Challenges of accountability in Nigeria: the role of deposit money bank

Abiola Ayopo Babajide, Adedoyin Isola Lawal,
Lanre Olaolu Amodu, Abiola John Asaleye,
Olabanji Olukayode Ewetan, Felicia Omowunmi Olokoyo and
Oluwatoyin Augustina Matthew
(Author affiliations can be found at the end of the article)

Abstract

Purpose – The unhealthy drive for deposit in the banking sector has pushed many banks into unethical practices, thereby resulting in high-level corruption cases in the banking sector. The purpose of this study is to investigate the short- and long-run linkages between bank net interest income and deposit liabilities interacted with corruption, to establish the influence of corruption in deposit mobilisation drive of banks in Nigeria. Also, the study analysed the causal relationship between selected bank variables and fraud.

Design/methodology/approach – The study used quarterly data on selected variables from 1Q 1993 to 4Q 2017 sourced from Nigerian Deposit Insurance Corporation (NDIC) annual reports and Central Bank of Nigeria (CBN) Statistical Bulletin of various issues. Deposit Money Bank various deposit liabilities are interacted with a corruption index and used as the independent variables, while bank earnings serve as the dependent variable. Error Correction Model (ECM) and Engel Granger approach to co-integration technique were used to analyse the data.

Findings – The findings reveal that various bank deposit liabilities interacted with corruption index has a negative effect on bank profitability in the long run, though only corrupt fixed deposit is statistically significant at the 5 per cent significance level. Bank total asset, total loan and advances and fraud have a significant effect on bank profitability at 1 and 10 per cent significance level. The findings also reveal that banks profit from corrupt fixed deposit and demand deposit in the short run.

Social implications – Text

Originality/value – The literature is awash with bank lending corruption and various institutional factors such as competition among banks, credit bureau and information sharing about borrowers, bank supervisory policies, loan loss provisioning, bank ownership structure and regulatory environment and anti-corruption measures. The aspect of deposit mobilisation and corruption has not been well researched in literature; this study, therefore, fills the gap in the literature by examining the extent deposit money banks contributed to corruption in Nigeria through their cutthroat deposit mobilisation drive.

Keywords Bank fraud, Challenges of accountability, Demand deposit corruption, Deposit money bank, Savings deposit corruption, Term deposit corruption

Paper type Research paper

1. Introduction

Transparency international in 2018 reported that the global average score for corruption is barely 43 per cent, indicating endemic corruption in most countries in the world resulting in a vicious circle of poverty, unequal distribution of wealth and power and denial of fundamental human right. People living in highly corrupt countries are faced continuously with extortion and bribery, dilapidated public infrastructure, injustice with attendant inability to seek redress in the law court to mention a few. World Bank, in 2017, reported that businesses and individuals pay a significant amount as bribe each year estimated to about 2 per cent of total world gross domestic product (GDP) and ten times the value of Oversea Development Assistance (ODA). The negative impact of corruption on the global economy far outweighs the estimated cash volume with an attendant consequence on economic growth and development (Jiang *et al.*, 2018). Issues of corruption are not only prevalent in low-income countries; they cut across all the regions of the world, but their severity is felt most in low-income developing nation where corrupt government official trample on people fundamental right with impunity.

Okereke and Kurotamunobaraomi (2016) opine that corruption in the public sector of the economy has a direct reflection on the private sector as a result of the policies, actions, activities and corruption tolerance level in public office. There are several corporate fraud cases in Nigeria. The banking sector is not insulated against it, as it often serves as a conduit pipe for a public officer to perpetuate corruption in Nigeria.

Banking institution exists to carry out financial intermediation in the society, among other functions (Amodu *et al.*, 2018). As a vital component of the financial system, banks play an essential role in the economy of a nation by allocating funds most efficiently from a surplus unit to the deficit unit of the economy. They provide specialised financial services that help in reducing the cost of information for both savers and borrowers, which results in inefficiency in the economy. Banks operate and remain in business by giving out a loan and earning interest on the investment. They accept deposits from individual, institutions and government and also give credit to individuals, businesses, financial institutions and governments with surplus funds (savings). Deposits and borrowed funds (liabilities of the bank) are also used to purchase securities (assets of the bank), while interest rates adopted by the monetary committee signal the price for borrowers, lenders and banks.

Financial intermediation implies the ability of the bank to mobilise funds from the surplus unit and channel it to the deficit unit for investment and development of the society. Savings mobilisation is one of the core functions of the bank; in fact, it is where the bank–customer relationship starts. Bank evolves the different financial product to mobilise fund from members of the society. In a typical commercial banking system, banks develop financial products such as demand deposit, time deposit and savings deposit product. Funds mobilise are channelled through the lending process to other bank customers who need capital to run their businesses. These categories of customers pay back the funds borrowed with interest, which constitute the main business of the bank in the society.

The need to mobilise funds for banking operations and maximising profit has pushed many banks into several unethical practices, thereby resulting in corruption in the banking sector. Corruption in Nigeria Deposit Money Banks is perceptible in three facades. First, by the employees of the bank who circumvent the rules and regulation of the bank to enjoy private gain at the expense of the stakeholders (Azelewa, 2002). Then, at the institutional level where corruption is instigated and condoned by management to achieve a pre-established objective, mostly associated with fraudulent accounting reporting (Section 40, EFCC, 2004). Finally, systemic corruption, where inter-bank collusion and acts contravene relevant guidelines to weaken the entire banking system. For instance, in 2009, the Nigerian

banking system was reported to lack a sound corporate governance structure resulting in unethical banking practices ranging from having large volumes of toxic assets, cronyism, insider dealings and weak board oversight. This led to the dissolution of the Board of directors of five deposit money banks and injection of NGN620bn (US$4.1bn) to revitalise the banks (Babajide *et al.*, 2013).

The truth is that banks play an integral role in enabling corruption to thrive. Corrupt officials need somewhere to hide stolen money, and the banks provide a haven when they do not probe every suspicious deposit. Laws and regulations applied in most countries in the world are based on internationally agreed standards, which require banks to carry out appropriate checks to detect the proceeds of corruption and other crimes, as well as money intended for terrorist groups. However, many banks across the world do not comply with these laws: some of the banks turn a blind eye when suspicious funds are being laundered, some intentionally accept such funds for private gains while some as a result of weakness in their internal control enable illegal transactions to continue. Magu (2016) opines that the banks in Nigeria are creating enabling environment for looters of public fund. According to him:

> [. . .] it is as if the banks are aiding the looter by providing an enabling environment for them to hide the stolen funds, thereby allowing corruption to thrive in the country (Magu, 2016).

The truth is that many banks leave their door wide open for corrupt individuals to launder their funds.

When banks do not attend to their duties with a sense of responsibility in probing suspicious funds, they may end up handling money for drug cartels, human traffickers, arms dealers, fraudsters and other dangerous criminals. These banks end up giving these funds a veneer of legitimacy that they otherwise would not have and leaving the criminals free to perpetrate their crimes undetected, thereby creating innumerable victims around the world, especially in developing countries. In 2015, Global Witness reported how one of the biggest banks in the world, HSBC Switzerland enabled tax evasion on a large scale, handled proceeds of drug trafficking and illusions crime, breaking laws and ignored the risk of terrorism financing. BNP Paribus, a French bank, pleaded guilty in 2014 to knowingly and willfully break US laws concerning funds originating from Sudan, Iran and Cuba. Evidence levied against the bank shows that the senior executives of the bank ignored several warnings from the compliance staff on transactions involving Sudanese customers suspects connected to the Darfur genocide and harbouring Osama Bin Laden account. This was not the first time the bank was being indicted; in 2004, the same bank was sanctioned for failure to comply with money laundering laws and was forced to sign a memorandum of understanding (Global witness, 2015).

The financial services sector corruption can have profound and enormous implication for an economy, and because of global integration, its consequence on the global economy is more damming. This has become very glaring after the 2008 financial crisis, as some banks were found to be pervasive in money laundering, interest rate rigging and tax evasion not only for themselves but for their clients also (Bhat and Ginodia, 2018).

Even though the lack of accountability and transparency are contributory factors to many social-economic ills in our society, mainly through banks, it has not been given adequate attention in economic literature; hence, appropriate solutions in tackling it has not been proffered. The literature is awash with bank lending corruption and various institutional factors such as competition among banks, credit bureau and information sharing about borrowers, bank supervisory policies, loan loss provisioning, bank ownership structure and regulatory environment and anti-corruption measures. The aspect of deposit

mobilisation and corruption has not been well researched in literature; this study, therefore, fills the gap in the literature by examining the extent deposit money banks contributed to corruption in Nigeria through their cutthroat deposit mobilisation drive. The remaining part of the paper is divided into four sections. Following the introduction is the theoretical framework and literature review in Section 2, the methodology used is discussed in Section 3, result and discussion are presented in Section 4,while summary, conclusion and policy implication are presented in Section 5.

2. Theoretical framework

The theoretical framework for this paper is based on the financial intermediation theory and production theory, which appropriately explain the input and output services provided by banks. The former posits that banks transform deposit portfolio into a loan (credit) portfolio (Baltensperger, 1980; Dewatripont and Tirole, 1994; Osuagwu and Nwokoma, 2017). The latter approach conceptualises deposits as input and loans as output (Resti, 1997; Matthews and Thompson, 2008; Osuagwu and Nwokoma, 2017). The classical proposition on banking is that banks are financial intermediaries that intermediate funds between surplus units or lenders and deficit units or borrowers (Bhattacharya and Thakor, 1993; Osuagwu and Nwokoma, 2017). Traditional theories of financial intermediation and current financial intermediation theory are based on the idea that financial intermediaries serve to reduce transaction costs and informational asymmetries. Contemporary financial intermediation theory posits that developments in information technology, deregulation, deepening of financial markets and so on have contributed to a reduction in transaction costs and informational asymmetries.

Financial intermediaries assist the efficient functioning of markets, and any factor that affects the amount of credit channelled through financial intermediaries can significantly affect macroeconomic variables. There are two schools of thought in the literature that formally explain the existence of financial intermediaries. The first strand emphasises financial intermediaries' provision of liquidity. The second strand focuses on financial intermediaries' ability to transform the risk characteristics of assets. In both cases, financial intermediation can reduce the cost of channelling funds between borrowers and lenders, leading to an efficient allocation of resources and improved liquidity of assets (Iris and Grimes, 2003). The illiquidity of assets provides both the rationale for the existence of banks and their vulnerability to runs (Diamond and Philip, 1983). A shift in expectations causes a bank run.

The modern theory of financial intermediation focuses on the functions of financial intermediaries, the way in which the financial intermediaries influence the economy on the whole and the effects of government policies on financial intermediaries. Gorton and Winton (2003) affirm that it would be hard to distinguish between banks and other types of financial intermediaries, as banks offer other financial services such as insurance, brokerage and investment, in addition to their deposit and credit functions.

2.1 Literature review

The plague of corruption is a global phenomenon, which if not timely and collectively addressed, can have a shattering effect on the global economy. It can destroy public trust, undermine the rule of law, skew competition, impede cross-border investment and trade and distort resource allocation (G20, 2015). It is the responsibility of the world leaders to stand together to fight this monster before it destroys the world economy. Global Witness in 2009 published a report highlighting undue diligence of the world's largest bank in facilitating corruption in developing countries (Global Witness, 2015). Palmer (2009) assert that

corruption in developing countries is limited to not only public officials taking bribe but also wholesome stealing of state assets and illicit capital flight out of developing countries. This is made possible as a result of loopholes in the international financial system and the cooperation of financial institutions in the developed world that create opportunities for illegal money transfer, thereby undermining the international effort at eliminating poverty.

Bhat and Ginodia (2018) posit that with the increasing interconnectedness of the global economy, ignoring corruption in the financial service industry can have a profound and far-reaching consequence on the world economy as observed in the aftermath of the 2008 crisis as evidence of interest rate rigging, money laundering and tax evasion are found in many of the big banks by regulators. To help policy-makers and other stakeholders to understand transmission mechanism of corruption into the financial industry, G20 (2015) identified the critical role of a financial institution in stemming the wave of corruption in a country. This they can do by identifying politically exposed persons (PEPs) among their prospective investors and clients and apply enhanced due diligence to double-check every transaction by such people and be sure which one is legitimate. Many banks often fail to carry out due diligence but continue to provide the corrupt individual with a place to hide their money. A report by the UK's financial regulator by Transparency International in 2011 shows that more than a third of the banks inspected in that year lacked effective means to identify bank clients as PEPs and over half of them did not meaningfully apply measures to enhanced due diligence in high-risk situations (Transparency International, 2015). Global Witness (2015) attest to the fact that many banks aid and abet criminal behaviour. Many violate the laws designed to stop them from taking ill-gotten gains, which in turn are not adequately enforced by regulators.

In some countries, legal loopholes mean it can be possible for banks to handle ill-gotten gains without technically breaking any rules. Ribadu (2015) declared that the Nigerian banking system is prone to corruption and not wholly safe from abuses, despite several policies by the government such as the introduction of BVN and report of individual and corporate cash lodgments and transfers that exceed prescribed limits by the Central Bank of Nigeria. Abuses in the system and financial infractions occur with the involvement of banks and bankers. Emefiele (2017) said there is a need for governments and institutions around the world to take the issue of the flow of capital and funds more seriously. Proceeds of crime, which he called dirty money, should not find their way into the banking sector, and it is time for governments to take this more seriously because failure to do this is destructive in the society. Leaders must be prepared to do everything possible to combat crime and corruption, particularly money laundering because of its grave implication (Shehu, 2005).

Larmode (2012) enumerates how banks and bank officials aid corruption in the country and shield persons suspected of financial crime. Some of the bank's actions range from non-compliance with Know-Your-Customer (KYC) principles, doctoring/non-disclosure of correct position of customer's statement of account, lowing secrecy surrounding private banking, ignoring suspected money laundering and refusal to check and monitor politically exposed person account. Such unethical practices undermine the economic development of a country, and unfortunately, almost all Nigerian banks are involved. Some banks in the country allegedly helped in concealing stolen money; Magu (2016) vowed that banks and their officials who helped in concealing stolen public funds would soon face trial. Unfortunately, while Magu's stand is laudable, judicial technicalities and ineptitude have made it very difficult for the Economic and Financial Crime Commission (EFCC) to secure timely convictions in many of the bank corruption cases. Barth *et al.* (2016) assert that a well-functioning banking system can help reduce poverty and income inequality, but banking system is susceptible to corruption especially in developing and transition economies which

are characterized by weak institution and judicial system, inadequate laws and fragile supervisory and regulatory environment which will not be able to contain corruption. The banking system in such a situation will not be able to perform its primary function of efficient allocation of scarce resources.

2.2 Empirical review

Barry *et al.* (2016) examined the influence of bank ownership structure, regulatory environment and economic development on bank lending corruption. The findings revealed that corruption was higher when a state-owned bank or family-owned bank provided a higher proportion of credit to the economy. Also, the stronger regulatory environment was effective in the case of family-owned bank-induced corruption but not sufficient for state-owned bank-induced corruption. Jiang *et al.* (2018) examined the influence of lending corruption on bank loan contracting using World Bank business environment survey. They found that the bank gave favourable loan term to borrowers with higher financial constraints in countries with more lending corruption. They also found that participating banks were less willing to lend more in loan syndication market in countries where lending corruption is high and firms preferred private bank lending to public bond, and they were more indebted. Banks in such countries have poor asset quality, worse earning performance and are prone to high bank failure.

In another study, Sun *et al.* (2018) investigated the effect of the anti-corruption measure on bank lending decision to state- and non-state-owned enterprises in China, using micro-level lending data from one of the largest state-owned bank. They found that state-owned enterprises receive favourable borrowing terms than non-state-owned before the anti-corruption campaign, but after the campaign, non-state-owned enterprises received more favourable borrowing terms with a lower interest rate, longer duration and more substantial credit amount. Qi and Ongena (2019) examined limiting access to bank credit as a result of corruption on firm growth, using a firm-level measure covering 12,006 firms across 22 transition economies. The findings show that supply-side rather than demand-side factors mainly drive the detrimental impact and that the loss of access is more severe where there is a limited foreign bank in the vicinity of the firm and when the competition is very low or very high in the local banking market. Financing constraint as a result of corruption significantly constrained future firm growth. Okereke and Kurotamunobaraomi (2016) concluded that corruption in deposit money bank in Nigeria does not significantly impede Nigeria's economic growth, while Arshad and Rizvi's (2013) research established that corruption has a significant positive impact on the bank's profitability, lending credence to the fact that banks are thriving from corruption in Malaysia.

2.3 Choice of variables and data source

Data description and source are presented in Table I. The study used quarterly data on selected variables from 1Q 1993 to 4Q 2017 sourced from Nigerian Deposit Insurance Corporation (NDIC) annual reports and Central Bank of Nigeria (CBN) Statistical Bulletin of various issues. The study used the net interest income (NII) as a proxy for bank profitability. The study argues that as the banking institution core business is financial intermediation, NII which is the difference between interest generated from bank assets (such as commercial, mortgage and personal loan) and interest paid on interest-bearing liabilities (such as deposit liabilities) is the most appropriate proxy for bank profitability; this is the dependent variable.

Deposit money bank's various deposit liabilities are interacted with a corruption index and used as independent variables for the study. The deposit liabilities used are savings

S/No.	Variable	Abbreviation	Data description and sources	Apriori
1.	Net interest income	NII	Net interest income is the difference in income between the revenue generated from a bank's assets and the expenses related to paying its liabilities. Data Source: NDIC Annual Reports	
2.	Bank total asset	BTA	Bank total asset is the combined bank total fixed asset and current asset. Source: CBN statistical bulletin various issue	+
3.	Savings deposit interacted with corruption	COR_SD	Savings deposit are deposit account held with a financial institution that pays interest and does not allow for direct withdrawal through cheques. Interest is usually paid to the depositors at the end of the month provided withdrawal limit is not exceeded. When interacted with corruption, it becomes a savings deposit acquire through corrupt means. Source: CBN Statistical Bulletin, and Transparency International report, various issues	–
4.	Demand deposit interacted with corruption	COR_DD	A demand deposit is a bank account with a bank or other financial institution that allows the depositor to withdraw from the account without warning or with less than seven days' notice. A demand deposit is a vital component of the M1 money supply. Interacted with a corruption index implies demand deposit acquired through corrupt means. Source: CBN Statistical Bulletin and Transparency International report, various issues	–
5.	Fixed deposit interacted with a corruption index	COR_FD	A fixed deposit account is an interest-bearing bank account that has a fixed date of maturity, the funds available in these accounts must be held for a fixed term with a clause that the depositor withdraws from the account only by giving prior notice. Failure to adhere to the conditions attract penalties on the part of the depositor for early withdrawal. Source: CBN Statistical Bulletin and Transparency International report, various issues	–
6.	Bank loan and advances	FSGLA	Bank total loan and advances to deposit money bank. Source: Statistical bulletin various issues	+
7	Total fraud amount	TFA	Total fraud amount in the banking sector. Source: NDIC annual report, various issues	–

Sources: Authors compilation (2019); CBN: Central Bank of Nigeria; NDIC: Nigeria Deposit Insurance Corporation

Table I.
Data description and sources

deposit, fixed deposit and demand deposit. Other independent variables are bank asset, bank total loan and advances and the total amount of fraud. All the variables and the apriori expectation are presented in Table I.

2.4 Model and estimation techniques
The purpose of this study is to establish the relationship between bank profitability and corrupt deposit liabilities in Nigeria. To achieve this objective, the following specific objectives are investigated:

- First, the study investigates the short and long-run linkages between bank NII and deposit liabilities interacted with corruption, to establish the influence of corruption in deposit mobilisation drive of banks on earnings.
- Second, it analyses the causal relationship between selected bank indicators and fraud.

The model in the implicit form:

$$NII = f(BTA, COR\_DD, COR\_SD, COR\_FD, BTLA, TFA) \tag{1}$$

NII = banks net interest income;
BTA = banks total asset;
COR_DD = banks corrupt demand deposit;
COR_SD = banks corrupt savings deposit;
COR_FD = banks corrupt fixed deposit;
BTLA = bank total loan and advance; and
TFA = total amount of fraud in the banking sector.

The model is an explicit form can be written as

$$NII_t = \alpha_0 + \alpha_1 TA + \alpha_2 COR\_DD + \alpha_3 COR\_SD + \alpha_4 COR\_FD$$
$$+ \alpha_5 BTLA + \alpha_6 TFA + \varepsilon_t \tag{2}$$

To estimate the Error Correction Model (ECM) or Engel Granger approach to co-integration, the unit root is carried out for the series using the Augmented Dickey–Fuller approach; the equation is given as:

$$\Delta Z_t = \delta Z_{t-1} + \sum_{i=1}^{n} \phi_i \Delta Z_{t-i} + \mu_t \tag{3}$$

If the series is not stationary at level form, then it could be stationary at the first difference form. If the series are integrated of the same order, then it is the tendency of long-run relationship (Engle and Granger, 1987; Asaleye *et al.*, 2018). Equation (2) is then estimated using the least square technique. The null hypothesis of no presence of co-integration is further tested. In the presence of co-integration, the estimated equation will be super consistent and gives the long-run behaviour. Rewriting equation (2) as:

$$NII_t = \alpha_0 + \alpha_1 K_t + \varepsilon_t \tag{4}$$

In equation (4), K_t represents the independent variables (BTA, COR_DD, COR_SD, COR_FD, BTLA and TFA). The ECM relates the change in one variable to past equilibrium errors and the previous changes in the variables. Therefore, the ECM is given as:

$$\Delta NII_t = \beta_1 + \Delta K_t - \psi R_{t-1} + \nu_t \tag{5}$$

In equation (5), $R_t = NII_t - (\alpha_0 + \alpha_1 K)$ refers to the "disequilibrium error correction term." The long-run term is assumed to be zero; however, if there is derivation in the long run, then it will be non-zero. The coefficient ψ is the error correction term, which measures the speed of adjustment. Other preliminary tests considered apart from the unit root test are a

correlation and descriptive analysis. Further, the study carried out causality to determine the direction of causality using Granger approach.

3. Results

Table II presents the correlation analysis of the series used in this study, which shows the pair relationship between the series. The emphasis is on the dependent variable (NII). It can be depicted from the result that there is a weak negative relationship between bank NII and BTA, COR_DD, COR_SD, COR_FD and TFA with –0.13561, –0.44423, –0.39961, –0.49974 and –0.26997, respectively. However, a positive correlation with bank total loan advances with the value of 0.29066.

Table III presents the descriptive statistics of the series. The total NII has the highest mean, then followed by corrupt fixed deposit (COR_FD), corrupt demand deposit (COR_DD), bank total asset (BTA), corrupt savings deposit (COR_SD), Bank Total Loan and Advances (BTLA) and the total amount of fraud (TFA). Likewise, NII has the highest standard deviation, and BTA has the lowest standard deviation. All the series are positively skewed.

The unit test is carried out using the Augmented Dickey–Fuller approach, as presented in Table IV. All the series are not stationary at 5 per cent significant level; however, they are integrated of order 1. Based on the outcome of the unit root result, the study proceeds to estimate the Engel Granger approach for co-integration. First, the long-run form of the equation is estimated using the least square technique in which the residual is generated. The stationary of the residual was used to validate the presence of long run among the series.

Series	NII	BTA	COR_DD	COR_SD	COR_FD	BTLA	TFA
NII	1						
BTA	−0.13561	1					
COR_DD	−0.44423	−0.030057	1				
COR_SD	−0.39962	0.016184	0.35336	1			
COR_FD	−0.49974	0.14380	−0.60800	−0.55130	1		
BTLA	0.29066	−0.209106	−0.42725	−0.383105	0.58526	1	
TFA	−0.26997	−0.22671	0.59201	0.51581	−0.470660	−0.26543	1

Source: Authors' Computation using e-views 10

Table II.
Correlation analysis

	NII	TA	COR_DD	COR_SD	COR_FD	BTLA	FA
Mean	18,224,557	27,476.52	3,560,166	1,091,917	15,690,061	142,088.7	12,441.44
Median	785.2278	21,912.19	1,187,804.	367,420.0	1,054.859	14,539.71	10,006.07
Maximum	1.39E+08	100,812.5	11,033,318	3,963,874	67,487,917	1,019,047	43,352.61
Minimum	−19,651,190	−12,351.20	47,071.80	2,536.488	−9,176,873	−139,473.0	760.0372
SD	33,315,429	24,657.23	3,977,946	1,285,729.	21,492,591	248,348.3	9,757.480
Skewness	2.045196	1.013329	0.742521	1.072542	0.879827	2.088761	1.290283
Kurtosis	6.602537	3.482535	1.920661	2.731058	2.248491	6.495826	4.233537
Sum	1.82E+09	2,747,652	3.56E+08	1.09E+08	1.57E+09	14,208,873	1,244,144
Sum Sq. Dev.	1.10E+17	6.02E+10	1.57E+15	1.64E+14	4.57E+16	6.11E+12	9.43E+09
Observations	100	100	100	100	100	100	100

Source: Authors' computation using e-views 10

Table III.
Descriptive statistics

Table V presents the long-run relationship using the "Bank Net Interest Income" as the dependent variable. The Durbin–Watson (DW) statistics helps to detect autocorrelation; region closer to 2 shows no autocorrelation. The statistics value of the DW is 1.838797, which is closer to 2. The R-squared and the adjusted R-squared measure the goodness of fit. It is depicted from both the adjusted R-squared and the R-squared with the values of 0.78796 and 0.887972, respectively, that is more than 70 per cent variations in the dependent variables are explained by the independent variables. The F-statistics measures the joint significance of the independent. With a probability value less than 0.01, the independent variables jointly explained the dependent variable at 1 per cent significance level. The total bank asset (BTA) and bank total loan and advances (BTLA) are statistically significant at the level of 1 per cent. While fixed deposit (COR_FD) and the total fraud amount (TFA) are statistically significant at 5 and 1 per cent, respectively. The corrupt demand deposit (COR_DD) and corrupt savings deposit (COR_SD) are not statistically significant. The variables BTA, TFA and BTL, have a significant positive relationship with NII; this means an increase in one unit of each of the variables, holding other constant will result to positive change in the dependent variable (NII) in the long run. However, there is a negative relationship between NII and COR_FD; this shows that an increase in COR_FD has a negative long-run implication on NII.

Table VI presents the result of the stationary test of the residual generated from the least square estimation. The Augmented Dickey–Fuller test statistic is –3.907066 and the critical

Series	Level	First diff	Order	Level	First diff	Order
NII	0.332345	−3.149507	I (1)	−2.102763	−5.389468	I(1)
BTA	−2.210202	−2.894601	I (1)	−1.953952	−5.435146	I(1)
COR_DD	0.277300	−5.674088	I (1)	0.371592	−5.866196	I(1)
COR_SD	0.621247	3.011650	I (1)	1.227715	−5.966308	I(1)
COR_FD	−1.619510	−3.372943	I (1)	−1.419385	−5.247553	I(1)
BTLA	−2.075040	−2.983517	I (1)	0.265256	−5.179855	I(1)
TFA	−1.870171	−2.995616	I (1)	−2.391303	−6.231947	I(1)

Table IV.
Unit root test

Source: Authors computation using e-views 10

	Using NII as the dependent variable			
Variable	Coefficient	Standard error	t-statistic	Probability
BTA	138.1812*	25.88969	5.337306	0.0000
COR_DD	−0.114713	0.354365	−0.323713	0.7469
COR_SD	−0.873355	1.016196	−0.859436	0.3923
COR_FD	−0.177996**	0.074489	−2.389565	0.0480
BTLA	142.1963*	5.755901	24.70443	0.0000
TFA	97.76176***	51.77117	1.888343	0.0621
C	−4006911.0*	1030908.	−3.886779	0.0002
R^2	0.887972	Durbin–Watson stat		1.838797
Adjusted R^2	0.787196	F-statistic		1,273.149
		Prob. (F-statistic)		0.000000

Table V.
Long-run
relationship result

Source: Authors' computation

values are as follows: –3.504727, –2.893956 and –2.584126 for 1, 5 and 10 per cent, respectively. The probability value is 0.0030, which is less than 0.05. Hence, the residual is stationary at 5 per cent significance level. This shows the presence of co-integration among the series.

Table VII presents the short-run dynamics; the series is in first difference form and one lag period of the residual is indicated by ECT (–1) referred to as the error correction. The error correction term measures the speed of adjustment. Theoretically, it must be less than 1, negative and statistically significant to validate the presence of long-run relationship among the series. The coefficient of the error correction term is –0.078272, and it is statistically significant at the 5 per cent level. The indication of this result shows that the system will adjust to equilibrium at the speed of about 8 per cent per annum. The variables BTA, COR_TD, BTLA and TFA are statistically significant at 1 per cent, while COR_DD is statistically significant at 5 per cent significance level. The variables BTA, COR_DD, COR_FD and BTLA have a positive short-run relationship with the dependent variable. Holding all other variables constant, an increase of one unit will lead to an increase in the dependent variable. The variable COR_SD is not statistically significant, while there is a negative short-run relationship between NII and TFA.

Table VIII present the diagnostic checks using the Histogram normality test, Breusch–Godfrey LM Test and ARCH to check for normality, serial correction and equal variance of the residuals, respectively. The value of the histogram normality statistics is 14.07715 with a

Null hypothesis: ECT has a unit root		
Exogenous: constant		
Lag length: 9 (Automatic - based on SIC, maxlag = 12)		
	t-statistic	Prob.*
Augmented Dickey–Fuller test statistic	−3.907066	0.0030
Test critical values		
1% level	−3.504727	
5% level	−2.893956	
10% level	−2.584126	
Source: Authors' computation		

Table VI.
Residual unit root test

| | Using D(NII) as the dependent variable | | | |
Variable	Coefficient	Standard error	t-statistic	Prob.
D(BTA)	117.7690*	20.09481	5.860671	0.0000
D(COR_DD)	1.172145**	0.394650	2.970087	0.0389
D(COR_SD)	−1.265662	1.147496	−1.102978	0.2729
D(COR_FD)	0.305801*	0.098221	3.113390	0.0025
D(BTLA)	123.5837*	6.204006	19.91999	0.0000
D(TFA)	−6.666734*	1.408940	−4.731737	0.0050
ECT(−1)	−0.078272**	0.034693	−2.25613	0.0424
C	180673.0	135725.2	1.331168	0.1865
Source: Authors' computation using e-views 10				

Table VII.
Short-run dynamics

probability value of 0.18188, which is not statistically significant at the 5 per cent significance level. Hence, the null hypothesis that the errors are not normally distributed cannot be accepted. Also, the value of the observed R-squared statistics is 81.64770 with a probability value of 0.87421, which is not statistically significant and resulted to the rejection of the null hypothesis that there is a serial correlation among the residual. Finally, the value of the ARCH statistics is 79.62750 with a probability value of 0.42518; the null hypothesis that the model does not have equal error variance is rejected. Given the outcome of the diagnostic checks, it was concluded that the model is correctly specified.

Table IX presents the pairwise causality result. Evidence from the result shows no causality for most of the series except for corrupt fixed deposit (COR_FD) and NII; bank total loan advances (BTLA) and NII; corrupt savings deposit (COR_SD) and corrupt demand deposit (DD) in which there is a bi-directional relationship.

3.1 Implications of findings

The research outcomes from the study adequately address the research questions and objectives set. The study set out to establish the role of deposit money banks and the challenges of accountability and development in Nigeria. In specific terms, it analysed the impact of corrupt deposit liabilities on the long-term and short-term profitability of the banks. The findings have several significant implications for policy-makers, regulators, the banking institutions, academicians and researchers in the study area.

The consequences of corruption in an economy are more devastating, particularly in a developing economy. The disposition of the banks, in aiding and abetting corrupt government officials to steal public funds and providing a haven for them to hide their illicit fund or legalise the proceed of corruption because of their drive for profit is the motivation for this study. Previous studies have examined bank lending corruption and various dimension and consequences (Barth *et al.*, 2016; Barry *et al.*, 2016; and Jiang *et al.*, 2018). The uniqueness of this study from previous studies on corruption in the banking sector is that it fills the gap in the literature on the other side (i.e. bank deposit generation) of financial intermediation by examining the influence of corrupt deposit liabilities on the going concern of the banking institution.

The study asserts that the banks thrive on profit from corrupt deposit liabilities obtained from individual members of the society in the short run but in the long run; such deposit will hurt the banks future going concern and decline bank profitability for as much as 17 per cent. This finding supports Arshad and Rizvi (2013) conclusion that corruption has a significant positive impact on the bank's profitability but only in the short run in the case of Nigeria. This implies that as the banking institution thrives on corrupt deposits in the short run, the profitability will be short-lived, bringing about bank distress, which will result eventually in bank failure and by implication retard economic growth of the country. Fraud committed by bank management and staff against the bank retards the profitability of the bank by 6.6 and 98 per cent in the short run and long run, respectively. This implies that

Test carried out	Jarque–Bera value	Obs.*R^2	Probability
Normality	14.07715	–	0.18188
Serial correlation	–	81.63670	0.86421
Heteroskedasticity (ARCH)	–	79.62750	0.42518
Source: Authors' computation			

Table VIII.
Diagnostic checks

Null hypothesis	F-statistic	Prob.	Direction of causality
BTA does not Granger Cause NII	0.11480	0.8917	Independence
NII does not Granger Cause BTA	0.47454	0.6237	
COR_DD does not Granger Cause NII	0.92167	0.4015	Independence
NII does not Granger Cause COR_DD	0.43293	0.6499	
COR_SD does not Granger Cause NII	0.73515	0.4822	Independence
NII does not Granger Cause COR_SD	0.23273	0.7928	
COR_TD does not Granger Cause NII	8.76588	0.0003	Bi-directional
NII does not Granger Cause COR_FD	14.5621	3.E-06	
BTLA does not Granger Cause NII	4.56092	0.0129	Bi-directional
NII does not Granger Cause BTLA	4.73283	0.0110	
TFA does not Granger Cause NII	0.78794	0.4578	Independence
NII does not Granger Cause TFA	0.33225	0.7182	
COR_DD does not Granger Cause BTA	0.08198	0.9214	Independence
BTA does not Granger Cause COR_DD	0.19785	0.8208	
COR_SD does not Granger Cause BTA	0.08431	0.9192	Independence
BTA does not Granger Cause COR_SD	0.08971	0.9143	
COR_TD does not Granger Cause BTA	0.20397	0.8159	Independence
BTA does not Granger Cause COR_FD	0.97076	0.3826	
BTLA does not Granger Cause BTA	0.31797	0.7284	Independence
BTA does not Granger Cause BTLA	0.12775	0.8802	
TFA does not Granger Cause BTA	0.05742	0.9442	Independence
BTA does not Granger Cause TFA	0.29634	0.7442	
COR_SD does not Granger Cause COR_DD	2.94406	0.0576	Bi-directional
COR_DD does not Granger Cause COR_SD	13.3838	8.E-06	
COR_FD does not Granger Cause COR_DD	1.03605	0.3589	Independence
COR_DD does not Granger Cause COR_FD	0.76754	0.4671	
BTLA does not Granger Cause COR_DD	0.42564	0.6546	Independence
COR_DD does not Granger Cause BTLA	0.71898	0.4899	
TFA does not Granger Cause COR_DD	1.19021	0.3087	Independence
COR_DD does not Granger Cause TFA	0.70547	0.4965	
COR_FD does not Granger Cause COR_SD	0.53850	0.5854	Independence
COR_SD does not Granger Cause COR_FD	0.58961	0.5566	
BTLA does not Granger Cause COR_SD	0.21984	0.8031	Independence
COR_SD does not Granger Cause BTLA	0.58714	0.5580	
TFA does not Granger Cause COR_SD	0.22539	0.7986	Independence
COR_SD does not Granger Cause TFA	0.34503	0.7091	
BTLA does not Granger Cause COR_FD	7.79890	0.0007	Bi-directional
COR_FD does not Granger Cause BTLA	4.79623	0.0104	
TFA does not Granger Cause COR_FD	0.99627	0.3732	Independence
COR_FD does not Granger Cause TFA	0.92556	0.3999	
TFA does not Granger Cause BTLA	0.74415	0.4779	Independence
BTLA does not Granger Cause TFA	0.31360	0.7316	

Source: Authors' computation

fraud perpetrated in the banking sector can erode the profitability of the bank in the long run. This finding negates the findings of Okereke and Kurotamunobaraomi (2016) that corruption in deposit money bank in Nigeria does not significantly impede Nigeria's economic growth. The failure of the banking sector of any nation has a significant implication on the stability and growth of the economy.

It is important to note that when banks stick to their legitimate business of giving out loan and advances, the bank profitability grows by 123 and 142 per cent in the short run and

the long run, respectively. As the banks accumulate legitimate asset, the bank profit also grows by 117 and 138 per cent in the short run and the long run, respectively, which means that by concentrating on their legitimate business, bank earnings grow faster both in the short run and in the long run.

From these results, policy-makers and regulators must strengthen anti-graft measures in the bank to ensure that illicit funds do not find their way into the banking sector, as these funds have a negative impact on the long-run profitability of the banks. The banking institutions must resist every temptation to bring in corrupt deposits into the banking sector because of its future implication.

The study fills the gap in the literature on the role of deposit money banks on corruption by providing empirical evidence on the implication of corrupt deposit liabilities on future stability and going concern of banking institutions in Nigeria.

Reference

Amodu, L., Agedah, D., Oyero, O. and Okorie, N. (2018), "From service to engagement: an assessment of online public relations in Nigerian banks", *Proceedings of the 32nd International Business Information Management Association Conference IBIMA 2018- Vision 2020: Sustainable Economic Development and Application of Innovation Management for Regional expansion to Global Growth*, Seville, 15-16 November, pp. 7570-7577.

Arshad, S. and Rizvi, S.A. (2013), "Impact of corruption on bank profitability: an analysis of Islamic banks", *International Journal of Business Governance and Ethics*, Vol. 8 No. 3, pp. 195-209.

Asaleye, A.J., Popoola, O., Lawal, A.I., Ogundipe, A. and Ezenwoke, O. (2018), "The credit channels of monetary policy transmission: implications on output and employment in Nigeria", *Banks and Bank Systems*, Vol. 13 No. 4, pp. 103-118, doi: 10.21511/bbs.13(4).2018.10

Azelewa, J.U. (2002), *Public Enterprises Management in Nigeria*, Ambika Press, Abuja.

Babajide, A.A., Olokoyo, F.O. and Adegboye, F.B. (2013), "Bank failure prediction in Nigeria: a survival analysis approach", *Proceedings of the 22nd International Business Information Management Association Conference, IBIMA 2013-Creating Global Competitive Economies: 2020 Vision Planning and Implementation*, Rome; 13-14 November, 3, pp. 2180-2199.

Baltensperger, E. (1980), "Alternative approaches to the theory of the banking firm", *Journal of Monetary Economics*, Vol. 6, pp. 1-37, available at: http://ideas.repec.org/a/eee/moneco/v6y1980i1p1-37.html (accessed 30 July 2019).

Barry, T.A., Lepetit, L. and Strobel, F. (2016), "Bank ownership structure, lending corruption and the regulatory environment", *Journal of Comparative Economics*, Vol. 44 No. 3, pp. 732-751.

Bhat, A. and Ginodia, S. (2018), "Combating corruption in the banking industry – the Indian experience", AZB and Partners, Getting the Deal Through, Tuesday 20 March 2018, available at: https://gettingthedealthrough.com/area/2/article/29216/anti-corruption-regulation-2018-combating-corruption-banking-industry-indian-experience/ (assessed 30 July 2019).

Bhattacharya, S. and Thakor, A. (1993), "Contemporary banking theory", *Journal of Financial Intermediation*, Vol. 3 No. 1, pp. 2-50.

Dewatripont, M. and Tirole, J. (1994), "A theory of debt and equity: diversity of securities and manager-shareholder congruence", *The Quarterly Journal of Economics*, Vol. 109 No. 4, pp. 1027-1054.

Diamond, D.W. and Philip, H.D. (1983), "Bank runs, deposit insurance, and liquidity", *Journal of Political Economy*, Vol. 91 No. 3, pp. 401-419.

EFCC (2004), "Economic and financial crimes commission (EFCC) establishment act 2004", available at https://efccnigeria.org/efcc/about-efcc/the-establishment-act (accessed 30 August 2019).

Emefiele, G. (2017), "Nigeria banking sector still prone to corruption", New Telegraph Newspaper online article December 13, 2017, Reported by Abdulwahab Isa Abuja, available at: www.

newtelegraphng.com/2017/12/nigeria-banking-sector-still-prone-corruption-ribadu/ (assessed 02 September 2019).

Engle, R.F., C.W. and Granger, C.W. (1987), "Co-integration and error correction: representation, estimation, and testing", *Econometrica*, Vol. 55 No. 2, pp. 251-276.

Global Witness (2015), "Banks and dirty money", available at: www.globalwitness.org/en/campaigns/corruption-and-money-laundering/banks-and-dirty-money/ (accessed 30 July 2019).

Gorton, G. and Winton, A. (2003), "Chapter 8, financial intermediation", *Handbook of the Economics of Finance*, 1, Elsevier B.V, Corporate Finance SUPPL. PART A, pp. 431-552, available at: https://doi.org/10.1016/S1574-0102(03)01012-4

Iris, C. and Grimes, A. (2003), "Asymmetric information, financial intermediation and the monetary transmission mechanism: a critical review", Working Paper No 03/19, New Zealand Treasury, Wellington.

Jiang, L. Ng, J. and Wang, C. (2018), "Lending corruption and bank loan contracting: cross-country evidence", 29 November, available at: https://ssrn.com/abstract=3292740, http://dx.doi.org/10.2139/ssrn.3292740

Larmode, I. (2012), "Nigeria banks aid corruption", Premium Times Article published September 10, 2012, reported by Sani Tukur.

Magu, A. (2016), "Banks creating fertile ground for corruption", 21 September, Reported by Fidelis Soriwei and Olaleye Aluko, available at: https://punchng.com/banks-creating-fertile-ground-corruption-says-magu/ (accessed 30 July 2019).

Matthews, K. and Thompson, J. (2008), *The Economics of Banking*, 2nd ed., John Wiley, NJ.

Okereke, E.J. and Kurotamunobaraomi, T. (2016), "Corruption in deposit money banks and economic growth in Nigeria (1999-2013)", *Journal of Accounting and Financial Management*, Vol. 2 No. 1, pp. 78-90.

Osuagwu, E.S. and Nwokoma, N. (2017), "Empirical assessment of the competitive conduct of Nigerian banks in a post-consolidation era", *Research in International Business and Finance*, Vol. 41, pp. 412-422.

Palmer, R. (2009), "Profiting from corruption: the role and responsibility of financial institutions", Global Witness, available at: http://globalwitness.org, www.U4.no (accessed 30 July 2019).

Qi, S. and Ongena, S. (2019), "Will money talk? Firm bribery and credit access", *Financial Management*, Vol. 48 No. 1, pp. 117-157.

Resti, A. (1997), "Evaluating the cost efficiency of the Italian banking market: what can be learned from the joint application of parametric and non-parametric techniques", *Journal of Banking and Finance*, Vol. 21 No. 2, pp. 221-250.

Ribadu (2015), "Nigeria: how to lose $35bn", The Guardian, available at www.theguardian.com/world/2012/nov/13/nigeriaoil-corruption-ridabu, (accessed 30 July 2019).

Shehu, A.Y. (2005), "Combating corruption in Nigeria – bliss or bluster?", *Journal of Financial Crime*, Vol. 12 No. 1, pp. 69-87, available at: https://doi.org/10.1108/13590790510625061

Sun, C. Xu, J. and Zhang, Y. (2018), "Anti corruption and bank lending", First Draft January 2018, available at www.aeaweb.org/conference/2019/preliminary/paper/ybbtYk9A (accessed 30 July 2019).

Transparency International (2015), "The role of the financial sector in preventing corruption", Transparency International | G20 Position Paper May, available at: www.transparency.org/files/content/activity/2015_TI_G20PositionPaper_FinancialSector.pdf (accessed 30 July 2019).

Further reading

Barth, J.R., Lin, C., Lin, P. and Song, F.M. (2009), "Corruption in bank lending to firms: cross-country micro evidence on the beneficial role of competition and information sharing", *Journal of Financial Economics*, Vol. 91 No. 3, pp. 361-388.

Dickey, D.A. and Fuller, W.A. (1979), "Distribution of the estimators for autoregressive time series with a unit root", *Journal of the American Statistical Association*, Vol. 74 No. 366a, pp. 427-431.

Dolado, J.J., Jenkinson, T. and Rivero-Sosvilla, S. (1990), "Cointegration and unit-roots", *Journal of Economic Surveys*, Vol. 4 No. 3, pp. 249-273.

Author affiliations

Abiola Ayopo Babajide, Department of Banking and Finance, Covenant University, Ota, Nigeria

Adedoyin Isola Lawal, Department of Accounting and Finance, Landmark University, Omu Aran, Nigeria

Lanre Olaolu Amodu, Covenant University, Ota, Nigeria

Abiola John Asaleye, Department of Economics and Development Studies, Landmark University, Omu Aran, Nigeria

Olabanji Olukayode Ewetan, Department of Economics and Development Studies, Covenant University, Ota, Nigeria

Felicia Omowunmi Olokoyo, Department of Banking and Finance, Covenant University, Ota, Nigeria, and

Oluwatoyin Augustina Matthew, Department of Economics and Development Studies, Covenant University, Ota, Nigeria

Corresponding author

Abiola Ayopo Babajide can be contacted at: abiola.babajide@covenantuniversity.edu.ng