

# Impact of Forensic accounting on the financial performance of deposit money banks in Nigeria.

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## Abstract

Forensic accounting is an effective means of preventing fraud and thereby enhancing the performance of Nigeria's deposit money banks. One of the forensic accounting tools that will be employed in this investigation is fraud detection. When used appropriately, fraud reporting, litigation, and prevention can all help deposit money banks achieve greater financial performance. From 2001 to 2020, this study will use a quantitative research design to collect secondary data on the performance of twenty deposit money banks by analyzing forensic accounting indicators from the Nigerian central bank's annual bulletin and the Nigeria stock exchange publication. The primary objective of this study is to ascertain the financial impact of forensic accounting on Nigerian deposit money institutions.

The data for this study were examined using panel data analysis via the Hausman test, which determined that the analysis should be conducted using a fixed-effect regression model. The fixed effect regression analysis demonstrates that forensic accounting has a considerable favorable effect on the financial performance of Nigeria's deposit money institutions. Additionally, the fixed-effect model demonstrates a significant association between forensic accounting instruments and deposit money bank financial performance.

Meanwhile, a Pearson Correlation analysis was performed, which revealed a positive and significant association between forensic accounting instruments and the financial performance of deposit money banks.

According to the analysis's findings, it is recommended that deposit money banks should hire forensic accounting experts and collaborate with the economic and financial crime commission (EFCC) via the Nigerian central bank to effectively mitigate modern-day fraud and avoid money being lost to fraud that jeopardizes the deposit money banks' financial performance..

Keywords: Forensic accounting, financial performance, Hausman test, fixed-effect regression model, Pearson correlation.

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## 1.Introduction

As a relatively new profession, financial accounting, also known as investigative accounting or extortion review, has evolved in recent years as a result of the union of criminological and accounting research. It is a combination of the

two disciplines. The application of natural laws to human laws, according to Crumbley (2019), is defined as "the application of natural laws to human laws." Legal science refers to quantifiable researchers who act as analyzers and mediators of evidence and realities in legal situations, as well as providing specialists' emotional reactions to their discoveries in the courtroom. As an accounting discipline, it follows that the facts under inspection and comprehension will be monetary. Accounting is a monetary discipline. Forensic accounting, according to Joshi (2017), is described as the technique of delaying the verification of money transactions to conceal fraudulent activity. Biological accounting, according to Zysman (2016), is the combination of accounting, inspection, and investigation capabilities. Forensic auditing is accounting that is fit for legal inspection, gives the highest level of confirmation, and incorporates the well-established concept of having been touched base in an orderly manner, according to the most general definition (Crumbley 2019). Science-based accounting methods, according to Coenen (2018), are "the application of accounting principles and the development of solutions to legitimate problems." It asks that the location of the deceit is made public and that the report be treated as evidence in official courts or regulatory continuing education programs, as appropriate, and that the report be made public (Joshi, 2017). The court will receive a thorough accounting investigation, which will establish the premise of the transaction, engage in argument, and eventually render a judgement on a legal issue (Zysman 2016). The following is a more formal definition of what is meant by the term: To be more specific, forensic accounting is a branch of accounting that deals with the organization of data that is meant to be used as evidence, most often for legal purposes. A wide range of responsibilities fall to practitioners in this field, including investigating and reporting allegations of financial misrepresentation and professional misconduct, such as embezzlement and extortion; estimating losses, damages, and resources; deconstructing complex monetary exchanges, and preparing financial statements. To explore the financial performance of commonly deposit money banks, which were selected based on their stock exchange performance on the Nigerian stock exchange, this study used panel data analysis as part of its quantitative research to conduct its quantitative research. When it comes to forensic accounting, the independent variables used to represent it were fraud detection, fraud reporting, litigation, and fraud prevention. When it came to forensic accounting, the dependent variables used to represent it was net profit margin and net profit margin. If fraud is not discovered, reported, and avoided as soon as possible, it has a greater chance of negatively impacting the financial performance of the deposit money bank. In Nigeria, forensic accounting is most commonly used in deposit money banks to limit the impact of fraud on the financial performance of the deposit money bank. Forensic accounting is a type of accounting that is used to investigate and prevent fraud. The primary objective of this study is to examine the financial impact of forensic accounting on the financial performance of Nigerian deposit money banks. Second, this study will look into whether there is a link between forensic accounting and the financial performance of deposit money banks.

### 1.1 Statement of problem

Fake exercises in a business bank setting can hurt an advertising bank's reasonability, execution, maintainability, and notoriety. Cheats in Nigerian business banks have long been a source of contention for management and controllers. Numerous instances of fraudulent exercises in the area of corporate cost-cutting have been identified. For instance, both the volume and frequency of fraudulent practices in Nigerian banks have increased recently. According to the Nigeria Deposit Insurance Corporation (NDIC), fraud in Nigerian banks went from N804 million in 1990 to N3,199 million in 1998. Additionally, the level of genuine/anticipated difficulty associated with deception grew from three cents in 1990 to twenty-two cents in 1998. Perhaps the most flagrant misrepresentation by a Nigerian bank in any particular year occurred in 1998 when United Bank for Africa plc undervalued N786 million in response to extortion (Uche, 2014). Alhaji Umaru Ibrahim, Managing Director of the Nigeria Deposit Insurance Corporation (NDIC), revealed that in 2012, retail cash banks disclosed to the organization an aggregate of 3,380 incidents of attempted misrepresentation and imitations totaling N18.04 billion. A total loss of N4.5 billion was recorded during the fiscal year under review (2012). This is a 44.7% rise over the 2,352 recorded cases in 2011. Thus, in the first quarter of 2013, 983 attempted deception instances totaled N7.80 billion, while actual misfortune totaled N2.05 billion. Ibrahim stated that in the first quarter of 2013, 341 incidents of digital misrepresentation occurred, resulting in a true loss of N75 million (NDIC, 2013). Several partners face difficulties in preventing account misrepresentation. To begin with, it diminishes a bank's profitability, which can result in diminished company esteem as a result of low investor returns. It may imperil the deposit money institutions' continuous operations under extraordinary conditions, which may hurt investor wealth. Contributors may suffer unpleasant consequences as a result of bank deceit, especially if it ends in a bank run. This might have a catastrophic effect on consumer stores. Numerous employees in the business have been rejected, had their agreements terminated, or have abruptly resigned as a result of banking extortion. As a result of their involvement in forgeries and fabrications, some experienced deliverers lose

their parts. The prospect of losing their employment if a bank is wound up or liquidated as a result of extortion may sway workers. To effectively combat extortion, misrepresentation, and fraud in Nigeria's deposit money banks, efficient use of forensic accounting is required.

## 1.2 Research hypothesis

H1: Forensic accounting has a positive impact on financial performance of deposit money banks in Nigeria

H2: There is a relationship between forensic accounting and financial performance of deposit money banks.

## 2. Literature review

Forensic accounting is acknowledged as a unique category of specialist talents with distinguishing characteristics; certification provides representative esteem (Williams, 2016). Forensic accounting is a science that entails the application of accounting principles and concepts gained through an investigation of methods, procedures, and tactics to resolve legal disputes. It requires the coupling of investigative, accounting, and examination skills (Arokiasamy and Cristal, 2018; Dhar and Sarkar, 2015). According to Stanbury and Paley-Menzies (2017), forensic accounting is the ability to analyze social events and provide evidence against financial wrongdoers in a manner acceptable to a court of law. Hopwood, Leiner, and Young (2018) define scientific accounting as the application of investigative and diagnostic abilities to financial difficulties using judicial norms. According to Degboro and Olofinsola (2017), the purpose of the legal examination is to ensure and establish the truth in support of a legal case. In this case, employing scientific methods to uncover and investigate wrongdoing includes explaining all facets of the offence and identifying the culprits. According to Howard and Sheetz (2016), forensic accounting is the systematic evaluation, explanation, and presentation of complex financial concerns in an unambiguous, succinct, and precise manner in an official courtroom. It focuses on the use of accounting orders to assist in addressing corporate challenges that are grounded in reality (Okunbor and Obaretin, 2015). Forensic accounting is a subfield of accounting that employs models and investigation approaches to seek confirmation, verification, and warning signals to provide authentic proof. It is concerned with the evidentiary value of accounting data and, as a viable field, with accounting extortion and criminological examination; with consistency, due diligence, and risk assessment; with detecting financial deception and financial explanation fraud; with tax evasion; with liquidation and valuation ponders; and with accounting direction infringement (Dhar and Sarkar, 2015).

Onuorah and Ebimobwei (2015) examined the role of forensic accounting services in detecting bank fraud in Nigeria. The study evaluated the data using ordinary least square regression and discovered that banks benefit from forensic accounting services by decreasing their level of fraudulent activity. Bressler (2014) interviewed attorneys and judges to establish the best methods for increasing public awareness of forensic accountants and their role in fraud investigations. The study determined that forensic accountants should possess practical knowledge of evidentiary regulations, financial data, accounting information system software, and interpersonal communication abilities through conceptual analysis.

Ahmad, Zayyad, and Rasak (2016) used an empirical technique to investigate the impact of forensic audits on financial investigations in Nigeria. Secondary data from the central bank's annual bulletin were analyzed using correlation and regression analysis. The findings demonstrated a statistically significant relationship between forensic accounting and bank financial success. As a result, forensic accounting can be used to aid in the early detection and confirmation of fraud, hence boosting Nigerian deposit money institutions' financial performance.

Meanwhile, Gottschalk (2017) examined the favourable effect of forensic accounting on the financial performance of Nigeria's deposit money banks, asserting that it assists in detecting and averting fraud capable of liquidating institutions and degrading their financial performance.

### 2.1 FRAUD PREVENTATIVE THEORY

This research paper began with evidence that Commercial Banks require forensic accounting services to operate properly. Additionally, forensic accounting services were seen as vital in today's technologically advanced but fragile economic environment. The best predictors of planned behavior are intentions, and understanding their antecedents provides practical insights into behavior (Ajzen and Fishbein 2015). As a result, a fraud prevention hypothesis was proposed to help individuals overcome their behavioral inclination to commit fraud. According to

Goosen, Pampallis, Van der Merwe, and Mdluli (2019), a bank owes its clients the responsibility of maintaining accurate records of all transactions involving the issuer's account. Thus, a bank statement is crucial in establishing the bank's accountability to its customers and is an integral part of modern banking. According to Goosen et al. (2019), a bank account statement's primary function, which is critical to a bank, is to serve as an audit trail detailing the numerous transactions made against the account. Bank statements are an accounting type of document. The entire sample holds this view, regarding a bank account statement as a thorough record of all transactions in a bank account. These transactions reflect money being placed into or withdrawn from an account (credit and debit transaction). In effect, a bank statement serves as evidence of transactions against a bank account, as Section 236 of the Criminal Procedure Act 51 of 1977 specifies when it comes to verifying entries in bankers' records.

### 3. Research Methodology

This study used a secondary quantitative research design, which entails collecting quantitative data from pre-existing, reputable sources, such as the one from which the data for this work was gathered. The quantitative data used in this study is referred to as secondary data. It was gathered from the Nigerian stock exchange factbook and the Central bank's annual bulletin record on ten selected deposit money banks in Nigeria between 2001 and 2020. Each bank's performance on the Nigerian stock exchange (NSE) was used to create a panel data set with a sample size of 200. Secondary quantitative research was utilized to assess the link between the study's two primary variables and to provide a helpful recommendation based on the findings. The data analysis method used in this paper will be descriptive statistics (mean and standard deviation will be used to summarize the data), panel regression analysis, which will include the Hausman test, a fixed effect or random effect regression model (depending on the result of the Hausman test), and Pearson correlation. In this study, the variables of interest are forensic accounting and the financial performance of Nigerian deposit money banks. Litigation, fraud detection, fraud cases reported, and fraud prevention rate are all forensic accounting indicators, whereas the deposit money banks' financial performance is the dependent variable. Stata 16.0 was used to analyze this paper.

Table 1: Variables measurement

Variables	Measurements (unit)
Financial performance	Billion (Naira)
Fraud detection	Percentage (%)
Fraud cases reported	Percentage (%)
Fraud prevention	Percentage (%)
Litigation	Percentage (%)

Source: Author

Table 2: List of the 10 selected deposit money banks for this study

No	Top selected Deposit money banks (DMBs) in Nigeria
1	Zenith Bank
2	Guaranty Trust Bank
3	First bank of Nigeria
4	Ecobank Nigeria
5	United Bank for Africa
6	Fidelity Bank
7	FCMB
8	WEMA Bank
9	Access Bank
10	Union bank

Source: Author

### 3.1 Model specification

The formulated hypothesis will be tested using the functional description of the model, which is:

Financial performance = f (Litigation, Fraud detection, Fraud cases reported, and Fraud prevention).

Econometrically, the panel regression models can be expressed as:

In panel data analysis, there is often a challenge which estimator is best suited to the model. Is that a fixed effect or a random effect? The generalized model for panel data is  $Y_{it} = a_i + BX_{it} + U_{it}$ . It is assumed that  $a_i$  does not correlate with the explanatory variables that form the null hypothesis. That is,  $a_i$  is independent of the explanatory variable in the model against the alternative hypothesis that  $a_i$  is correlated with the independent variable and this often causes a problem with the researcher with which model or estimator that he or she should apply. So, the Hausman test postulate that when the null hypothesis is rejected, you run the analysis with fixed effect.

Decision rule: Reject the null hypothesis if  $P < \alpha$  and do not reject if otherwise. Where  $\alpha$  is the significant level (1%, 5%, 10% respectively)?

Financial performance<sub>it</sub> =  $\beta_0 + \beta_1$  Litigation<sub>it-1</sub> +  $\beta_2$  Fraud detection<sub>it</sub> +  $\beta_3$  Fraud cases reported<sub>it</sub> +  $\beta_4$  Fraud prevention<sub>it</sub> +  $\varepsilon_{it}$

Financial performance of Nigeria deposit money banks is the dependent variable while the independent variables are Litigation, Fraud detection, Fraud cases reported, Fraud prevention, while  $\varepsilon_{it}$  is the error term that takes care of unaccounted factor in the model.  $B_0$  is the intercept or constant term while  $\beta_1$  to  $\beta_4$  are the slope or coefficient estimate of the independent variables.

Besides, there is need for normality test that reveal the satisfaction of the model assumptions to ensure that ordinary least square panel model applied is fit and robust. The statistical software used for this analysis is Stata 16.0.

### 3.2 Correlation analysis

Correlation is a measure of direction, strength and association between two variables (forensic accounting and financial performance). To understand the direction of relationship between two variables, we will adopt Pearson correlation coefficient (r) which lies between -1 and +1 in this study. Besides, the test of significance of correlation has the hypothesis:  $H_0: P = 0$  vs  $H_1: P \neq 0$ . The computer software that will be used for the computation of the correlation analysis is STATA 16.0.

## 4. Result and discussion

Table 3: Descriptive statistics

Variables	N	Mean	SD
Financial Performance	200	12.65	8.125
Fraud detection	200	19.29	5.513
Fraud Reporting	200	15.84	4.594
Fraud Prevention	200	17.47	5.007
Litigation	200	20.38	4.885

Source: Author's computation using Stata software

Table 3 shows that on the average financial performance of the deposit money banks is about 13 billion-naira, fraud detection is about 19% on average, fraud reporting is about 16% on average, fraud prevention is about 17% on average and litigation is about 21% on the average. However, the fraud reporting has the least variability due to its lowest standard deviation value of about 4.6% and financial performance of the deposit money banks has the greatest variability due to its highest standard deviation value of about 8.1 billion naira.

### 4.1 Hausman test

The Hausman test ( $P < 0.01$ ) which indicate that the model is statistically significant as we can see in the appendix B and this indicate that the fixed effect regression model would be used to run the analysis of this work.

Table 4 : Fixed effects regression

Financial Performance	Coefficient estimate	Test statistic	P-value
Fraud detection	0.296	3.45	0.001*
Fraud Reporting	0.157	1.45	0.150
Fraud Prevention	0.317	3.19	0.002*
Litigation	0.139	1.65	0.100
Constant	-3.902	-2.75	0.007
Overall P-value	0.0000*		

Where asterisks \* represent 1% significant level

Source: Author's computation using Stata software

Table 4 reveals that the overall fixed effect regression model ( $P < 0.01$ ) indicate that the model is statistically significant at 1% level which indicate a significant relationship between financial performance and forensic accounting indicators (fraud detection, fraud reporting, fraud prevention and litigation) and this follows that the model is a good fit for the data and can be used for future prediction of the financial performance of the deposit money banks in Nigeria.

Fraud detection ( $\beta = 0.296$ ,  $P = .001$ ) and Fraud prevention ( $\beta = 0.317$ ,  $P = .002$ ) are both forensic accounting instruments and this indicate that fraud detection and fraud prevention are statistically significant and therefore, have positive significant impact on financial performance of deposit money banks in Nigeria which supported the hypothesis (H1) of this study. This suggest that forensic accounting is an important instrument that should be well utilized by the deposit money banks to detect fraud, prevent fraud and determine their better financial performance.

In order to ensure that we have a valid and robust fixed effect regression model, the normality diagnostic is very necessary.

Table 5: Normality test

Variable	N	P-value
Financial Performance	200	0.582
Fraud detection	200	0.674
Fraud Reporting	200	0.677
Fraud Prevention	200	0.227
Litigation	200	0.424

Source: Author's computation using Stata software

In table 5, The data was not satisfy but was corrected using Shapiro-Wilk log-normal as a corrective measure to the violation of the normality assumption and we can see that the data is normally distributed as the  $P > 0.05$  for all the data observations and this satisfy the normality assumption which makes the model very robust.

#### 4.2 Correlation analysis

In appendix B, the asterisk \* indicate that the relationship between fraud detection and financial performance of deposit money banks in Nigeria is positive and statistically significant at 1% level. In the same vain, the asterisk \* indicate that the relationship between other forensic indicators (such as fraud reporting, fraud prevention and litigation) and financial performance is positive and statistically significant at 1% significant level. And this also support the research hypothesis (H2) that there is sufficient evidence to conclude that there is a positive and significant relationship between forensic accounting and financial performance of deposit money banks in Nigeria. This suggest that the more the forensic accounting instruments are well utilized, the better the financial performance of the deposit money banks in Nigeria.

Figure 1: Financial performance Panel graph

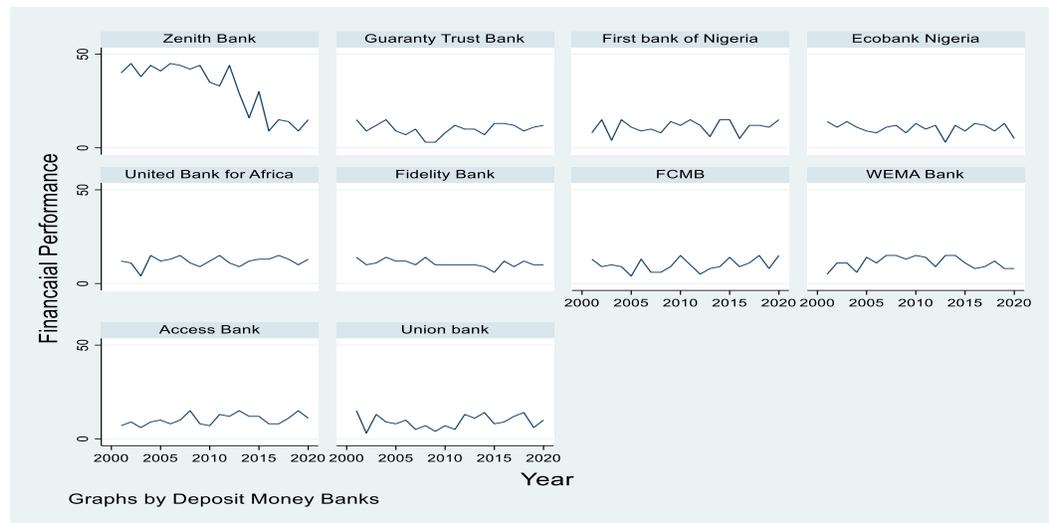


Figure 1 shows the financial performance by all the ten deposit money banks under study from 2001 to 2020 and we can see that Zenith bank tend to have the highest financial performance compared to other banks under review as it shows that Zenith bank has relative highest growth in financial performance with net profit margin of about 50 billion Naira.

Figure 2: Fraud detection Panel graph

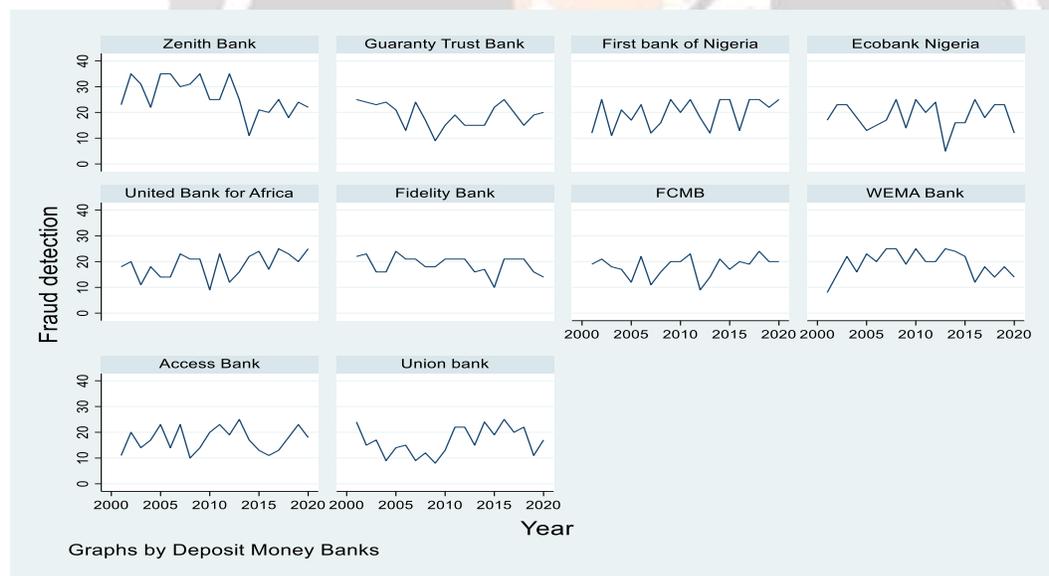


Figure 2 shows the fraud detection instrument applied by all the ten deposit money banks under study from 2001 to 2020 and we can see that Zenith bank tend to have the highest fraud detection indicator compared to other banks with the highest growth of about 35%.

Figure 3: Fraud reporting Panel graph

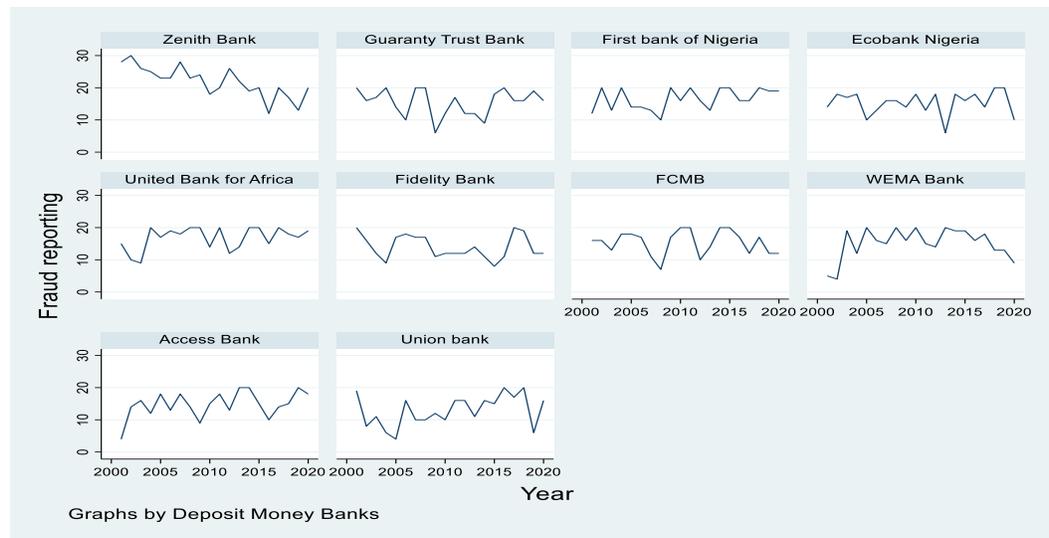


Figure 3 shows the fraud reporting indicator applied by all the ten deposit money banks under study from 2001 to 2020 and we can see that Zenith bank tend to have the highest fraud reporting indicator compared to other banks with the highest growth of about 30%.

Figure 4: Fraud prevention Panel graph

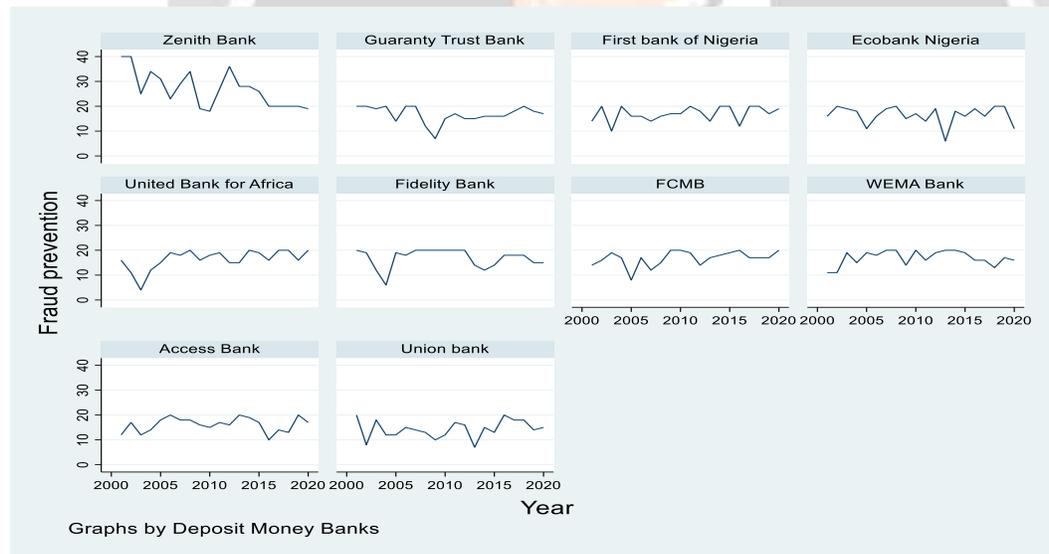


Figure 4 shows the fraud prevention instrument applied by all the ten deposit money banks under study from 2001 to 2020 and we can see that Zenith bank tend to have the highest fraud prevention indicator compared to other banks with the highest growth of about 40%.

Figure 5: Litigation Panel graph

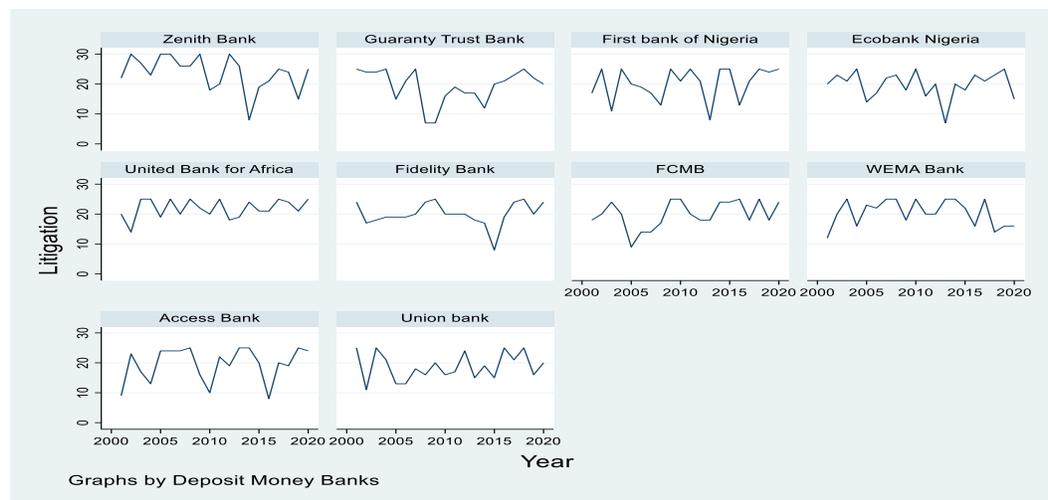


Figure 5 shows the litigation cases that is applicable to all the ten deposit money banks under study from 2001 to 2020 and we can see that Zenith bank tend to have the highest cases of litigation compared to other banks with the highest growth of about 30% followed by the Ecobank bank with growth about 25% of litigation cases.

### Findings

Based on the result of this research paper above, the following are the notable findings:

- The Hausman test specified fixed effect regression model which shows that there is a significant relationship between forensic accounting and financial performance of the deposit money banks in Nigeria which support the hypothesis of this research paper.
- The fixed effect model also shows that forensic accounting has positive significant impact on financial performance of deposit money banks which supported the first hypothesis of this study
- The Pearson correlation shows that there is a positive and significant relationship between the forensic accounting and financial performance of the deposit money banks.
- The test of normality for the parametric assumption using Shapiro-Wilk shows that data are normally distributed which satisfy the assumption of normality.
- Besides, the visualization of the panel data for the ten selected banks under review shows that zenith banks has the highest financial growth with highest utilization of forensic accounting instruments.

### Conclusion and recommendation

Forensic accounting is a vital approach that is incredibly effective in reducing fraud inside Nigeria's deposit money institutions, allowing banks to enhance their financial performance as a result. The primary objective of this research paper is to examine the impact of forensic accounting on the financial performance of Nigerian deposit money institutions. The findings of this study have established a statistically significant relationship between forensic accounting indicators and the financial performance of deposit money institutions, which is consistent with Ahmad, Zayyad, and Rasak's findings (2016). Additionally, a fixed effect regression model demonstrates that forensic accounting has a positive and statistically significant impact on the financial performance of deposit money institutions, correlating with Gottschalk (2017), as well as Onuorah and Ebimobwei (2015).

The Pearson correlation test revealed a positive correlation and statistically significant relationship between forensic accounting tools and deposit money banks' financial performance in Nigeria, indicating that the more effectively forensic accounting instruments are used, the better deposit money banks' financial performance in Nigeria.

It is consequently recommended that Nigerian deposit money banks acquire forensic accounting experts and train more staff in forensic accounting to avoid modern-day fraud that has the potential to damage the institutions' performance.

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Appendix

Appendix A

Do files

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summarize FinancaialPerformance Frauddetection Fraudreporting Fraudprevention Litigation
tsset Banks Year, yearly
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xtreg FinancaialPerformance Frauddetection Fraudreporting Fraudprevention Litigation, re
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swilk FinancaialPerformance Frauddetection Fraudreporting Fraudprevention Litigation, lnormal
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xtline FinancaialPerformance
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xtline Frauddetection
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xtline Fraudreporting
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xtline Fraudprevention
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xtline Litigation
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Appendix B

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. hausman fixed random
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	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fixed	(B) random		
Frauddetec-n	.295765	.3446144	-.0488494	.
Fraudrepor~g	.1565818	.1651871	-.0086054	.
Fraudpreve-n	.3169442	.5764112	-.259467	.
Litigation	.1388924	.0328534	.1060389	.

b = consistent under Ho and Ha; obtained from xtreg  
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

```
chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
          = 1685.10
Prob>chi2 = 0.0000
(V_b-V_B is not positive definite)
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	Financ-e	Fraudd~n	Fraudr~g	Fraudp~n	Litiga~n
Financaial~e	1.0000				
Frauddetec~n	0.6747*	1.0000			
Fraudrepor~g	0.6589*	0.7554*	1.0000		
Fraudpreve~n	0.7628*	0.6783*	0.7241*	1.0000	
Litigation	0.5122*	0.6675*	0.6490*	0.5900*	1.0000

