigerian manufacturing companies. *International Journal of Advanced Academic Research*, 2(7), 64-80.
- Ohlson J. (1980). Financial ratios and the probabilistic prediction of bankruptcy. *Journal of Accounting Research*, 18, 1, 109-131.
- Olaniyi, T.A. (2007). Predicting potential of failure in Nigerian Banking sector: A comparative analysis of First bank and Trade bank plc. *Babcock Journal of Management and social sciences, Babcock University*, 6(1), 64-73.
- Outecheva, N. (2007). Corporate financial distress: An empirical analysis of distress risk. Dissertation of the University of St. Gallen Graduate School of Business Administration, Economics, Law and Social Sciences (HSG)
- Rahman, M., Moniruzzaman, M. & Sharif, J. (2013). Techniques, Motives and Controls of Earnings Management, 1(1) 22- 34.
- Rani, P., Hussain, F.F., & Chand, P.V. (2013). Managerial incentives for earnings management among listed firms: evidence from Fiji. *Global Journal of Business Research*, 7(1), 21-31.

- Rosner, R.L. (2003), Earning manipulation in failing firms. *Contemporary Accounting Research*, 20(2), 361-408.
- Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, 42(3), 335–370.
- Scott, W.R. (2009). *Financial Accounting Theory*. Fifth ed. Prentice Hall, Upper Saddle River, New Jersey
- Senbet, L.W. & Wang, T.Y. (2012). Corporate financial distress and bankruptcy: A Survey.
- Shabani, N.A. & Sofian S. (2018). Earnings smoothing and bankruptcy risk in liquidating private firms. *Asian Journal of Finance & Accounting*, 10(1).
- Sinkey, J. F., Joseph, V., Terza, R. & Dince, R. (2012). A ZETA analysis of failed commercial banks. *Quarterly Journal of Business and Economics*, 12, 35-4.
- Trueman, B., & Titman, S. (1988). An explanation for accounting income smoothing. *Journal of Accounting Research* 26: 127-139.
- Veganzones, D., & Severin, E. (2016). The impact of earnings management on bankruptcy prediction models: An empirical research. Downloaded on October 17, 2017 from: <https://ssrn.com/abstract=2980144>
- Verleun, M., Georgakopoulos, G., Sotiropoulos, I., & Vasileiou, K. Z. (2011). The Sarbanes-Oxley Act and Accounting Quality: A Comprehensive Examination. *International Journal of Economics and Finance*, 3(5), 49-64.
- Viacheslav, M. (2014). Determinants of firms' bankruptcy: the case of Ukraine. An MA in Economic Analysis thesis submitted to Kyiv School of Economics, Kiev, Ukraine. Downloaded from www.kse.org.ua/download.php?downloadid=404
- Wang, Y., & Campbell, M. (2010). Business failure prediction for publicity listed companies in China. *Journal of Business and Management*, 16(1), 22-31.
- Zhongling, Q. & Xiao, R. (2017). Distress risk and earnings management (First version), University of Georgia, Athens GA 30602 USA.