ASSESSMENT OF THE EFFECT OF FRAUD ON THE FINANCIAL PERFORMANCE OF NIGERIAN BANKS

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Abstract

The wave of fraud in Nigerian banks has continued to be on the rise. There were 20,768 reported cases of fraud and forgery (attempted and successful) valued at ₦19.77 billion in 2018, compared with 16,762 cases, involving ₦5.52 billion and US$ 0.12 million in the period of 2017. The amount lost to fraud and forgeries in the first six months of 2018 total ₦12.06 billion, compared with the ₦0.78 billion and US$0.03 million suffered in the first half of the year 2017. This study therefore, sought to investigate the effect of fraud on the financial performance of banks in Nigeria. The secondary data on Total Amount of Bank Fraud (TABF), Percent of Expected Loss to Amount of Bank Fraud (BFRD), Foreign Exchange Malpractices (FEM), Return on Assets (ROA) and Return on Equity (ROE) spanning the period 2008-2018 utilized in the study were extracted from the CBN and the NDIC Statistical Bulletins. To determine the effect of fraud on financial performance, the multivariate regression model was employed. However, the analyses were done via windows software – STATA 13.0 version. The findings showed that TABF and FEM significantly affects the reported figures for RETOA and RETOE. However, BFRD does not have effect on the RETOA and RETOE of banks in Nigeria. Thus, the study concludes that fraud significantly and negatively influences financial performance of banks in Nigeria. Based on the findings, the study recommends among others, that in order to improve on the Return on Asset (ROA) and Return on Equity (ROE), Nigerian banks should strengthen and institute effective and efficient internal control in recording, processing and authorization of business financial transactions that would mitigate the incidence of fraud.

Keywords: Bank Fraud, Expected Loss, Foreign Exchange Malpractice, Return On Asset, Return On Equity, Nigerian Banks.

JEL classification: G2, G21, M4, M41, M42.

1. INTRODUCTION

No economic entity can survive amidst fraud in its operation. Fraud has been identified as one of the main causes of underdevelopment of most financial

institution worldwide. The banking industry has always been associated with some degree of fraud. However, this should not be surprising in view of the fact that money is mainly the trade mark of the banking industry. In Nigeria, bankers are particularly concerned because, fraud penetration is on the increase and continues to acquire greater dimensions. More importantly, the rate of fraud and forgeries in the overall banking system has negatively affected the financial sector of the economy. Fraud shakes the foundation and credibility of most banks in Nigeria resulting to some of the bank being distressed.

Fraud is a global phenomenon that has been in existence for long and it increases day by day (Inaya and Isito, 2016). It is a big business because, of the magnitude and degree of the importance of the amount that could be involved. According to Abdulrasheed, Babaita and Yinusa (2012), fraud is a decent or trickery, deliberately practiced in other to gain some advantage dishonestly. It encompasses embezzlement, theft or any attempt to steal or unlawful obtain, misuse or harm the assets of bank (Nweze, 2008). Fraud is a financial crime which covers offences which are securities related and involves the movement, transfer, a use of monetary instrument in circumstance which renders such acts unlawful.

The banking sector losses billions of naira to fraud yearly which lead to distress in many banks in the 1990's despite, the concerted effort by individuals, banks management and the industry stakeholders. This is however, not surprising when it is realized that our society after the civil war has been one where high premium is placed on most people who gets rich overnight by crooked means. This believes have made many individuals to find their way to the banks with the hope that they can get as much as possible from the banks through fraud. The Central Bank of Nigeria (CBN), Economic and Financial Crime Commission (EFCC) and the Independent Corrupt Practices Commission (ICPC) has made various efforts to reduce or eliminate frauds in banks but desired results have not been achieved. Fraud has affected the trust of depositors in Deposit Money Banks (DMBs) and resulted in their decision to keep away substantial part of their money from banks (CBN, 2015).

The growth of fraud in Nigerian banks has been astounding. It is a cankerworm that has eaten deep into the fabric in the financial sector. Many banks have collapsed due to fraud that has so become prominent in the system. There has been increase in operational cost of Nigerian banks as a result of fraud and their inability to manage their internal control system effectively and efficiently has made the detection and prevention of fraud very difficult. The resultant effect is loss of customers' deposit by the banks and negative signals sent to the public as it erodes confidence reposed on the banks.

Fraud in the banking industry has been believed to have influenced the level of bank performances both at the micro and macro levels of the economy (Adewumi, 2007). It is one of the major factors that lead to the collapse of many banks in Nigeria in the nineteen century as well as in the early twentieth century that led to the buying off of some banks and subsequent implementation of the mandatory recapitalization exercise of twenty-five billion naira (₦25 billion)

minimum by the Central Bank of Nigeria in 2004 to reposition the mind of depositors towards banking without fear of repetition of collapse. The banking industry losses billion of naira to fraud yearly which lead to distress in many banks despite, the concerted effort by individuals, banks management and the industry stakeholders.

Fraud cases in Nigerian banks have continued to be on the rise and these are traceable to the lapses in internal control system in banks and poor control environment. Nwankwo (2015), asserted that the increase rate of fraud in the financial institutions, if not arrested might pose certain threats to the stability and the survival of the financial institution and the performance of the industry as a whole. There were 20,768 reported cases of fraud and forgery (attempted and successful) valued at ₦19.77 billion in 2018, compared with 16,762 cases, involving ₦5.52 billion and US$ 0.12 million in the period of 2017. Whereas, the amount lost to fraud and forgeries in the first six months of 2018 total ₦12.06 billion, compared with the ₦0.78 billion and US$0.03 million suffered in the first half of the year 2017 (CBN, 2018). These reported fraud and forgery incidences were perpetrated by both bank staff and non-bank culprits. The cases involved fraudulent ATM withdrawals, draft defalcation, illegal funds transfer, pilfering of cash, stealing, suppression and conversion of customers' deposits, among others. This is just as the banking sector regulator revealed that as of June 2018, three commercial banks did not have the prescribed minimum liquidity ratio of thirty per cent (30%).

Several studies have been carried out on the effect of fraud on the Nigerian banking industry. Though, most of the studies provide reasonable results which are in line with a prior expectation, the importance of the examination and re-examination of this issue cannot be overemphasized given the fact that the wave of fraud in Nigerian banks has continued to be on the rise despite, the concerted effort by individuals, banks management and the industry stakeholders. The broad objective of this study therefore, is to examine the effect of fraud on the financial performance of Deposit Money Banks (DMBs) in Nigeria. However, the specific objectives are:

(a) To determine the extent to which foreign exchange malpractice affects the return on asset and return on equity of banks in Nigeria.

(b) To ascertain the extent to which total amount of bank fraud affects the return on asset and return on equity of banks in Nigeria.

(c) To examine the extent to which the percent of expected loss to amount of bank fraud affects the return on asset and return on equity of banks in Nigeria.

In order at achieve the objectives of the study, the following hypotheses were formulated and tested in their null form(s):

(a) Foreign exchange malpractice does not significantly affect the return on asset and return on equity of banks in Nigeria.

(b) Total amount of bank fraud does not significantly affect the return on asset and return on equity of banks in Nigeria.
(c) The percent of expected loss to amount of bank fraud does not significantly affects the return on asset and return on equity of banks in Nigeria.

2. REVIEW OF RELATED LITERATURES

2.1. THEORETICAL FRAMEWORK

Several theories have been used to explain fraud among countries. These include the theory of concealment, job dissatisfaction theory, cultural transmission theory, theory of fraud diamond, theory of differential association and theory of fraud triangle among others. However, the theoretical framework of this study is anchored on the fraud triangle theory. The theories are hereby discussed below:

2.1.1. Theory of Concealment

This theory is an embodiment of the classical Fraud Triangle Theory advocated by Donald Cressey in 1973. It is also known as the "Elements of Fraud". According to Owolabi (2010), concealment is an important ingredient of most systematic fraud. It involves a manipulation of an accounting record or misrepresentation of a physical, personal or commercial reality. The theory explains the fact that the culprits deliberately introduce confusion during or after the act to assist in its omission. Greed motivates this type of fraud to exploit any opportunities available. Self-preservation is crucial when it comes to concealment. The culprit usually tries to hide the loss and the evidence which indicates that he is responsible for it. He (the culprit) will strive to conceal the fraud in the best way available to him and may adopt optimum concealment course.

2.1.2. Job Dissatisfaction Theory

Robert Hoppock developed the job dissatisfaction theory in 1935. Hollinger and Clarke (1983) affirmed that dissatisfaction motivates employees to commit fraud. When employees perceive that their jobs or working conditions are unfair, they are more likely to justify and commit fraud (Wells, 2005). However, this theory is difficult to prove due to the relative lack of information regarding employee theft in general; while it can be studied in its particulars, it is difficult to identify in general due to lack of reliable and widespread information about employee theft (Mustaie and Tewksbury, 2002). Furthermore, this model suffers from the same issues regarding motivation and rationalization as the Fraud Triangle theory.

2.1.3. Cultural Transmission Theory

Shaw and Mckay in 1972 propounded the Cultural Transmission Theory. This theory is similar to the Differential Association Theory put forward by Edwin Sutherland in 1950, where he suggested that criminal behaviour is learned. However, it differs from the Differential Association theory in that it presupposes the existence of a specific criminal culture, which is associated with people living

in a specific area or within a specific ethnic group (Costello, 1997). The Cultural Transmission Theory assumes that criminals have been transmitted into a culture of crime by being socialized to accept specific values that condone crime. Therefore, implying that fraudulent behaviour in accounting is learned. These sociological theories of crime emerged in the early 20th Century in order to explain the emergence of criminal groups in specific regions of a city, ethnic group, or class (Costello, 1997). However, this theory is much criticized due to its assumptions.

2.1.4. Theory of Fraud Diamond

According to Wolfe and Hermerson (2004), in the theory of fraud diamond, an individual's capability, personality traits and abilities can play a major role in determining whether fraud may occur. While opportunities can open the doorways to fraud, incentive and rationalization will attract people to it, but such an individual must have the capability to recognize the open doorway as an opportunity and should be able to take an undue advantage of the identified loopholes.

2.1.5. Theory of Differential Association

Differential Association theory was propounded by Edwin Sutherland in 1950. The theory states that crime is learned as we learn any other subject or trade and that learning of criminal behavior occur with other persons in a process of communication. Fraud costs are passed on to society through criminal activities funded by the fraudulent gains. Fraud losses pose a significant problem to many industries including banking and finance. Thus, fraud losses impact every business enterprises

2.1.6. Theory of Fraud Triangle

The classical theory of fraud triangle was developed by Donald Cressey in 1973. Cressey (1973) proclaimed that fraud is likely to occur if combinations of these three factors exist - Pressure (Motivation), Opportunity and rationalization. Pressure is the motivation of the person to commit fraud, usually a financial burden. He stated that every fraud perpetrator is influenced by pressure which may be worked or personal related sources and this serves as a motivating factor for the individual to commit the fraud with a view to meeting the expectation. Opportunity refers to the method by which the crime could be committed. It is an essential element in the fraud triangle because, a potential fraudster may have the desire to commit fraud but without the perceived opportunity fraud may not occur. Rationalization on the other hand, describes how the individual rationalizes in their own mind, committing the crime. It assists to justify a crime in a way that makes it suitable in the mind of the fraudster. It may arise from an employee’s feeling of dissatisfactions in a work place, poor remuneration, lack of recognition, etc. According to Cressey (1973), trusted persons become trust violators when they conceive themselves as having a financial problem which is non-shareable, and are aware this problem can be secretly resolved by violation of the position of financial trust, and are able to apply to their own conduct in that situation which enable them

to adjust their conceptions of themselves as trusted persons with their conceptions of themselves as users of the entrusted funds or property.

2.2. EMPIRICAL REVIEW

Several studies have been carried out by various researchers in Nigeria and outside Nigeria on the effect of fraud on the financial performance of banks. For instance, Ogbeide (2018) empirically investigated the effect of fraud on the financial performance of banks in Nigeria using secondary data covering the 1993-2016. Exploratory and longitudinal research design was adopted in the study. The data on return on equity (ROE), commercial bank investment, total number of cases of fraud, total amount of fraud and actual/expected loss due to fraud were generated from the annual reports of Nigerian Deposit Insurance Corporation (NDIC) various issues. The Johansen co-integration and error correction mechanism was employed in the analysis of the data. Findings showed that fraud had significant negative influence on financial performance of banks in Nigeria.

Ibanichuka and Oko (2019) evaluated the relationship between electronic frauds and financial performance of Deposit Money Banks (DMBs) in Nigeria using secondary data on point of sale fraud and return on investment. The ex-post facto research design was adopted in the study. The data spanning the period 2013-2017 were extracted from the Nigerian Electronic Fraud Forum, Nigerian Deposit Insurance Corporation (NDIC) and Central Bank of Nigeria (CBN). The data collected were analyzed using basic descriptive, Pearson Product Moment Correlation and multivariate regression method. Findings revealed that there is negative and significant relationship between electronic fraud and financial performance measured by return on investment (ROI).

Popoola, Fakunle and Omole (2018) assessed the effect of bank fraud on the Nigerian economy using primary and secondary data. The secondary data on bank distress, Gross Domestic Product (GDP), unemployment rate and per capital income covering the period 2007-2016 were derived from the audited annual reports of the banks, Nigerian Deposit Insurance Corporation (NDIC), Central Bank of Nigeria (CBN) and National Bureau of Statistics. Multiple linear regression analysis method was employed in the analysis of the data. The results showed that bank fraud had a significant and negative effect on the Nigerian economy.

Adediran and Olugbenga (2010) investigated the impact of frauds on banks' performance in Nigeria using secondary data on reported cases of fraud, total amount of fraud, actual/expected loss due to fraud and return on investment. The secondary data spanning the period 2000-2007 were sourced from the annual reports and accounts of Nigerian Deposit Insurance Corporation (NDIC) and Financial Institutions Training Centre (FITC). The data analysis was performed using Ordinary Least Square (OLS) regression method. The results showed that total cases of fraud reported, amount involved in frauds and actual/expected loss due to fraud had significant inverse relationship with the banks' return on investment.

Inaya and Isito (2016) using secondary data of fraud, actual/expected loss and return on equity investigated the social impact of fraud on the Nigerian banking industry. The ex-post facto research design was adopted in the study. The used in the study spanning the period 1990-2014 were extracted from the annual reports and accounts of the Deposit Money Banks (DMBs) and the Nigerian Deposit Insurance Corporation (NDIC). The Ordinary Least Square (OLS) statistical tool was employed in the analysis of the collected data via the Statistical Package for Social Sciences (SPSS, 20.0). Findings indicated that fraud has a significant and negative social impact on the Nigerian banking industry.

Muoghalu, Okonkwo and Ananwude (2018) empirically investigated the effect of electronic banking related fraud on the financial performance of Nigerian banks. Ex-post facto research design was employed in the study. Secondary data on fraud, return on asset, return on equity, interest income and non-interest income covering the period 2013-2016 utilized in the study were obtained from Central Bank of Nigeria (CBN). The Ordinary Least Square (OLS) regression analysis and Granger Causality analysis technique was adopted in the analysis of the data collected. The results showed that electronic banking related fraud on Automated Teller Machines (ATM), mobile banking, point of sale terminals and web had no effect on return on asset, return on equity and interest income of banks in Nigeria.

Olongo (2013) examined the effect of financial fraud and liquidity on the financial performance of Deposit Money Banks in Kenya using secondary data on annual fraud loss, liquidity ratios, annual fraud loss and return on asset. The secondary data covering the period 2007-2012 were derived from the Nigerian Stock Exchange and Central Bank of Kenya (CBK) websites and Banking Fraud Investigation Department (BFID). Multiple regression analysis method was utilized in the analysis of the data collected. Findings revealed that financial fraud loss and liquidity ratios had significant and positive influence on the financial performance of commercial banks in Kenya for the period under review.

Gitau (2016) assessed the effect of financial fraud on the performance of commercial banks in Kenya using secondary data. Descriptive research design was adopted in the study. The primary data used in the study was obtained by means of self-administered questionnaires, while the secondary data (liquidity ratios, return on asset and fraud loss) were obtained from the audited annual reports of the banks and the Central Bank of Kenya (CBK). The data collected was analyzed by means of correlation and regression analysis method via Statistical Package for Social Sciences (SPSS). The results showed that liquidity ratios and fraud loss had significant and positive influence on the financial performance measured by the return on asset (ROA).

Kanu and Idume (2016) examined the relationship between insecurity, fraud and performance of commercial banks in Nigeria using secondary data on bank insecurity, fraud and earnings before tax. The data spanning the period 1991-2013 were sourced from the annual reports of Nigerian Deposit Insurance Corporation (NDIC). Multiple regression analysis method was utilized in the data analysis, Findings revealed an inverse relationship between expected losses on

insecurity and fraud. However, the results indicated a significant and positive relationship between fraud and earnings of Deposit Money Banks (DMBs) in Nigeria.

Kolapo and Olaniyan (2018) using secondary data on fraud cases, amount lost to fraud and number of staff involved in fraud and bank deposit empirically investigated the impact of fraud on the performance of Nigerian banks. The data utilized in the study spanning the period 1994-2015 were sourced from the annual reports of Nigerian Deposit Insurance Corporation (NDIC) and Central Bank of Nigeria (CBN) Statistical Bulletin. Generalized Method of Moments (GCM) estimation was adopted in the analysis of the collected data. The results of the study revealed that amount involved in fraud cases, amount lost to fraud and number of staff involved in fraud had negative and significant effect on the performance of Nigerian banks.

Muritala, Ijaiya and Adeniran (2017) explored the impact of fraud on bank performance in Nigeria using quarterly data on return on asset, number of staff, number of fraud cases and total amount involved. The secondary data spanning the period 2000-2013 were generated from Nigerian Deposit Insurance Corporation (NDIC) and Central Bank of Nigeria (CBN) Statistical Bulletin. The Vector Error correction Model was utilized in the analysis of the data collected. Findings revealed that the number of staff involved in fraud had a significant and positive effect on the return on asset. Whereas, the fraud perpetrated and the amount involved in fraud perpetration had negative impact on bank performance in Nigeria.

Udeh and Ugwu (2018) empirically investigated fraud in the Nigerian banking industry using secondary data on fraud, bank profit, bank assets and bank deposits. The data covering the period 2006-2015 were sourced from the annual reports of Nigerian Deposit Insurance Corporation (NDIC). The descriptive analysis and Ordinary Least Square (OLS) method of regression analysis were utilized in the analysis of the data collected. The results showed that fraud has a negative and insignificant relationship with bank profit among others.

The empirical literature provides consistent evidence that fraud had significant and negative impact on the banking industry. Though, most of the studies provide reasonable results which are in line with a prior expectation. However, the importance of examination and re-examination of this issue cannot be overemphasized given the fact that the wave of fraud in Nigerian banks has continued to be on the rise despite, the concerted effort by individuals, banks management and the industry stakeholders. This study is further contributing to knowledge having introduced two variables: Foreign Exchange Malpractices (FEM) and Percent of expected loss to amount of bank fraud involved, which has not been simultaneously examined by any previous studies along with fraud in view of their effect on the performance of banks.

3. METHODOLOGY

In this study, ex-post facto research design was adopted. This design was adopted since it seeks to establish the factors that are connected with certain occurrence or behaviour type by analyzing past events of already existing conditions. As such, the researchers has no control over certain factors or variables as the events already exist and can neither be manipulated nor changed. The population of the study is the totality of all listed Deposit Money Banks (DMBs) in Nigeria. There are twenty-one (21) Deposit Money Banks listed on the Nigerian Stock Exchange as at December 31, 2018 (CBN, 2018). Thus, the twenty-one (21) listed Deposit Money Banks constitutes the sample size of this study as there was no need for sampling. Secondary data were used in the study. These secondary data include aggregate quarterly data obtained from the Central Bank of Nigeria (CBN) and the Nigeria Deposit Insurance Corporation (NDIC) Statistical Bulletins spanning the period of 11years (2008-2018). The data comprised of Total Amount of Bank Fraud (TABF), Percentage of Expected Loss to Amount of Bank Fraud (BFRD), Foreign Exchange Malpractices (FEM), Return on Assets (ROA) and Return on Equity (ROE) (see Table 1). Since the data for FEM, BFRD, ROA and ROE are expressed in ratios, data for TABF was logged to avoid scaling problem. In order to determine the effect of fraud on financial performance, a multivariate regression statistical tool was adopted in the analysis of data via econometric package: STATA 13.0 version.

Table 1. *Values of the Variables for the Period Under Review*

YEAR	LogTAB	BFRD (%)	ROA (%)	ROE (%)	FEM (%)
Q12008	3.64	0.8772	-1.15	0.2126	2.17
Q22008	3.74	0.8772	-1.15	0.2126	1.22
Q32008	3.82	0.7644	-1.15	0.2126	2.36
Q42008	3.88	0.6517	-1.15	0.2126	1.88
Q12009a	3.43	0.5389	-9.28	0.0687	1.18
Q22009b	4.35	0.4772	-9.28	0.0687	1.13
Q12009a	3.62	0.1908	-9.28	0.0687	1.47
Q22009b	4.09	0.2927	-9.28	0.0687	0.79
Q12010a	3.67	0.3762	3.91	0.0115	1.46
Q22010b	3.62	0.6579	3.91	0.0115	2.02
Q32010	3.92	0.7757	3.91	0.0115	0.90
Q42010	3.61	0.1743	3.91	0.0115	1.33
Q12011	3.77	0.3741	-0.04	-0.0437	1.21
Q22011	3.79	0.3253	-0.04	-0.0437	1.88
Q32011	3.81	0.2765	-0.04	-0.0437	2.55
Q42011	3.82	0.2277	-0.04	-0.0437	3.22
Q12012	3.45	0.1789	2.62	0.215	3.89
Q22012	4.01	0.1301	2.62	0.215	4.56
Q32012	3.31	0.0813	2.62	0.215	5.23
Q42012	3.47	0.0325	2.62	0.215	5.90
Q12013	3.89	0.0163	2.33	0.1791	5.57

Q22013	3.69	0.0651	2.33	0.1791	5.24
Q32013	3.58	0.1139	2.33	0.1791	4.91
Q42013	3.72	0.1626	2.33	0.1791	4.58
Q12014	3.55	0.2114	2.29	0.1422	4.25
Q22014	4.11	0.2602	2.29	0.1422	3.92
Q32014	3.60	0.309	2.29	0.1422	3.59
Q42014	3.71	0.3578	2.29	0.1422	3.26
Q12015	3.73	0.4066	2.25	0.1409	5.93
Q22015	3.69	0.4554	2.25	0.1409	5.60
Q32015	3.66	0.5042	2.25	0.1409	5.27
Q42015	3.61	0.553	2.25	0.1409	4.94
Q12016	3.57	0.6018	2.21	0.1216	4.61
Q22016	3.52	0.6505	2.21	0.1216	4.28
Q32016	3.46	0.6993	2.21	0.1216	3.95
Q42016	3.39	0.7481	2.21	0.1216	3.62
Q12017	3.31	0.7969	2.19	0.1139	3.29
Q22017	3.21	0.8457	2.19	0.1100	2.96
Q32017	3.08	0.8945	2.19	0.1062	2.63
Q42017	2.90	0.9433	2.19	0.1023	2.30
Q12018	2.58	0.9921	2.16	0.0984	1.97
Q22018	2.12	0.0409	2.16	0.0946	1.64
Q32018	2.17	0.0897	2.16	0.0907	1.31
Q42018	2.21	0.1385	2.16	0.0869	0.98

Source: CBN and NDIC Statistical Bulletins (2018)

3.1. MODEL SPECIFICATION

The aggregate measures of fraud and bank performance was obtained for this study on a quarterly basis. This produced a total of forty-four (44) observations. However, a multivariate regression model was employed and is given below:

$$Bank\ Perf = f(BFRD) \quad eq.\ 1$$
$$Bank\ Perf = f(TABF) \quad eq.\ 2$$
$$Bank\ Perf = f(FEM) \quad eq.\ 3$$

On the basis of equations 1-3, a multivariate regression model for bank performance measures and fraud was formulated:

$$Bank\ Perf = \alpha_0 + \beta_1 BFRD_t + \mu_t \quad eq.\ 4$$
$$Bank\ Perf = \alpha_0 + \beta_1 LogTABF_t + \mu_t \quad eq.\ 5$$
$$Bank\ Perf = \alpha_0 + \beta_1 FEM_t + \mu_t \quad eq.\ 6$$

Where:

Bank Perf = Bank Performance (measured by Return on Asset (ROA), and Return on Equity (ROE) in time t)
TABF = Total Amount of Bank Fraud
BFRD = Percent of expected loss to amount of bank fraud involved
FEM = Foreign Exchange Malpractice

α,β_1-β_3 = Regression coefficients

μ_t = Error Term

The testing of the formulated hypotheses was done with the f-statistic from the result of the multivariate regression based on the respective models. The decision rule is to validate a particular alternative hypothesis and invalidate the null hypothesis if the f-calculated is greater than the f-critical.

4. ANALYSIS OF RESULTS

A multivariate regression statistical tool was adopted in the analysis of the data and this was done in phases: descriptive results involving the mean and standard deviation of the dependent and independent variables; correlation matrix, skewness/kurtosis tests, Augmented Dickey-Fuller (ADF) unit root test and the multivariate regression results.

4.1. DESCRIPTIVE STATISTICS

This section presents the preliminary results involving the mean, standard deviation, minimum and maximum values, correlation matrix and the normality test results. The results are presented below:

Table 2. *Descriptive Statistics of Independent and Dependent Variables*

Variable	Obs	Mean	Std. Dev.	Min	Max
tabf	44	3.52	.4808181	2.12	4.35
bfrd	44	.4349409	.2933993	.0163	.9921
roa	44	.8627273	3.497361	-9.28	3.91
roe	44	.1135136	.0769719	-.0437	.215
fem	44	3.1125	1.61229	.79	5.93

Source: Regression Output, 2020

Presented in Table 2 are the descriptive results of independent (TABF, BFRD and FEM) and dependent (ROA and ROE) variables during the period 2008-2018. The results showed that TABF, BFRD, ROA, ROE and FEM recorded means of 3.52, .4349, .8627, .1135 and 3.11 respectively while the standard deviation values are .4808, .2934, 3.497, .0770, and 1.6123 respectively. The mean and standard deviation values of are indications that the independent variables are not constant over time and the mean deviates from both sides from 3.52% and 3.11%

Table 3. *Tests for Normality of Data*

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	joint adj chi2(2)	joint Prob>chi2
tabf	44	0.0002	0.0115	15.56	0.0004
bfrd	44	0.3610	0.0017	9.06	0.0108
fem	44	0.5425	0.0001	12.21	0.0022
roa	44	0.0000	0.0014	23.46	0.0000
roe	44	0.1036	0.7120	2.97	0.2266

Source: Regression Output, 2020

The Jarque-Bera, skewness and kurtosis tests of normality of the dependent and independent variables are presented in Table 3. The kurtosis, TABF (0.0115), BFRD (0.0017), FEM (0.0001), ROA (0.0014) and ROE (0.7120) are platykurtic since the kurtosis is less than three (3). This is an indication that there is the presence of fatter tail than the normal distribution, hence the variables satisfy normality condition that they are normally distributed.

Table 4. *Correlation Matrix*

	tabf	bfrd	fem	roa	roe
tabf	1.0000				
bfrd	-0.0183	1.0000			
fem	0.1904	-0.2668	1.0000		
roa	-0.2802	-0.0268	0.4460	1.0000	
roe	0.0083	-0.0129	0.5402	0.1439	1.0000

Source: Regression Output, 2020

Correlation matrix was used to ascertain the presence or absence of multi-colinearity among variables (independent and dependent variables) by means of a pair-wise correlation test. The correlation results suggest that there is the absence of association between each pair of the independent variables. Thus, the correlation matrix revealed that the independent variables BFRD is negatively correlated with ROA, while TABF, and FEM are positively correlated with ROE. In spite of the inverse correlation among the variables, none of the variables correlation coefficients exceed 0.8. This suggests that there is the absence of multi-colinearity among the variables.

4.2. ECONOMETRIC ANALYSIS

The econometric results are presented as follows: Augmented Dickey-Fuller (ADF) Unit Root, Johansen Co-integration and multivariate regression.

ADF Unit Root Test

The result of the Augmented Dickey Fuller unit root test is shown on Table 4a-4c.

Table 4a. *ADF Unit Root Test Results for BFRD, ROE and ROA*

	Test Statistic	Interpolated Dickey-Fuller: 1% Critical Value	5% Critical Value	10% Critical Value
Z(t)	-3.681	-3.682	-2.972	-2.618

MacKinnon approximate p-value for Z(t) = 0.0044

Source: Regression Output, 2020

From Table 4a, the null hypothesis for BFRD, ROE and ROA was rejected and the alternate hypothesis accepted at levels 1% and 5%, since the absolute values of the test statistics were greater than its critical value.

Table 4b. *ADF Unit Root Test Results for TABF, ROE and ROA*

	Test Statistic	Interpolated Dickey-Fuller: 1% Critical Value	5% Critical Value	10% Critical Value
Z(t)	-3.127	-3.682	-2.972	-2.618

MacKinnon approximate p-value for Z(t) = 0.0246

Source: Regression Output, 2020

From Table 4b, the null hypothesis for TABF, ROE and ROA was rejected and the alternate hypothesis accepted at levels 1% and 5%, since the absolute values of the test statistics were greater than its critical value.

Table 4c. *ADF Unit Root Test Results for FEM, ROE and ROA*

	Test Statistic	Interpolated Dickey-Fuller: 1% Critical Value	5% Critical Value	10% Critical Value
Z(t)	-7.260	-3.682	-2.972	-2.618

MacKinnon approximate p-value for Z(t) = 0.0000

Source. Regression Output, 2020

From Table 4c, the null hypothesis for FEM was rejected and the alternate hypothesis accepted at levels 1% and 5%, since the absolute values of the test statistics were greater than its critical value. Given the above results of the ADF

unit root tests, a Lag Order Selection Criteria (LOSC) was conducted in order to further verify if there is a likely long-run equilibrium association among the variables of the study.

Table 5. *Lag Order Selection Criteria*

lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-252.755				4546.09*	16.9222	17.1955*	17.7467*
1	-247.682	10.147	9	0.339	6007.11	17.1676	17.5775	18.4043
2	-241.331	12.7	9	0.177	7592.79	17.3332	17.8798	18.9822
3	-232.024	18.615	9	0.029	8422.54	17.314	17.9972	19.3752
4	-215.97	32.107*	9	0.000	6656.85	16.8731*	17.693	19.3466

Lagrange-multiplier test

lag	chi2	df	Prob > chi2
1	16.6804	9	0.05396
2	6.5036	9	0.68865

H0: no autocorrelation at lag order

Source: Regression Output, 2020

Having found that the series are of order I(1) and I (0), the study proceeded to determine the optimal lag using the Akaike information criterion. From the Table 5, the AIC showed that the optimum lag is four. In addition, the Lagrange-multiplier result is an indication that there is no autocorrelation at lag order among the variables of the study.

Johansen Co-integration Test

The result of the Johansen Co-integration test is shown on Table 6.

Table 6. *Johansen Co-integration Results*

maximum rank	parms	LL	eigenvalue	trace statistic	5% critical value
0	12	-315.37733	.	59.8844	29.68
1	17	-302.60085	0.52837	34.3315	15.41
2	20	-292.13398	0.45974	13.3977	3.76
3	21	-285.43512	0.32568		

Cointegrating equations

Equation	Parms	chi2	P>chi2
_ce1	2	1.579526	0.4540

Source. Regression Output, 2020

In order to establish whether long-run relationship exist amongst the variables or not, co-integration test via Johansen method was used. Using the likelihood ratio, the results indicate that there are two co-integrating equation at 5 and 1 percent level of significance. This suggests that there is the presence of two co-integrating equations at 5 per cent and 1 per cent level of significance. This implies that there is the presence of a long-run relationship between the variables of the study.

4.3. TEST OF HYPOTHESES

In order to achieve the objectives of the study, three hypotheses were formulated. They are hereby restated and tested at 0.05% significance level below:

HYPOTHESIS I

The null hypothesis states that foreign exchange malpractice does not significantly affect the return on asset and return on equity of banks in Nigeria. While the alternative hypothesis states that foreign exchange malpractice significantly affects the return on asset and return on equity of banks in Nigeria. The multivariate results for the test of Hypothesis I is presented in Table 7a:

Table 7a. *Multivariate Results for Hypothesis I*

Equation	Obs	Parms	RMSE	"R-sq"	F	P
roa	44	2	3.167218	0.1990	10.43164	0.0024
roe	44	2	.0655407	0.2918	17.30776	0.0002

	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
roa						
fem	.9675577	.2995716	3.23	0.002	.3629978	1.572118
_cons	-2.148796	1.047561	-2.05	0.047	-4.262859	-.0347323
roe						
fem	.0257901	.0061992	4.16	0.000	.0132797	.0383006
_cons	.0332418	.0216776	1.53	0.133	-.0105055	.0769891

Source: Regression Output, 2020

Table 7a shows the multivariate regression of foreign exchange malpractice (FEM) and bank performance measures (ROA and ROE) during the period 2008q-2018q. The R-Squared for ROA is 0.1990 and ROE is 0.2918, suggesting that the independent variable (FEM) explains about 19.90 and 29.18% of the systematic variations in ROA and ROE. The f-ratios indicate that bank performance (ROA=10.43164; ROE=17.30776) are significantly affected by foreign exchange malpractices. Besides, the p-values of bank performance variants

indicate a rejection of the null hypothesis and acceptance of the alternate hypothesis that foreign exchange malpractice has significant effect on return on asset and return on equity of banks in Nigeria.

HYPOTHESIS II

The null hypothesis states that total amount of bank fraud does not significantly affect the return on asset and return on equity of banks in Nigeria. While the alternative hypothesis states that total amount of bank fraud significantly affects the return on asset and return on equity of banks in Nigeria. The multivariate result for the test of Hypothesis II is presented in Table 7b:

Table 7b. *Multivariate Results for Hypothesis II*

Equation	Obs	Parms	RMSE	"R-sq"	F	P
roa	44	2	3.396985	0.0785	3.578741	0.0654
roe	44	2	.0778802	0.0001	.0029073	0.9573

	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
roa						
tabf	-2.038185	1.077404	-1.89	0.065	-4.212474	.1361038
_cons	8.037139	3.826882	2.10	0.042	.3141786	15.7601
roe						
tabf	.0013319	.0247009	0.05	0.957	-.0485165	.0511802
_cons	.1088255	.0877361	1.24	0.222	-.0682332	.2858841

Source: Regression Output, 2020

Table 7b shows the multivariate regression of total amount of bank fraud (TABF) and bank performance measures (ROA and ROE) during the period 2008q-2018q. The R-Squared for ROA is 0.0785and ROE is 0.0001, suggesting that the independent variable (TABF) explains about 0.79% and 0.01% of the systematic variations in ROA and ROE. The f-ratios indicate that bank performance variants (ROA=3.578741; and ROE=0.0029073) are significantly affected by total amount of bank fraud. Besides, the p-values of bank performance variants indicate a rejection of the null hypothesis and acceptance of the alternate hypothesis that total amount of bank fraud has significant effect on return on asset and return on equity of banks in Nigeria.

HYPOTHESIS III

The null hypothesis states that the percent of expected loss to amount of bank fraud does not significantly affect the return on asset and return on equity of banks in Nigeria. While the alternative hypothesis states that the percent of expected loss to amount of bank fraud significantly affects the return on asset and

return on equity of banks in Nigeria. The multivariate result for the test of Hypothesis III is presented in Table 7c:

***Table 7c**. Multivariate Results for Hypothesis III*

Equation	Obs	Parms	RMSE	"R-sq"	F	P
roa	44	2	3.537478	0.0007	.0302463	0.8628
roe	44	2	.0778764	0.0002	.0069953	0.9337

		Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
roa							
	bfrd	-.319769	1.838656	-0.17	0.863	-4.030327	3.390789
	_cons	1.001808	.961215	1.04	0.303	-.9380024	2.941618
roe							
	bfrd	-.0033854	.0404774	-0.08	0.934	-.0850721	.0783013
	_cons	.1149861	.0211608	5.43	0.000	.0722818	.1576904

Source. Regression Output, 2020

Table 7c shows the multivariate regression of percent of expected loss to amount of bank fraud (BFRD) and bank performance measures (ROA and ROE) during the period 2008q-2018q. The R-Squared for ROA is 0.0007and ROE is 0.0002, suggesting that the independent variable (BFRD) explains about 0.07% and 0.02% of the systematic variations in ROA and ROE. The f-ratios indicate that bank performance variants (ROA=.032463; and ROE=0.0069953) are not significantly affected by the percent of expected loss to amount of bank fraud. Besides, the p-values of bank performance variants indicate a rejection of the alternate hypothesis and acceptance of the null hypothesis that the percent of expected loss to amount of bank fraud does not significantly affects the return on asset and return on equity of banks in Nigeria.

4.4. DISCUSSION OF FINDINGS

The study examined the effect of fraud on the financial performance of Nigerian Deposit Money Banks (DMBs). In this study, secondary data on Total Amount of Bank Fraud (TABF), Percent of Expected Loss to Amount of Bank Fraud (BFRD), Foreign Exchange Malpractices (FEM), Return on Assets (ROA) and Return on Equity (ROE) spanning the period 2008-2018 extracted from the Central bank of Nigeria (CBN) and the Nigeria Deposit Insurance Corporation (NDIC) Statistical Bulletins were used. In order to determine the effect of fraud on financial performance, the multivariate regression model was employed. However, the analyses were done via windows software – STATA 13.0 version.

The result of the Jarque-Bera, skewness and kurtosis tests of normality of the dependent and independent variables showed that the errors are normally

distributed. The kurtosis, TABF (0.0115), BFRD (0.0017), FEM (0.0001), ROA (0.0014) and ROE (0.7120) are platykurtic since the kurtosis is less than three (3). This is an indication that there is the presence of fatter tail than the normal distribution, hence the variables satisfy normality condition that they are normally distributed. Correlation matrix was used to ascertain the presence or absence of multicollinearity among variables by means of a pair-wise correlation test. None of the variables correlation coefficients exceed 0.8. This suggests that there is the absence of multicollinearity among the variables; hence the data used in this study is fit for performing regression analysis. The result of the ADF unit root test indicates that all the variables were not stationary but became stationary after the first difference was taken, while, the Johansen Co-integration test indicates that there is a long run equilibrium relationship among the variables of the study.

Based on the test of hypotheses I, we discovered that the R-Squared for ROA is 0.1990 and ROE is 0.2918, suggesting that the independent variable (FEM) explains 19.90 and 29.18% of the systematic variations in ROA and ROE. The f-ratios indicate that bank performance (ROA=10.43164; ROE=17.30776) are significantly affected by foreign exchange malpractices. Besides, the p-values of bank performance variants also led to the rejection of the null hypothesis and acceptance of the alternate hypothesis that foreign exchange malpractice significantly affects the return on asset and return on equity of banks in Nigeria. No doubt, transactions in foreign exchange constitute a key component of banking sector activities. In actual fact, it is the biggest and most extensive financial market worldwide. The banking industry is highly affected by activities in the foreign exchange market probably because of their central role in financial intermediation. Accordingly, foreign exchange malpractices would affect their performance. This finding is expected because, we have seen in Nigeria where bank officials engaged in the falsification of foreign exchange documents and diversion of foreign exchange that has been officially allocated to the bank, to meet customers' needs and demand, to the black market using "ghost customers" as fronts and selling to unsuspecting and naïve customers at exchange rates far above the official rate and thus claiming the difference after the unsuspecting customer has gone.

In the case of hypothesis II, we find that R-Squared for ROA is 0.0785 and ROE is 0.0001, suggesting that the independent variable (TABF) explains 0.79% and 0.01% of the systematic variations in ROA and ROE. The f-ratios indicate that bank performance variants (ROA=3.578741; and ROE=0.0029073) are significantly affected by total amount of bank fraud. Interestingly, the p-values of bank performance variants suggest a rejection of the null hypothesis and acceptance of the alternate hypothesis that total amount of bank fraud significantly affects the return on asset and return on equity of banks in Nigeria. The finding of the study is in agreement with prior empirical evidences conducted by Adediran and Olugbenga (2010), Muritala, Ijaiya and Adeniran (2017), Ogbeide (2018) and Kolapo and Olaniyan (2018) that showed that fraud significantly affects the financial performance of banks in Nigeria.

Finally, in the case of hypothesis III, we find that R-Squared for ROA is 0.0007 and ROE is 0.0002, suggesting that the independent variable (BFRD) explains 0.07% and 0.02% of the systematic variations in ROA and ROE. The f-ratios indicate that bank performance variants (ROA=.032463; and ROE=0.0069953) are not significantly affected by the percent of expected loss to amount of bank fraud. Furthermore, the p-values of bank performance variants indicate a rejection of the alternate hypothesis and acceptance of the null hypothesis that the percent of expected loss to amount of bank fraud does not significantly affects the return on asset and return on equity of banks in Nigeria

5. CONCLUSION AND RECOMMENDATIONS

Fraud is one of the fundamental factors hampering the growth of the banking industry in Nigeria and the world over (Akinyomi, 2010). Fraud shakes the foundation, integrity, social status of most Nigerian banks thereby ensuing to some of the banks being distressed. This metamorphoses into a collective or shared belief that the banking industry is where most of the fraudulent practices are done. The degree and incidence of fraud in the Nigerian banking industry has been on the increase with obvious implications on their performance. Today, fraud in the Nigerian banking industry as well as its effect has been a topical issue not only to the shareholders, and regulatory authorities but also those that have interest in the industry's performance. With the advent of information and communication technology in banks' operation, it is expected that issues of bank fraud would be foreclosed.

However, the wave of fraud in Nigerian banks has continued to be on the rise. There were 20,768 reported cases of fraud and forgery (attempted and successful) valued at ₦19.77 billion in 2018, compared with 16,762 cases, involving ₦5.52 billion and US$ 0.12 million in the period of 2017. Whereas, the amount lost to fraud and forgeries in the first six months of 2018 total ₦12.06 billion, compared with the ₦0.78 billion and US$0.03 million suffered in the first half of the year 2017 (CBN, 2018). This is just as the banking sector regulator revealed that as of June 2018, three commercial banks did not have the prescribed minimum liquidity ratio of thirty per cent (30%). In the light of the above, this study therefore sought to investigate the effect of fraud on the financial performance of banks in Nigeria.

This study therefore, obtained secondary data on Total Amount of Bank Fraud (TABF), Percentage of expected loss to amount bank fraud (BFRD), Foreign Exchange Malpractices (FEM), Return On Assets (ROA) and Return On Equity (ROE) from the Central Bank of Nigeria (CBN) and the Nigeria Deposit Insurance Corporation (NDIC) with a view of ascertaining the effect of fraud on the financial performance of Nigerian banks.. The results from the analysis of data and tests of hypotheses show that foreign exchange malpractice and total amount of bank fraud significantly affects return on asset and return on equity of banks in Nigeria. However, the percent of expected loss to amount of bank fraud does not significantly affects the return on asset and return on equity of banks in Nigeria.

Thus, the study concludes that fraud significantly and negatively influences financial performance of banks in Nigeria.

On the basis of the above findings, the study recommends that:

(a) In order to improve on the Return on Asset (ROA) and Return on Equity (ROE), Nigerian banks should strengthen and institute effective and efficient internal control in recording, processing and authorization of business financial transactions that would mitigate the incidence of fraud.

(b) The Economic and Financial Crimes Commission (EFCC), Independent Corrupt Practices and Other Related Offences Commission (ICPC), Nigerian Financial Intelligence Unit (NFIU) and other agencies responsible with the task of tracking fraud in Nigeria should earnestly beam their searchlights on banks in Nigeria, being possible conduit pipes for corrupt financial flows.

(c) Nigerian banks should take a closer watch at their operations and declining to provide tolerant environments for fraudulent activities. Additionally, bank officials should be compelled to always act in accordance with existing laws and maintain high technical and ethical standards.

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