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Determinants of Bank Distress in Nigeria Commercial Banks: A Multi-Dimensional Study

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ABSTRACT
This study examined internal and external factors that determine banks distress in Nigeria. The objective is to examine the extent to which macroeconomic variables, monetary policy variables and bank internal variables determine bank distress in Nigeria. Annual time series data was sourced from Central Bank of Nigeria Statistical Bulletin, financial stability reports and annual reports of the deposit money banks. Three multiple regression models were formulated to determine the effect of the variables in determining bank distress. Ordinary least square method of co-integration, unit root test, Granger causality test and Vector error correction estimate was adopted to examine the effect of the variables in determining bank distress in Nigeria. From the monetary policy variables, the study found that 53.7 percent variation on bank capital adequacy ratio can be explained by the independent variables. The beta coefficient found that monetary policy rate and treasury bill rate have negative effect on capital adequacy ratio while growth of broad money supply, real interest rate and financial sector development have positive impact on bank capital adequacy ratio. Model II found that macroeconomic variables can explain 83.3 percent variation on bank capital adequacy ratio. The beta coefficient found that inflation rate, public expenditure and real gross domestic product have negative effect while openness of the economy and exchange rate have positive effect on bank capital adequacy ratio. Model III found that the internal variables can explain 82 percent variation on bank capital adequacy. The beta coefficient found that credit expansion, earnings and management quality have positive effect while liquidity and non-performing loans have negative effect on bank capital adequacy ratio. From the findings, the study concludes significant relationship between the monetary policy, macroeconomic and internal variables and deposit money banks banking distress. We recommend that management of deposit money banks should formulate polices and device measures of managing the internal and external factors that can cause bank distress.
Keyword: Bank Distress, Openness of the economy, Multi-dimensional Study, Bank capital adequacy ratio and credit expansion

INTRODUCTION

Banks play an important role in providing credit and liquidity to the economy (Krahnena nd Schmidt, 2004). The intermediate functions of deposit money banks have great extent to which it enhance the realization of monetary and macroeconomic goals in the economy. A sound banking sector is also required for the effective transmission of monetary policy and effective payment system. In Nigeria, Central Bank of Nigeria Act of 1959 as amended gives CBN power as regulatory institution to other financial system to achieve set monetary and macroeconomic goals. Section 9 (1) BOFIA states that the bank shall from time to time, determine the minimum paid-up share capital requirement of each category of banks licensed under this Act (Akani and Lucky, 2015). Bank distress is a function of both internal and external operating environment. Poor asset quality, corporate governance, credit growth and management can affect bank soundness. Harsh monetary and macroeconomic factors such as business cycle have the capacity of affecting negatively bank performance and soundness. Disruptions like financial distress impede the ability of the financial sector to intermediate financial flows and might also be restrain economic activity (Betz, et al., 2013; Zamorski and Lee, 2015).

Sound banking system is a matter of concern to the management, the regulatory authorities and policy makers. When banks are healthy they efficiently allocate funds and when banks are unhealthy, whether distressed or insolvent, this role is compromised. This is why governments engaged in costly bailouts with tax payers' money in an effort to resume the health of financial institutions and reduce the adverse effect of distress and failure on economy (Daumont, et al., 2004; Zamorski and Lee, 2015; Betz, et al., 2013). Banking distress and failure, on one hand, uncover the shortcomings of existing monitoring system of the financial sector. According to Schutz (2014) and Kinyariro (2016), these measures reduced financial distress and failure of EU and Kenyan banks respectively. Buchholst and Rangvid (2013) were also reported that increasing capital contribution promotes bank resilience to disruptions and distress. One contradiction is observed among the findings of cross country studies: for instance, Poghosyan and Cihak (2009), using multiple logistic regression, identified under capitalization, deterioration in asset/loan quality and poor earning ability, as having significant effect on financial distress of European commercial banks but management efficiency and liquidity were not appeared significant. However, using same method, Sahut and Mili (2011) reported that management inefficiency have significant effect on financial distress of Nigeria banking sector. As also supported by Konstandina (2006), Sahut and Mili (2011) disqualified the effect of asset quality, which was appeared as significant factor of bank distress and failure of EU commercial banking sector.

Another contradiction is observed among the findings of countries' studies: to mention some, Bou-Said and Saucier (2003) identified under capitalization and deterioration in asset quality as a main cause for the 1990s Japanese banking distress but their finding regarding earning ability was not significant. However, earning ability appeared to be significant determinants of financial distress of Russian banking sector (Konstandina, 2006). There is still another contradiction with regard to the macro economic factors. According to Goldstein et al. (2010) and Zhang et al.(2014) macroeconomic variables, such as GDP, inflation, interest rate, have significant effect on financial distress although Konstandina (2006) and Sahut and Mili (2011) disregard this effect. Despite their inconsistency, considerable empirical investigations had conducted in the area of banking financial distress; however, there are no sufficient studies concerning Nigeria banking sector. The sector has been characterized by a rapid growth and attractive accounting profit, but this does not guarantee their going on concern since accounting profit does not equivalent with cash (Pranowo, et al., 2010). Thus, an investigation is needed to assure their soundness.

In this regard recently a lot of researches have done. To mention some: Girma (2011), Atakilt and Veni (2015), Tsegaye and Nigatu (2016) investigate the banking sector from credit risk; while Nigist (2015), Fentaw (2016) approaches the sector from liquidity risk. However, since these are not the only problems that the banking sector prone to, further researches should be made to address other problem areas. So, this research approached the banking sector of Nigeria from a broader perspective; financial distress. So far, there is only one attempt by Lucky (2017) that aimed to identify the factors that determine commercial bank soundness in Nigeria. Therefore, this research is needed to fill the literature gap regarding the Nigeria banking sector and contribute to the body of knowledge by examining bank specific variables, macroeconomic and monetary variables that determine deposit money banks soundness.

LITERATURE REVIEW

Bank Distress

The term bank distress has been swapped with failure, insolvency, default and bankruptcy. But they are distinctly different in their formal usage (Altman, 2006). Failure, by economic criteria, means continues decline in return from invested capital as compared to similar investment and risk level. According to Altman (2006) business failure includes businesses that cease operation following the assignment or bankruptcy; those that cease with loss to creditors after such actions or execution, foreclosure, or attachment; those that voluntarily withdraw, leaving unpaid obligations, or those that have been involved in court actions such as receivership, bankruptcy reorganization, or arrangement; and those that voluntarily compromise with creditors. Altman (2006) identified insolvency as another term that has been used interchangeably with distress, but in its formal use insolvency is an inability of total asset to cover total liability; meaning that negative net worth. Another word that inescapably associated with distress is

default. Technical default happens when debtor violates a condition of an agreement with a creditor. On the other hand, when a firm fails to meet interest and principal payment legal default is more likely.

As a rule, 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. Very often, 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. As a consequence, theoretical and empirical models of financial distress exhibit to a certain extent a one-sidedness in the context of the analysis questions. They mainly concentrate on the momentary perspective, when the adverse process has reached its lowest point and the decision about insolvency or distressed restructuring has to be made.

DETERMINANTS OF BANK DISTRESS

Bank Specific Factors

Capital Ratio and Financial Distress

Capital adequacy ratio is the capital expected to maintain balance with the risks exposure of the financial institution such as credit risk, market risk and operational risk, and so on; in order to absorb the potential losses and protect the financial institution‘s debt holder. Capital adequacy can be defined in term of capital to deposit ratio because the primary risk is depository risk derived from the sudden and considerably large scale of deposit withdrawals. Another measure of capital is capital to total asset ratio. This is because the default on loans came to expose the greatest risk instead of deposit withdrawals. This ratio is simple to calculate and transparent. In general, having sufficient capital allows a bank to absorb losses and still keeps running its daily business operations, even under higher financial distress condition.

Asset Quality and Financial Distress

A most important asset category is the loan portfolio; the greatest risk facing the bank is the risk of loan losses derived from the delinquent loans. The credit analyst should carry out the asset quality assessment by performing the credit risk management and evaluating the quality of loan portfolio using trend analysis and peer comparison. Measuring the asset quality is difficult because it is mostly derived from the analyst’s subjectivity. According to Grier (2007) “poor asset quality is the major cause of most bank failures. The deterioration in loan, as measured by non-performing loan, was also the main cause for the 1980s and 1990s banking crisis in Africa (Daumont, *et al.*, 2004). For most financial institutions, loans are the most risky assets in their balance sheets and loan quality variables have been statistically significant in previous empirical research. During the global financial crisis write downs on real estate loans were also responsible for getting banks into trouble. Thus high loan loss leads banks to financial distress and failure (Bou-Said and Saucier, 2003).

Management Efficiency and Financial Distress

Management efficiency is the most important ingredient that ensures the sound functioning of commercial banks. In competitive financial sector, efficiency and effectiveness have become the rule as banks constantly strive to improve their productivity. Presently it is common to see branches of banks both public and private maintaining extended working hours, flexible time schedules, outsourcing marketing etc. to attract customers. Another development over the year has been the deployment of technology. Thus, managerial competence of a bank is an important determinant of profitability, while contributing to the long term survival of the bank, even under distress (Sahut and Mili, 2011).

Earning Ability and Financial Distress

To survive in a competitive business environment generating low volatile and diversified income is a must to attain. In accordance with Grier (2007) opinion, a consistent profit not only builds the public confidence in the bank but absorbs loan losses and provides sufficient provisions. It is also necessary for a balanced financial structure and helps provide shareholder reward. Thus consistently healthy earnings are essential to the sustainability of banking institutions. The proxy for the earnings ratio is the return on average equity or average assets. A higher return gives a bank more buffers to deal with unexpected losses and stayed under distress (Konstandina, 2006).

Liquidity and Financial Distress

There should be adequate liquidity, compared to present and future needs, and availability of assets readily convertible to cash without undue loss. The fund management practices should ensure that a bank is able to maintain a level of liquidity sufficient to meet its financial obligations in a timely manner; and capable of quickly liquidating assets with minimal loss. The liquidity ratio expresses the degree to which a bank is capable of fulfilling its respective obligations. Banks makes money by mobilizing short-term deposits at lower interest rate, and lending or investing these funds in long-term at higher rates, so it is hazardous for banks mismatching their lending interest rate. Poor management of short term liquidity thus leads initially solvent financial institutions to financial distress and failure (Sahut and Mili, 2011).

Bank Size and Financial Distress

Regarding bank size literature provides a contradicting view. On one hand, Bongini et al. (2001) argue that in terms of probability of financial distress, a large financial institution might have lower chance of becoming distressed if it is more diversified and less exposed to liquidity shocks. On the other hand, according to the "too-big-to-fail" hypothesis the likelihood of distress increases for big banks due to a guarantee provided from government at a time of insolvency. This support exposed large banks to take excessive risks, which is more than they can afford to lose, in an effort to maximize earnings (Iannotta, et al., 2007).

Macroeconomic Factors

Economic Growth and Financial Distress

The economic growth is measured as percentage change in Gross Domestic Product (GDP) or Gross National Product (GNP). The GNP is broader than GDP, although both proxies are used to measure economic growth. Economic growth usually signals a healthy economy and reduced the probability of financial distress in the banking industry. This happens because negative shocks affect the solvency of bank borrowers, a major recession or crises in business operations reduces borrowers' capability to service obligations; as a result increases banks' NPLs and eventually banks insolvency.

Inflation and Financial Distress

It is shown that low and stable inflation is important for the financial activity viability. By offering a relative monetary certainty, it reduces financial distress or the exposure to bank failure. Several empirical studies such as those of Boyd, Levine and Smith (2001) have shown that monetary stability and financial development is generally negatively correlated. Thus, higher inflation contributes to financial stability.

Saving Interest Rate and Financial Distress

Hellman et al. (2000) provide a theoretical argument to show that, in an environment with only capital adequacy regulation and no regulation of interest rates, banks may have an incentive to bid up deposit interest rates so as to gain the funding to "gamble". Since the National bank set only the floor to saving rate this theory might also work for Ethiopian commercial banking sector. Only a combination of capital adequacy regulation and deposit interest rate limitations can implement the Pareto-optimal allocation under all circumstances (Evan Kraft and TomislavGalac, 2005). Therefore, high deposit interest rates were a source of funding for risky banks, and that high deposit interest rates are correlated with eventual failure.

THEORETICAL LITERATURES

Trade-off theory

The trade-off theory underlines that although the tax benefit of debt will cause the value of a firm to increase as leverage is increased, this will only be true to a point since leverage increases, so too does the likelihood of default. The cost of financial distress eventually becomes so great that it erodes the benefits of the tax shield, and firm value begins to decline. The implication is that there is an optimal debt level. Beyond this level, firm value declines because of the increased probability of default. Although the Modigliani and Miller (1950) theory was revised to incorporates the tax benefit of debt, it still failed to incorporate the effect of financial distress. Hence, the trade-off theory addressed the impact of financial distress on the capital structure decision. The underline premise of this theory is that a firm will identify

an optimal target capital structure that they believe balances the benefits of the tax shield against the cost of distress.

Entropy theory

The Entropy theory or the Balance Sheet Decomposition Measure theory dictates that it is possible to identify the potential risk of financial distress by carefully looking at changes in their balance sheet (Aziz and Dar, 2006). According to this theory, if a firm is not capable of maintaining equilibrium state in their balance-sheet component (Asset and liability) and is not able to control in near future, it is more likely to foresee distress (Aziz and Dar, 2006).Entropy theory employs the Univariate Analysis (UA) and Multiple Discriminate Analysis (MDA) in examining changes in the structure of balance sheets. Univariate Analysis is the use of single accounting based ratios indicators for the distress risk assessment (Natalia, 2007). The financial ratios of each company, therefore, are compared once at a time and the distinction of those companies through a single ratio with a cut – off value is used to classify a company as either distressed or non-distressed (Monti and Moriano, 2010). MDA, which has developed to overcome the shortcomings of univariate analysis, is a statistical analysis whereby more than onevariable is analyzed at the same time (Slotemaker, 2008). So far, Aziz and Dar (2004) and Sayari (2013) and Sun and Li (2008, as sighted in Kinyariro, 2016), have used entropy theory as the theoretical foundation for investing studies on financial distress.

Gambler's Ruin theory

Gambler Ruin theory, which was developed by Feller in 1968, is based on the probability of a gambler wins/loses of money by chance. The gambler starts out with appositive, arbitrary, amount of money where the gambler wins a dollar with probability *p* and loses a dollar with a probability (1-*p*) in each period. The game continues until the gambler runs out of money (Espen, 1999). The firm can be considered as a gambler playing repeatedly with some probability of loss, continuing to operate until its net worth/capital goes to zero. With an assumed initial amount of cash, in any given period, there is a net positive that a firm's cash flows will be consistently negative over a run of periods, ultimately leading to bankruptcy (Aziz and Dar, 2006). The major weakness of this theory is that it assumes that a company starts with a certain amount of cash; that means, the company has no access to securities markets and the cash flows are results of independent trials (Espen, 1999).

Adoption of Theory

This study adopts the tradeoff theory which states that cost of financial distress eventually becomes so great that it erodes the benefits of the tax shield, and firm value begins to decline. The trade-off theory addressed the impact of financial distress on the capital structure decision. The underline premise of this theory is that a firm will identify an optimal target capital structure that they believe balances the benefits of the tax shield against the cost of distress.

Empirical Review

Akani and Lucky (2015) examined capital adequacy ratios and the impact on the profitability of Commercial Banks in Nigeria from 1980 – 2013. The objective is to investigate whether there is a dynamic long run relationship between capital adequacy ratios and the profitability of commercial banks. Time series data were sourced from Stock Exchange factbook and financial statement of quoted commercial banks and the Johansen co-integration techniques in vector error correction model setting (VECM) as well as the granger causality test were employed. The study has Return on Asset (ROA), Return on Investment (ROI) and Return on Equity (ROE) as the dependent variables and the independent variables are Adjusted Capital to Risk Asset Ratio (ACRR), Capital to Deposit Ratio (CTD), Capital to Net Loans and Advances Ratio (CNLAR), Capital to Risk Asset Ratio (CRA) and Capital to Total Asset Ratio (CTAR). The empirical result demonstrated vividly in the models that there is a positive long run dynamic and significant relationship between return on asset and capital to risk asset ratio and capital to deposit ratio while others are negatively correlated. The findings also revealed that there is bi-directional causality running from ROA to ACRR and ROA to CNLAR.

Sinkey, Treza and Dince (2012) applied a ZETA model which is revised model of Z score analysis for predicting the bank failure. The purpose of their study was to test the cross-industry validity of the so-called zeta model. They used the test sample consisting of commercial banks that failed in United States

during the early1980s. 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. According to the researchers the possible reasons of the model being not as accurate as its original version are inability of bank accounting data to reflect market values, the presence of criminal misconduct as a major contributing factor in bank failures, and the process by which banks are declared insolvent.

Carpeto, et al. (2010) studied distress classification measures in the banking sector. They tested the power of ten different accounting measures using media coverage as the benchmark for a sample of 1,175 banks which participated in merger and acquisitions or divestiture deals over the 22 years. According to the results of the study, a bank should be defined as distressed if the ratio of its non- performing loans to total loans is in the two highest deciles of the industry, using a three-year moving average.

Amadasu (2012)evaluated the financial distress of selected commercial banks in Nigerian from 2003 to2007 with four packages of analysis, multiple discriminate analysis, ordinary least squares regression, correlation Matrix and Logit-Probit regression, for sophistication and effectiveness instead. The finding is that working capital/total asset (default ratio) among others should be closely taken care of and the major recommendation is that bank officials or corporate managers whose firms failed should not be with impunity.

Muluneh (2007) conducted the efficiency analysis of private commercial banks. In his research he examined the market structure of private commercial banks in the country's economy using the Herfindahl Index. He also tried to analyze cost efficiency of six private commercial banks operating in Ethiopia. He made efficiency analysis using quarterly panel data from the first quarter of fiscal year 1997/98 to the second quarter of 2005/06 and employing the Stochastic Frontier Analysis. The cost efficiency result of the banks under review shows an improvement from time to time during the period. During the first two quarters of 2005/06 on average the banks were found producing for Birr 1.101 an output that can efficiently be produced for Birr 1.0. From the firm specific determinants of efficiency, size of banks (measured by total assets and branch network) and age are found negatively related while capital is found to positively affect efficiency of the banks.

Konstandina (2006) reported that management inefficiency increase the probability of failure. The study was also used proportional hazard model to identify factors that determine survival times; and identified holding high government securities adversely affect bank survival, which is inconsistent with Molina (2002) that had reported significantly contribute to Venezuelan banking soundness. In general, the research reported that bank specific factors, such as equity to total assets, nonperforming loans, management efficiency, interbank loans, loans to residents and non residents, public deposit, other bank deposit, liquid assets, profit margin and size of bank, to be essential in explaining failures and survival times. On the other hand, the macroeconomic variables, such as GDP, inflation and exchange rate, were identified as insignificant to both, failure and survival of financial institutions.

Al-Saleh and Al-Kandari (2012) investigated the Kuwait commercial banks. Based on multiple logistic regression analysis, using a sample of six commercial banks for the period 2001 to 2009, they were identify three ratios, namely investment in securities to total assets, loan to total assets and loan to deposit, as significant determinants of banking financial distress, although the data suffered from multicollinearity. Whereas, net profit to total assets, banking income to assets, liquid asset to assets, equity to asset and deposit to asset were reported as insignificant to financial distress.

Buchhols and Rangvid (2013) investigated Danish banks for the period 2008 to 2012 using multiple logistic regressions. Based on their analysis a bank's excess capital in per cent of risk weighted assets, the three year average lending growth lagged two years, property exposure, and a funding-ratio were collectively predict the probability of a bank becoming distressed.

Zhang et al. (2014) identified the determinants of financial distress for US large bank holding companies (LBHC); based on 354 US LBHC and using distance–to-default (DD) as admeasure of the probability of distress. Based on their analysis that involve housing price index, to capture the effect of pro-cyclical macroeconomic factors; NPL, net charge off ratio and short-term whole sale funding, as a measure of risk characteristics; activity diversity and measures of regulatory capital requirement; they were come up with the following findings:

Zhang et al. (2014) identified housing price index is consistently significant and is positively associated with the DD measure. Non-performing loans, short-term wholesale funding, and the credit risk indicators were also negatively associated with the DD measure. Non-interest incomes positively related with the BHCs' DD, which was on the contrary to their expectation. The positive relationship exhibits the complexity of the examined BHCs. However, they had reported negative effect of off-balance-sheet activity on the DD. Finally, they have concluded that capital requirements, as measured by Tier 1 risk-based capital ratio, total risk-based capital ratio and Tier 1 leverage ratio, were significantly determined default risk of US BHC.

Yauri et al. (2012) investigated the effect of recapitalization on Nigerian banking distress, concluded that increasing minimum capital requirement had only account for short-term improvement in the liquidity position of banks and improvement in their asset quality but were not have long-term effect on forestalling distress. Therefore, they had recommended improving bank corporate governance to forestall future occurrence of the threat of distress in the banking sector, which is also consistent with the findings of Baklouti et al. (2016). However, most recently,

Kinyariro et al. (2016) investigated the contribution of Basel III accord in forestalling distress of Kenyan commercial banks. They used Altman's Z-score as a measure of bank distress for 43 banks for the period 2013-2014 and identified, liquidity requirement of the accord, as having significantly positive effect on distress; however, leverage and capital requirements were appeared insignificant.

Pesola (2005) used the ratio of banks' loan losses to lending as a measure of financial distress and fragility when investigated the Nordic countries macroeconomic determinants of banking fragility and distress. It is assumed that a significant increase in banks' loan losses does not emerge out of the blue. Loan losses have a rather long gestation period when the borrowers 'vulnerability to negative shocks like change in interest rate gradually increases. Therefore, it was concluded that high customer indebtedness combined with adverse macroeconomic surprise shocks, such as change in income as measures by GDP and change in real interest rate, contributed to the financial distress in banking sector. Loan losses were also display strong autoregressive behavior which might indicate a feedback effect from loan losses back to macroeconomic level in deep recessions.

Poghosyan and Cihak (2009) were also investigating distress in European banks. Based on a unique database of individual bank distress across the European Union from mid-1990s to 2008 and using logistic regression model, banks with better capitalization and earnings have less PD, as supported by the economic theory. And poor asset quality as measured by loan loss provision and as an indication of deterioration in loan portfolio was also associated with high degree of experiencing financial distress in the upcoming year.

Sahut and Mili (2011) examined determinants of banking distress and merger as strategic policy to resolve distress in Middle East and Northern Africa (MENA) countries by applying long list of bank specific and macroeconomic variables using two logit econometric models. The study was involved 275 non-distressed and 55 distressed banks in the first model for identifying the determinants of distress. In the second model only 55 distressed banks (of which 37 were involved in merger) were involved since the focus is to estimate the probability of merger with respect to distress. The first model was 75% accurate in classifying distressed banks. The result confirmed that bank level factors not only significantly affect the likelihood of bank failure, but also explain a high portion of the likelihood of distress for distressed banks (over 50%).Equity to total asset and to total loan appeared as having significant and negative effect; this implies that higher capitalization has a negative impact on the probability of distress since the bank will be able to absorb losses. But equity plus loan loss reserve to loans was insignificantly positive; whereas loan loss reserve to gross loans and loan growth significantly increase the probability of financial distress. Better earning ability (ROA, ROE and net interest income to total revenue) tend to decrease financial distress insignificantly. Privately owned banks were significantly distressed than the public. This is because state owned banks had benefited from depositors' flight to safety.

Sahut and Mili (2011) deployed involves both bank-level and macroeconomic variables to predict financial distress. This model revealed that macroeconomic variables do not significantly affect the

probability of financial distress. That means, Real interest rate, exchange rate, and consumer price index are insignificant and contrary to previous studies of Goldstein, Kaminsky and Reinhart (2000).
Zhen-Jia-Liu (2015) tried to identify the determinants of financial distress using correlation analysis and logistic regression. The study comprises 772 sample banks, which represent banking sector of OECD, NAFTA, ASEAN, EU, NICs, G20 and G8 countries, for which data collected from 2002 to 2015. Both bank specific and macroeconomic variables were considered in the regression and, based on correlation analysis, compared both factors across group of countries. Hence, the result of the study reveals that nonperforming loans have a significantly positive correlation with bank distress in the OECD, whereas provisions for loan losses return of equity,
Interest income to interest expenses and non-interest income to non-interest expenses have a significantly negative correlation. The loan ratio and non-performing loans have a significantly positive correlation with bank distress in the NAFTA. Capital ratio has a significantly negative correlation with bank distress in the ASEAN, whereas the loan ratio, non-performing loans, and fixed assets have a significantly positive correlation. The loan ratio and non-performing loans have a significantly positive correlation with bank distress in the EU, whereas provisions for loan losses have a significantly negative correlation.

Baklouti et al. (2016) investigated the relationship between governance mechanism, and the financial distress in European Union banking sector for the period of 2005-2011. The study involved a sample of 147 banks spread throughout 18 countries and used concentration of ownership, size of board of directors and accumulated function of CEO and investors protection as a measure of banking governance; the bank specific characteristics was represented by CAMEL in addition to bank size; and, the macroeconomic variables were also included. The bank size was appeared to be a key determinant of financial distress. As far as the CAMEL type variables is concerned, the return on assets coefficient before the crisis has significantly negative association with the likelihood of financial distress, while was not significant for other periods.
Baklouti et al (2016) documented negative relationship between economic growth and distress of banks. This was because as the weaker the economic growth is, the more the businesses & households will reduce their inflows, resulting, in an increase in the probability of financial distress of banks. As far as the banking sector of Sub-Saharan Africa is concerned.
Daumont et al. (2004) had investigated the cause of the 1980s and 1990s banking crisis and manifestation of financial distress. Among sampled countries, the first group of banking crisis, had observed in Ghana, Guinea and Kenya in the early to mid1980s; and, the last banking crisis were happened in the first half of 1990s in Guinea, Kenya, Nigeria, and Uganda. Looking at country level data the nonperforming loans in the study countries far exceeded the threshold of 5–10 percent of total loan. To mention some: the share of nonperforming loans in the banking system reached 50 percent or more in Benin, Cameroon, Côte d'Ivoire, Guinea, Senegal, Tanzania, and Uganda, while it was about 45 percent in Nigeria at end of 1992.

Ephrem (2015) tried to identify the determinants of financial distress based on six commercial banks, using Altman Z-score, which deviates from what it has to be. Based on the OLS regression the study reported that non-performing loan have significantly negative effect on the financial distress of commercial banks. The capital to total loan ratio and interest income to total revenue ratio was also significantly and positively influences financial distress level of private commercial banks. Both findings are consistence with the report of (Sahut and Mill 2011).
Ephrem (2015) reported that non-interest income to non-interest expense had no significant effect on financial distress as measured by Altman Z-score, which contradict with the report of (Asquith, et al., 1994). Besides the study also conclude that size of banks had no significant effect on the level of Ethiopian commercial banks' financial distress.

METHODOLOGY

The target population in this study covers commercial banks that are operating in the country during the sample period 1985-2017. That means, it covers 15 banks which are quoted on the floor of stock exchange. Since the research use secondary data the study will use data sourced from Central Bank of Nigeria for macroeconomic data and from banks included in the sample for bank specific data. In order to increase the credibility and reliability of the research findings the study use audited financial statements (balance sheet and income statement) of each banks. After the data collected and cleared, the panel data were analyzed using descriptive statistics, correlations coefficient and multiple linear regression analysis. Mean values and standard deviations were also used to analyze the general trends of the data from 1985 to 2015 based on the sample of eight commercial banks. Correlation matrix was used to examine the relationship between the dependent and explanatory variables. Multiple linear regression models with ordinary least square (OLS) estimator were conducted using E-view econometric software package, to test the casual relationship between financial distress and explanatory variables.

Model Specification

The regression model to be estimated is presented in the following linear form:

Model I: Monetary Policy Variables

CAR f(MPR, TBR, MS, INTR, FD)

$$CAR = \beta_0 + \beta_1 MPR + \beta_2 TBR + \beta_3 MS + \beta_4 INTR + \beta_5 FD + \mu \qquad 3.2$$

Where:

CAR	=	Capital Adequacy Ratio
MPR	=	Monetary Policy Rate
TBR	=	Treasury Bill Rate
MS	=	Growth of Broad Money Supply
INTR	=	Interest Rate
FD	=	Financial Sector Development
β_0	=	Regression Intercept
β_1 - β_5	=	Coefficient of the independent variables to the dependent variable
μ	=	Error term

Model II: Macroeconomic Variables

CAR f(RGDP, OPE, EXR, INFR, BOP)

$$CAR = \beta_0 + \beta_1 RGDP + \beta_2 OPE + \beta_3 EXR + \beta_4 INFR + \beta_5 BOP + \mu \qquad 3.2$$

Where:

CAR	=	Capital Adequacy Ratio
RGDP	=	Real Gross Domestic Products
OPE	=	Openness of the Economy
EXR	=	Naira Exchange Rate per US Dollar
INFR	=	Inflation Rate
BOP	=	Balance of Payment
β_0	=	Regression Intercept
β_1 - β_5	=	Coefficient of the independent variables to the dependent variable
μ	=	Error term

Model III: Bank Specific Variables

CAR f(NPL, CEXP, MQ, LIQ, EAR)

CAR $= \beta_0 + \beta_1 NPL + \beta_2 CEXP + \beta_3 MQ + \beta_4 LIQ + \beta_5 EAR + \mu$ 3.2

Where:

CAR	=	Capital Adequacy Ratio
NPL	=	Non-Performing Loans
CEXP	=	Credit Expansion
MQ	=	Management Quality
LIQ	=	Liquidity
EAR	=	Earnings
β_0	=	Regression Intercept
β_1 - β_5	=	Coefficient of the independent variables to the dependent variable
μ	=	Error term

Data Analysis Method

The technique used in this study is the Ordinary Least Square (OLS) estimation technique. The test instruments in the OLS are the T-statistics and F-test which were used to test the significance of variables and the overall significance of the regression respectively. Other test instruments that will also be employed are the Durbin Watson test which will be used to test the presence or absence of auto correlation between and among the explanatory variables and the adjusted R square to test the percentage variation of the dependent and the independent variables.

Unit Root Test for Stationarity of Series

This involves testing whether a stochastic process is stationary or non-stationary and the order of integration of the individual series under consideration. Currently, the most accepted method for the testing for unit root is Augmented Dickey-Fuller (ADF) test due to Dickey and Fuller (1979, 1981), and the Phillip-Perron (1988) and Phillips (1987). One advantage of ADF is that it corrects for higher order serial correlation by adding lagged difference terms on the right hand side. It relies on rejecting a null hypothesis of unit root (the series are non-stationary) in favor of the alternative hypotheses of stationarity (Engel and Granger, 1987). The tests are to be conducted with and without a deterministic trend (t) for each of the series. For the purpose of this study, the ADF unit root will be adopted and the general form of ADF test to be estimated by the following regression:

3.1

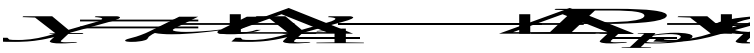
3.2

Where Y is the time series, t is the linear time trend, is the first differential operator, α is the constant, n is the number of lags in the dependent variable and e is the random error term.

Co-integration Test

For the co-integration test, the maximum likelihood test procedure established by Johansen and Juselius (1990) and Johansen (1991) will be used. In the test, if Yt is a vector of n stochastic variable then there

exist a P-lag vector auto regression with Guassian errors. Johansen methodology takes its starting point in the vector auto regression (VAR) of order of P given by;



3.3

Where yt is an (nX1) vector of variables that are integrated of order commonly denoted (1) and is an e_t(nx1) vector of innovations. In order to determine number of co-integration vectors, Johansen (1989) and Johansen and Juselius (1990) suggested two statistic tests, the first one is the trace test (trace). It tests the null hypothesis that the number of distinct co-integrating vector is less than or equal to q against a general unrestricted alternatives q=r the test calculated as follows:

3.4

T is the number of usable observations, and the β_I is the estimated eigenvalue from the matrix. The second statistical test is the maximum eigenvalue test (β max) that is, calculated according to the following formula; max(r, r+1) = T In (1-β_r + 1). The test concerns a test of the null hypothesis that there is r of co-integrating vectors against the alternative that r +1 co-integrating vector.

VAR and Granger Causality Test

The test of cointegration ignores the effect of the past values of one variable on the current value of the other variable. So, the study will try the Granger causality test to examine such possibilities. Granger causality test whether lagged values of one variable predict changes in another, or whether one variable in the system explains the time path of the other variables (Granger, 1969). The test for Granger causality is performed by estimating equations of the following form;

3.5

3.6

Where e_t and μ_t are white noise disturbance terms (normally and independently distributed), m is the number of lags necessary to induce white noise in the residuals, and ECM_{t-1}, is the error correction term from the long-run relationship. x_t is said to Granger-cause $y_{t,}$ if one or more $a_{2,\ i}$(i = 1, ….m) and δ are statistically different from zero. Similarly, y_t is said to Granger cause x_t, if one or more $\beta_{2,i}$(i=1,m) and are statistically different from zero. A feedback or bi—directional causality is said to exist if at least $\alpha_{2,I}$ and $\beta_{2,i}$ (i=1,m) or δ and β are significantly different from zero. If on the other hand, $\alpha_{2,0}$ and $\beta_{2,0}$ are statistically significant.

ANALYSIS AND DISCUSSION OF FINDINGS

Presentation of Results

The following tables reveal the relationship between the dependent variable and the independent variables.

Table 1: Short Term Regression Result: Model I

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FD	0.087093	0.255479	0.340900	0.7359
G_M2	0.526790	0.204184	2.579974	0.0159
MPR	-0.039225	0.459284	-0.085405	0.9326
RINTR	0.505435	0.185723	2.721449	0.0114
TBR	-0.041076	0.343184	-0.119691	0.9056
C	-2.545869	7.312964	-0.348131	0.7305
R-squared	0.537086	Mean dependent var		16.13656
Adjusted R-squared	0.448064	S.D. dependent var		6.425860
S.E. of regression	4.773927	Akaike info criterion		6.131576
Sum squared resid	592.5497	Schwarz criterion		6.406401
Log likelihood	-92.10522	Hannan-Quinn criter.		6.222673
F-statistic	6.033182	Durbin-Watson stat		1.084282
Prob(F-statistic)	0.000781			

Model II

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXR	0.057289	0.009313	6.151510	0.0000
INFR	-0.020755	0.028659	-0.724191	0.4754
PEX	-0.013439	0.029903	-0.449430	0.6568
OPE	0.120983	0.034357	3.521304	0.0016
RGDP	-0.199110	0.166114	-1.198630	0.2415
C	8.718629	2.225071	3.918360	0.0006
R-squared	0.833296	Mean dependent var		16.37500
Adjusted R-squared	0.801237	S.D. dependent var		5.659021
S.E. of regression	2.522950	Akaike info criterion		4.856095
Sum squared resid	165.4972	Schwarz criterion		5.130921
Log likelihood	-71.69753	Hannan-Quinn criter.		4.947192
F-statistic	25.99299	Durbin-Watson stat		1.104194
Prob(F-statistic)	0.000000			

Model III

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CEXP	0.066784	0.053154	1.256420	0.2206
EAR	0.136860	0.042521	3.218651	0.0035
LIQR	-0.183510	0.189827	-0.966719	0.3429
MQ	0.592821	0.133590	4.437622	0.0002
NPL	-0.004643	0.028255	-0.164312	0.8708
C	-2.007439	2.283722	-0.879021	0.3878
R-squared	0.820662	Mean dependent var		16.10323
Adjusted R-squared	0.784795	S.D. dependent var		5.536213
S.E. of regression	2.568263	Akaike info criterion		4.896322
Sum squared resid	164.8993	Schwarz criterion		5.173868
Log likelihood	-69.89299	Hannan-Quinn criter.		4.986795
F-statistic	22.88033	Durbin-Watson stat		1.894061
Prob(F-statistic)	0.000000			

Source: Extract from E-view

From the regression result, the monetary policy variable explained 53.7 percent variation on the dependent variable which is capital adequacy ratio. The macroeconomic variable explains 83.3 percent variation on the dependent variable while the internal variable explained 82.0 percent variation on the dependent variable. The F-statistics and F-probability justifies that the models are statistically significant. The large explained variation proved the presence of serial autocorrelation and spurious regression result. This enable us to test for unit root with the aid of Augmented Dickey Fuller unit root test.

Table 2: Tests of Unit Root: Model I

Variable	ADF	1	5	10	PROB	REMARK	DECISION
CAR	-11.43893	-3.679322	-2.967767	-2.622989	0.0000	Significant	Stationary
FD	-5.537190	-3.679322	-2.967767	-2.622989	0.0001	Significant	Stationary
G_M2	-5.200074	-3.670170	-2.963972	-2.621007	0.0002	Significant	Stationary
MPR	-6.784244	-3.689194	-2.971853	-2.625121	0.0000	Significant	Stationary
RINTR	-7.614525	-3.670170	-2.963972	-2.621007	0.0000	Significant	Stationary
TBR	-8.206775	-3.689194	-2.971853	-2.625121	0.0000	Significant	Stationary
			Model II				
Variable	ADF	1	5	10	PROB	REMARK	DECISION
CAR	-5.543276	-3.699871	-2.976263	-2.627420	0.0000	Significant	Stationary
EXR	-4.496959	-3.679322	-2.967767	-2.622989	0.0001	Significant	Stationary
INFR	-6.101251	-3.689194	-2.971853	-2.625121	0.0002	Significant	Stationary
PEX	-6.814864	-3.711457	-2.981038	-2.629906	0.0000	Significant	Stationary
OPE	-7.272979	-3.670170	-2.963972	-2.621007	0.0000	Significant	Stationary
RGDP	-6.835076	-3.699871	-2.976263	-2.627420	0.0000	Significant	Stationary
			Model III				
Variable	ADF	1	5	10	PROB	REMARK	DECISION
CAR	-5.543276	-3.699871	-2.976263	-2.627420	0.0001	Significant	Stationary
CEXP	-6.586042	-3.689194	-2.971853	-2.625121	0.0000	Significant	Stationary
EAR	-6.035161	-3.670170	-2.963972	-2.621007	0.0000	Significant	Stationary
LIQR	-6.935697	-3.689194	-2.971853	-2.625121	0.0000	Significant	Stationary
MQ	-8.634975	-3.679322	-2.967767	-2.622989	0.0000	Significant	Stationary
NPL	-13.51825	-3.689194	-2.971853	-2.625121	0.0000	Significant	Stationary

Source: Extract from E-view

From the table above, it is evidenced that the ADF statistics found in the three models are greater than the Mackinnon critical value at 1 percent, 5 percent and 10 percent; therefore, we accept that the variables are stationary at first difference and integrated in the order of 1(1). This enables us to test for co-integration using the Johansen co-integration test.

Table 3: Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.858142	121.4540	95.75366	0.0003
At most 1	0.536266	62.86603	69.81889	0.1581
At most 2	0.493309	39.81269	47.85613	0.2293
At most 3	0.359596	19.41707	29.79707	0.4632
At most 4	0.175934	6.047404	15.49471	0.6900
At most 5	0.008044	0.242283	3.841466	0.6226

Unrestricted Co-integration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.858142	58.58793	40.07757	0.0002
At most 1	0.536266	23.05334	33.87687	0.5264

At most 2	0.493309	20.39562	27.58434	0.3144
At most 3	0.359596	13.36967	21.13162	0.4188
At most 4	0.175934	5.805122	14.26460	0.6384
At most 5	0.008044	0.242283	3.841466	0.6226

Model II

Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.771537	130.0881	95.75366	0.0000
At most 1 *	0.671737	85.79666	69.81889	0.0016
At most 2 *	0.579554	52.37841	47.85613	0.0177
At most 3	0.356170	26.38521	29.79707	0.1176
At most 4	0.295119	13.17561	15.49471	0.1085
At most 5	0.085575	2.683806	3.841466	0.1014

Unrestricted Co-integration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.771537	44.29140	40.07757	0.0158
At most 1	0.671737	33.41825	33.87687	0.0566
At most 2	0.579554	25.99320	27.58434	0.0788
At most 3	0.356170	13.20960	21.13162	0.4332
At most 4	0.295119	10.49180	14.26460	0.1816
At most 5	0.085575	2.683806	3.841466	0.1014

Model III

Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.744128	112.9307	95.75366	0.0020
At most 1 *	0.689721	73.40146	69.81889	0.0252
At most 2	0.411335	39.46329	47.85613	0.2423
At most 3	0.377454	24.09624	29.79707	0.1964
At most 4	0.268091	10.35202	15.49471	0.2546
At most 5	0.043875	1.301145	3.841466	0.2540

Unrestricted Co-integration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None	0.744128	39.52927	40.07757	0.0575
At most 1 *	0.689721	33.93817	33.87687	0.0492
At most 2	0.411335	15.36705	27.58434	0.7187
At most 3	0.377454	13.74422	21.13162	0.3864
At most 4	0.268091	9.050876	14.26460	0.2819
At most 5	0.043875	1.301145	3.841466	0.2540

Source: Extract from E-view

The co-integration test presented above found that there is no co-integrating equation in model I, there are two co-integrating equation in mode II from the trace statistics, there is no co-integrating equation from the maximum Eigen statistics while model III found one co-integrating equation from the trace statistics and not co-integrating equation from the maximum Eigen. The study conclude that there is long run

relationship between the dependent and the independent variable in model II and III but no long run relationship in model

Table 4: Normalized Co-integrating Equation

CAR	FD	G_M2	MPR	RINTR	TBR
1.000000	-1.474516	1.097218	1.034728	-4.037644	3.490035
	(0.32156)	(0.37065)	(0.57501)	(0.27939)	(0.43550)
CAR	EXR	INFR	OPE	PEX	RGDP
1.000000	-0.085669	-0.156530	0.018744	-0.068154	-0.966056
	(0.01305)	(0.03423)	(0.04148)	(0.03379)	(0.22987)
CAR	CEXP	EAR	LIQR	MQ	NPL
1.000000	-2.196921	-0.528341	8.244772	1.122020	-0.846370
	(0.50272)	(0.19401)	(1.81156)	(0.66055)	(0.14763)

Source: Extract from E-view

From model I, financial sector development and real interest rate have negative long run relationship with the dependent variable while growth of money supply, monetary policy rate and treasury bill rate have positive long run relationship. Model II found that exchange rate, inflation rate and public expenditure have negative long run relationship while openness of the economy have negative long run relationship with the dependent variable. Model III found that credit expansion, earnings and non-performing loans have negative long run relationship while liquidity and management policy have positive long run relationship.

Table 5: Error Correction Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.462429	0.901428	1.622347	0.1307
D(CAR(-1))	-0.185558	0.425122	-0.436481	0.6702
D(CAR(-2))	0.797117	0.500218	1.593541	0.1370
D(FD(-1))	0.737640	0.711491	1.036753	0.3203
D(FD(-3))	-0.303691	0.221709	-1.369770	0.1958
D(G_M2(-1))	-0.226240	0.222258	-1.017916	0.3288
D(G_M2(-2))	-0.705705	0.684822	-1.030493	0.3231
D(G_M2(-3))	0.063193	0.233287	0.270881	0.7911
D(MPR(-1))	0.370177	0.409841	0.903222	0.3842
D(MPR(-2))	0.387481	0.477707	0.811128	0.4331
D(MPR(-3))	-0.066257	0.361654	-0.183205	0.8577
D(TBR(-1))	-0.188112	0.246869	-0.761992	0.4608
D(RINTR(-1))	-0.546528	0.449381	-1.216179	0.2473
D(RINTR(-2))	-0.301253	0.357013	-0.843815	0.4153
D(RINTR(-3))	-0.420307	0.293974	-1.429745	0.1783
ECM(-1)	-0.512782	0.402341	-1.274495	0.2266

R-squared	0.335330	Mean dependent var	1.041786
Adjusted R-squared	-0.495506	S.D. dependent var	2.867390
S.E. of regression	3.506557	Akaike info criterion	5.642706
Sum squared resid	147.5513	Schwarz criterion	6.403965
Log likelihood	-62.99788	Hannan-Quinn criter.	5.875430
F-statistic	0.403606	Durbin-Watson stat	1.033954
Prob(F-statistic)	0.950173		

Model II

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.410226	0.391822	1.046970	0.3129
D(CAR(-1))	0.235704	0.290884	0.810304	0.4313
D(EXR(-2))	0.029738	0.030779	0.966189	0.3503

D(EXR(-3))	-0.009451	0.026756	-0.353216	0.7292
D(INFR(-1))	0.064918	0.021854	2.970565	0.0101
D(INFR(-2))	-0.073620	0.023197	-3.173742	0.0068
D(INFR(-3))	0.045269	0.024135	1.875665	0.0817
D(OPE(-1))	-0.013030	0.044398	-0.293478	0.7735
D(OPE(-2))	-0.038082	0.037526	-1.014825	0.3274
D(PEX(-1))	0.005259	0.022395	0.234823	0.8177
D(PEX(-2))	0.029862	0.025033	1.192928	0.2527
D(PEX(-3))	0.047808	0.026068	1.834004	0.0880
D(RGDP(-1))	0.077736	0.112186	0.692919	0.4997
ECM(-1)	-0.189120	0.203823	-0.927864	0.3692
R-squared	0.757470	Mean dependent var		0.560714
Adjusted R-squared	0.532263	S.D. dependent var		2.026919
S.E. of regression	1.386235	Akaike info criterion		3.797913
Sum squared resid	26.90308	Schwarz criterion		4.464016
Log likelihood	-39.17079	Hannan-Quinn criter.		4.001547
F-statistic	3.363447	Durbin-Watson stat		2.272790
Prob(F-statistic)	0.015907			

Model III

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.467150	3.463008	1.289962	0.2214
D(CAR(-1))	-0.074420	0.416322	-0.178757	0.8611
D(CAR(-2))	0.116181	0.360909	0.321911	0.7531
D(CAR(-3))	-0.068242	0.359787	-0.189674	0.8527
D(CEXP(-1))	0.077013	0.183885	0.418810	0.6828
D(CEXP(-2))	0.083270	0.106499	0.781885	0.4494
D(CEXP(-3))	0.003069	0.072666	0.042230	0.9670
D(EAR(-1))	-0.095871	0.066178	-1.448688	0.1730
EAR(-2)	-0.093917	0.052522	-1.788140	0.0990
EAR(-3)	0.047626	0.047016	1.012981	0.3311
D(LIQR(-1))	-0.091046	0.264281	-0.344505	0.7364
D(LIQR(-2))	-0.250546	0.663427	-0.377654	0.7123
D(LIQR(-3))	-0.444214	0.491771	-0.903294	0.3841
NPL	-0.013702	0.028032	-0.488786	0.6338
ECM(-1)	-0.544606	0.377338	-1.443285	0.1745
R-squared	0.565076	Mean dependent var		0.566667
Adjusted R-squared	0.057665	S.D. dependent var		2.065281
S.E. of regression	2.004849	Akaike info criterion		4.529196
Sum squared resid	48.23304	Schwarz criterion		5.249105
Log likelihood	-46.14414	Hannan-Quinn criter.		4.743262
F-statistic	1.113646	Durbin-Watson stat		2.161953
Prob(F-statistic)	0.430514			

Source: Extract from E-view

The error correction found that the independent variables can adjust at 51.2 percent annual speed. Model II found that the independent variable can adjust at 18m percent speed annually while model III founds that the variables can adjust at the speed of 54.4 percent. However, the coefficient of the variable at various lags explain the nature of relationship that exists between the dependent and the independent variable as formulated in the regression model.

Table 6: Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
FD does not Granger Cause CAR	30	0.30784	0.7378
CAR does not Granger Cause FD		1.55836	0.2302
G_M2 does not Granger Cause CAR	30	0.14112	0.8691
CAR does not Granger Cause G_M2		2.32744	0.1183
MPR does not Granger Cause CAR	30	0.12874	0.8798
CAR does not Granger Cause MPR		2.84935	0.0768
RINTR does not Granger Cause CAR	30	0.20314	0.8175
CAR does not Granger Cause RINTR		2.52168	0.1006
TBR does not Granger Cause CAR	30	0.01804	0.9821
CAR does not Granger Cause TBR		0.29024	0.7506
Null Hypothesis:	Obs	F-Statistic	Prob.
EXR does not Granger Cause CAR	30	3.91921	0.0331
CAR does not Granger Cause EXR		1.26612	0.2994
INFR does not Granger Cause CAR	30	1.45281	0.2530
CAR does not Granger Cause INFR		2.65627	0.0899
OPE does not Granger Cause CAR	30	0.53150	0.5942
CAR does not Granger Cause OPE		2.46743	0.1052
PEX does not Granger Cause CAR	30	0.87970	0.4274
CAR does not Granger Cause PEX		3.18018	0.0588
RGDP does not Granger Cause CAR	30	3.35826	0.0511
CAR does not Granger Cause RGDP		1.26618	0.2994
Null Hypothesis:	Obs	F-Statistic	Prob.
CEXP does not Granger Cause CAR	29	1.16450	0.3291
CAR does not Granger Cause CEXP		0.15761	0.8551
EAR does not Granger Cause CAR	30	0.49214	0.6171
CAR does not Granger Cause EAR		4.48598	0.0216
LIQR does not Granger Cause CAR	29	0.04994	0.9514
CAR does not Granger Cause LIQR		1.75749	0.1940
MQ does not Granger Cause CAR	29	4.32517	0.0249
CAR does not Granger Cause MQ		0.75404	0.4813
NPL does not Granger Cause CAR	29	0.86476	0.4339
CAR does not Granger Cause NPL		0.40865	0.6691

Source: Extract from E-view

From model I, the study found no causal relationship among the variables except a univariate relationship from CAR to monetary policy rate. From model II, the study found a unvariate causality from exchange rate to capital adequacy ratio, capital adequacy ratio to inflation rate, capital adequacy ratio to public expenditure and real gross domestic products to capital adequacy ratio. From model III, there is a univariate causality from capital adequacy to earnings and from management quality to capital adequacy ratio.

DISCUSSION OF FINDINGS

Factors that determines commercial banks distress is critical issue among regulators among regulators. Macroeconomic variables, monetary policy volatility and internal variable have great extent to which it determines soundness of deposit money banks. From the findings of this study on hypothesis one, the monetary policy variables examined in the study can explain 53.7 percent variation on the dependent variable which is proxy by capital adequacy, the beta coefficient variables found that financial sector

development have positive but insignificant effect on determining deposit money bank distress in Nigeria. Growth of broad money supply has positive and significant impact in determining bank distress in Nigeria. Monetary policy rate and Treasury bill rate have negative impact and statistically not significant in determining bank distress while interest rate is positive3 and significant in determining bank distress in Nigeria. the positive impact of the variables confirm our a-priori expectation of the result and the objective of monetary policy which is to achieve financial sector stability as contained in relevant Central Bank of Nigerian Act of 1959 as amended and Central Bank of Nigeria Act of 2007.

Findings from the macroeconomic variables as determinants of commercial bank distress found that exchange rate and openness of the economy have positive impact as factors that determine bank distress in. Nigeria while inflation, public expenditure and real gross domestic products have negative impact as factors that determine bank distress in Nigeria. The implication is that volatility of exchange rate and increase level of the openness of the economy can lead to bank distress. This findings confirm the opinion that Nigerian dependent in foreign economy can result in macroeconomic instability, it also confirm the negative impact of the global financial crises on the Nigerian banking industry, however, the negative impact of inflation rate, public expenditure implies that volatility in this variables can affect negatively Nigerian banking distress.

The result in model III indicates that the independent variables explains 82 percent variation on the dependent variable, this implies that significant proportion of variation in bank distress can be explained by variations on the internal variables in factors that determines commercial banks distress in Nigeria. However, the beta coefficient of the variables found that liquidity and non-performing loans have negative impact as factors that determine banking system distress while credit expansion, earnings and management quality are internal variables that positively relates to banking system distress in Nigeria. The negative impact of non- performing loans confirms our a-priori expectation while the negative impact of liquidity is contrary to our a-priori expectation.

CONCLUSION

This study formulated three models to examine factors that determine deposit money banks in Nigeria. Three models were formulated to examine internal and external factors that determine deposit money bank distress. From the findings of the study in model I who examined monetary policy variables as determinants of banks distress, the result found that the independent variables examined in the model explain 53.7 percent variation on the dependent variable. Model II which examines macroeconomic variables as determinants of bank distress found that the independent variables can explain 83.3 percent while the internal variables can explain 82.0 percent variation on the dependent variable. The models are statistically significant from the result of F-statistics and F-probability. Therefore, this study concludes that macroeconomic variables, monetary policy variables and bank internal variables have strong impact in determining bank distress in Nigeria.

RECOMMENDATIONS

1. The monetary policy environment should be properly managed and the regulatory authorities should harmonize the operation of monetary policy with the objective of achieving stable banking system for effective transmission of monetary policy and maximize shareholders' wealth.
2. The management of deposit money banks should formulate policies and device strategies of managing monetary policy variables such as monetary policy rate and Treasury bill rate to avert the negative impact of the variables in determining bank stability.
3. The macroeconomic environment and its operational objectives should be directed towards achieving stable banking system in Nigeria.
4. Deposit money banks should ensure sound credit management department to avoid the negative impact of nonperforming loans on bank distress.

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