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FINANCIAL TECHNOLOGY AND THE GROWTH OF THE LISTED DEPOSIT MONEY BANKS IN NIGERIA

Adeniran Robert Akinro
Department of Accountancy, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria
Emails: *godswill.hands@gmail.com*

Correspondence: godswill.hands@gmail.com

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ABSTRACT

This study examined the impact of financial technology on listed deposit money banks in Nigeria. The study covered the period of 2005 to 2023 and employed Autoregressive Distributed Lag Model (ARDL) to analyses the annual time series data. While the data for financial technology index and return on assets were obtained from World Development Indicators, the data for automated teller machine, mobile money transactions and credit to private sector were sourced from Central Bank of Nigeria statistical Bulletin. The findings reveal that financial technology and automated teller machine have a significant positive impact on deposit money banks' survival in Nigeria. However, it was observed that mobile banking transactions and credit to private sector have negative and insignificant effects on the survival of deposit money banks in Nigeria. It is recommended that banks should invest heavily in financial technology that would make banking services free of any network hitches that usually cause delay in transactions and double debit of customers account without dispensing cash. If this is done, mobile banking transactions and other forms of payment platform will be fortified.

Key words: *Financial technology, Growth of deposit money bank Mobile bank.*

INTRODUCTION

Financial technology, or fintech, has significantly transformed the financial sector across the globe. In advanced economies, fintech has played a pivotal role in enhancing financial inclusion, improving customer experiences, reducing transaction costs, and increasing the efficiency of financial services. The adoption of digital banking, mobile payments, robo-advisors, and bl.ockchain technology has provided consumers with faster, more convenient, and often cheaper financial services. For instance, in the United States and Europe, digital payment platforms like PayPal and Revolut have revolutionized the way people transfer money and manage their finances, leading to a decline in traditional banking reliance (Puschmann, 2017). Theoretical perspectives on the relationship between financial technology and deposit money banks suggest a dynamic relationship where both entities can coexist and thrive. According to Schumpeter's theory of innovation, fintech can be seen as a

disruptive force that fosters competition and innovation within the financial sector. Traditional banks, in response, are compelled to innovate, leading to overall growth in the financial system. However, the theory also warns of the risks of disruption, such as market instability and the potential marginalization of less technologically adept consumers (Schumpeter, 1942). The global financial sector has seen enormous development over the last two decades as a result of disruptive innovations introduced into the industry. There have been innovations in service delivery, product varieties, and so on. These advances are relevant because to the vital role the financial sector plays in economic growth. For example, using financial technology (Fintech), new payment methods such as mobile wallets and contactless payment systems may make it easier for people to spend money, boosting the economy. Furthermore, peer-to-peer lending systems, which connect borrowers directly with lenders by eliminating intermediaries, can make it easier for people to obtain loans, thereby stimulating economic activity. The popularity of financial technology in the global financial landscape and among investors is clearly dependent on the increasing technology being leveraged to supply personalised financial services(Central Bank of Nigeria, 2022).

Several reasons are already driving fintech adoption in Africa, including expanding mobile phone usage, rising internet connection rates, and an increase in demand for digital financial services. The fintech sector is spreading financial services to millions of businesses, where 90% of transactions are now conducted in cash. Furthermore, financial technology investment in Africa is expected to expand by more than 58% between 2014 and 2018, reaching US$800 million, and rising to US$3 billion (PricewaterhouseCoopers, 2020). Technological innovation is gradually evolving, with the mobile economy contributing approximately 3 million employment and 7% of the continent's GDP. Nigeria and South Africa were found to have received a major percentage of these investments, which are altering financial services and increasing financial inclusion. The rise of online platforms as a result of financial technology enables people and corporations to provide commercial and consumer loans, hence reducing poverty levels (PwC, 2020).

In Nigeria, the fintech sector has witnessed rapid growth, positioning the country as one of Africa's leading fintech hubs. The sector's expansion has been driven by several factors, including a large unbanked population, the increasing penetration of mobile phones, and the youthful population's adaptability to digital technology. Fintech companies in Nigeria have introduced innovative solutions such as mobile wallets, peer-to-peer lending platforms, and digital payment systems, which have improved financial inclusion and access to credit.

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Notable examples include Flutterwave and Paystack, which have simplified payment processing for businesses and consumers alike (Omisore, 2020). Statistically, the impact of fintech on financial inclusion in Nigeria is significant. As of 2020, about 36% of Nigerian adults had access to formal financial services, an improvement from previous years, largely due to the proliferation of fintech services (Enhancing Financial Innovation & Access (EFInA, 2020). However, despite this progress, approximately 40% of the adult population remains unbanked, highlighting the need for more inclusive financial policies and services (EFInA, 2020).

Despite these advancements, the relationship between fintech and deposit money banks (DMBs) in Nigeria is complex, characterized by both collaboration and competition. Fintech companies have disrupted traditional banking by offering more agile and customer-centric services, often at lower costs. This disruption has pressured DMBs to innovate and adopt digital strategies to remain competitive. However, this has not been without challenges. One of the major challenges is the regulatory environment. The rapid evolution of fintech has outpaced regulatory frameworks, leading to concerns about consumer protection, data privacy, and financial stability. The Central Bank of Nigeria (CBN) has implemented various policies to address these issues, including the licensing of fintech companies, the introduction of the Payment Service Banks (PSB) framework, and the establishment of the Fintech and Innovation Unit within the CBN. These policies aim to create a level playing field between fintech companies and traditional banks while ensuring the stability of the financial system (Central Bank of Nigeria, 2020).

However, the effectiveness of these policies in addressing the challenges posed by fintech in Nigeria remains debatable. While the regulatory framework has provided some clarity, there are still gaps in enforcement and oversight. For instance, issues related to cyber security, digital fraud, and money laundering in the fintech space are still prevalent. Moreover, the high cost of compliance for fintech start-ups can stifle innovation and limit their ability to compete with established banks (Ogunleye, 2021). It is against this background that this study examines how financial technology can help sustain economic growth

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Objectives

The main objective of the study is to investigate the effect of financial technology on the growth of the listed deposit money banks in Nigeria. However, the specific objectives are to

1. investigate the impact of financial technology on the growth of the listed money banks in Nigeria
2. determine the impact of mobile banking on the growth of the listed deposit money banks in Nigeria.
3. ascertain the effect of automated teller machine banking on the growth of the listed deposit money banks in Nigeria.
4. assess the influence of credit to private sector on the growth of the listed deposit money banks in Nigeria.

Hypotheses

The following hypotheses were tested for the study:

H_{01}: There is no significant effect of financial technology on the listed deposit money banks' growth in Nigeria.

H_{02}: There is no significant influence of mobile banking on the listed deposit money banks' growth in Nigeria.

H_{03}: Automated teller machine has significant impact on the growth of the listed deposit money banks in Nigeria.

H_{04}: Credit to private sector has no statistically significant impact on the listeddeposit money banks' growth in Nigeria.

LITERATURE REVIEW

Financial Technology

Financial technology (Fin tech) is a catch-all term referring to software, mobile applications, and other technologies created to improve and replace traditional forms of finance for businesses and consumers alike. Financial technology can include everything from straightforward mobile payment apps to complex block chain networks housing encrypted transactions. Fintech refers to companies that provide financial services using a reliable technological platform, aiming to create innovative products and services for a wider range of businesses and clients (Giglio, 2021) in NonsoOkoye 2024 . It optimizes market efficiency while minimizing transaction costs, and it involves the use of digital technology in the financial system to create new services, business models, products, procedures, and

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institutions. Fintech has a global impact on the banking industry, with products and services such as crowd funding, e-trading, and block chain technology (Suryono et al., 2020; cited in Nonsookoye 2024).

Financial technologies modify, enhance, or automate financial services for businesses or consumers. Some examples include mobile banking, peer-to-peer payment services (e.g., Venmo, CashApp), automated portfolio managers (e.g., Wealthfront, Betterment), or trading platforms such as Robinhood. It can also apply to the development and trading of cryptocurrencies (e.g., Bitcoin, Dogecoin, Ether). FinTech simplifies financial transactions for consumers or businesses, making them more accessible and generally more affordable. It can also apply to companies and services utilizing big data, and encrypted block chain technology to facilitate highly secure transactions amongst an internal network. The adventure of technology has brought about new chain in business transactions. With technology many transactions could be done without involvement of banking officers or working into the banking hall, most of this transaction could be done at easy in the comfort of our house. One of the major concerns of the bank is, the quite reasonable number of people or public who have not key into the use of financial technology despite the numerous advantages attached to disruptive technology in this 21st century. It now becomes imperative for the banks both the central bank and commercial bank to create a medium by which the general public could key in into the use this development

Growth of Deposit Money Bank

What determines the growths of banking have mostly been define as relationship between saving and consumption theory. Banking growths when deposit growths. Deposit growth being a major factor to banking growth requires understanding of deposit as a major type of private saving as well as determinants of private savings behaviour. The Nigerian fintech ecosystem has a diverse range of participants, including banks like Access Bank, GTBank, and First Bank, as well as emerging start-ups Paystack, Flutterwave, and Carbon. The Nigerian government has recognized the importance of SMEs in the economy and has implemented measures to facilitate their expansion. Fintech has the potential to provide SMEs with funding, enhance productivity, and reduce costs.

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Mobile Banking (MB)

MB is a service provided by a bank or other financial institution that allows its customers to conduct financial transactions remotely using a mobile device such as a Smartphone or tablet. With mobile phone, settlement of financial transactions could be done without contacting any bank or bank officers. The customers make use of mobile phone or tablet to transfer fund from their bank account to another beneficiary and immediately receive message of the transaction performed. It uses card infrastructure for movement of payment instructions as well as secure SMS messaging for confirmation of receipts to the beneficiary. This certainly involve the use of internet data which enable the mobile phone connect to the internet for effective performance of the transaction. It is very popular and encouraging to the customers given low infrastructure requirements and a rapidly increasing mobile phone penetration in the country. Among Services enjoyed by this product includes account enquiry; funds transfer; recharge phones; changing passwords and bill payments. With the adventure of this new technology and its merits, most customers are yet to fully buy into it in Nigeria, therefore, central bank and other financial institution still have a lot to do in terms of creating awareness to the general public for the consumption of the product.

Theoretical Review

Schumpeter's Innovation Theory

Schumpeter's innovation theory, formally introduced in his seminal work "The Theory of Economic Development" published in 1911 and further expanded in "Capitalism, Socialism and Democracy" in 1942, rests on several key assumptions. The theory posits that economic development is driven by innovation, which he defines as the creation of new products, new methods of production, new markets, new sources of supply, and new organizational structures. Schumpeter assumes that entrepreneurs are the primary agents of innovation, disrupting the equilibrium in markets through the process of "creative destruction." This process, where old industries and technologies are destroyed to make way for new ones, is seen as the engine of economic growth. A core assumption is that monopolies, rather than perfect competition, are more conducive to innovation because they have the resources and motivation to invest in research and development. Schumpeter also assumes that innovation is a dynamic and disruptive force that can lead to temporary monopolies, which eventually get eroded by further innovations (Schumpeter, 1942).

Schumpeter's theory has faced several criticisms. Some argue that it overly emphasizes the role of the entrepreneur and underestimates the complexities of innovation, which often results from collective efforts rather than individual genius. Critics also point out that Schumpeter's focus on large firms as the primary drivers of innovation ignores the role of smaller enterprises and collaborative innovation networks. Moreover, the theory has been criticized for being too deterministic, implying that innovation automatically leads to economic growth without considering the socio-economic factors that might hinder this process (Freeman & Soete, 1997). Despite these criticisms, Schumpeter's innovation theory remains highly relevant, particularly in the context of financial technology (fintech) and deposit money banks (DMBs) in Nigeria.

The theory provides a useful framework for understanding how fintech companies, as modern-day entrepreneurs, disrupt traditional banking systems through innovative products and services. The concept of creative destruction is evident as fintech innovations challenge the dominance of DMBs, forcing them to adapt, innovate, or risk obsolescence. This dynamic is crucial in Nigeria, where fintech firms have rapidly gained market share by offering more accessible and efficient financial services compared to traditional banks.Schumpeter's theory also helps explain the ongoing transformation in Nigeria's financial sector, where traditional banks are increasingly partnering with fintech firms or developing their digital platforms to stay competitive. The monopolistic advantage assumed in Schumpeter's theory can be seen in the market power of leading fintech companies in Nigeria, which, although beneficial for innovation, raises concerns about market concentration and the long-term impact on financial stability.Thus, the theory's emphasis on innovation as a driving force for economic change underscores the importance of fostering a conducive environment for both fintech companies and traditional banks to innovate and collaborate.

Empirical Review

Ashiru, Balogun and Paseda (2023) investigated the impact of mobile, internet, and automated teller machines (ATMs) on banks' financial performance. Utilizing data for the 2012 to 2021 period because of data availability, this study considers the causal effect of innovation on commercial bank performance via Granger causality test. The entire 24 deposit money banks in Nigeria constitute the study's population. Secondary data were gathered over the study period from NDIC annual reports, the Nigeria Inter-Bank Settlement System (NIBSS), and the Central Bank of Nigeria statistical bulletins (2012–2021). Based on the ARDL model analysis, POS banking service has the greatest impact on deposit money bank performance

because of large volume and value of transaction witnessed in the banking sector. Thus, more mobile and e-banking services should be made available. The usage of ATMs, mobile banking, credit and debit cards, online banking, and agency banking have a positive short run and long run substantial effect on deposit money bank performance in Nigeria, except National Electronic Fund Transfer (NEFT) and NIBSS Instant Payments (NIP) according to empirical results.

Medyawati, Yunanto and Hegarini (2021) analyzed the influence of financial technology on the financial performance of banks listed on the Indonesia Stock Exchange (IDX) during the 2014-2020 period. Financial technology was measured by the number of Automated Teller Machine (ATM) transactions and internet and mobile banking while bank profitability was measured by Return on Assets (ROA). Furthermore, this study used the panel data regression analysis with Automated Teller Machine (ATM) transactions as well as internet and mobile banking as the independent variables and ROA as the dependent variable. Purposive sampling was used to select six banks as samples. The results showed the fixed effect as the most suitable model, where ROA is affected by the internet and mobile banking while the TM technology has no effect

Akhisar, Tunay and Necla (2015) investigated the effects of the bank's profitability performance of electronic-based banking services. The effects of ROA and ROE performance were analyzed the data, which are 23 developed and developing countries' electronic banking services through 2005 to 2013, by dynamic panel data methods. Due to the innovative nature of electronic banking services will show the bank performance significantly. Both the analyzing method and involving of developed and developing countries' banking data are the most obvious differences of the study from similar studies in the literature. Result show that bank profitability of developed and developing countries affected from the ratio of the number of branches to the number of ATMs is highly significant and electronic banking services in significant. Results show that some variables were found to be in contrast to the expected negative relationship, because of diversity in the level of development of the countries, the socio-cultural structure and electronic banking infrastructure.

Ola-Olatinwo, Uwaleke and Ibrahim (2022) examined the influence of digital financial services (DFS) on the financial performance of Nigeria's publicly traded commercial banks. The study aims to see if there is a link between the dependent variable, which is financial performance as assessed by banks' earnings-per-share (EPS), and the main independent

variables, which are the volume of ATM and POS transactions as a proxy for digital financial services (DFS). Secondary data was employed in the study. The data was collected from the annual report of target banks and the Central Bank of Nigeria from 2012 to 2020. The study used both descriptive and inferential statistics in analyzing the data. In general, the study revealed that digital financial services (DFS) have substantial and significant marginal effects on earnings per share in Nigeria's banking sector. Thus, there exists a positive relationship between digital financial services (DFS) and bank financial performance. In conclusion, electronic banking has made banking transactions to be more accessible by bringing services closer to its customers hence improving banking industry performance. Thus, the study recommends that bank management should enhance digital banking to improve financial performance in commercial banks.

Madugba, Egbide, Jossy, Agburuga and Chibunna (2021) examined the impact of electronic banking on the financial performance of Nigerian deposit money banks. The data for the study was obtained from the Central Bank of Nigeria's Statistical Bulletin and the National Bureau of Statistics' Statistical Bulletin for various years, as well as from published financial statements of the banks under study. An expost facto research design was used and a normality test was carried out to establish the goodness of the data; descriptive statistics and a multi co linearity test were conducted in which the independent variables were found good. Regression was adopted to test two hypotheses. It was found that ATM has a positive and significant association with Earning EPS and ROA; POS and NEFT significantly affect ROA only, while WEB has an insignificant impact on both EPS and ROA. It is concluded that electronic banking significantly affects financial performance of deposit money banks in Nigeria.

Adiga, Adigwe, Okonkwo and Ogbonna (2022) examined financial technology and banking sector performance in Nigeria. The specific objectives are to examine the effect of financial technology on return on assets (ROA), return on equity (ROE), interest income (II) and noninterest income (NII) of Deposit Money Banks (DMBs) in Nigeria. The study was anchored on Technology Acceptance Model (TAM) and Central Bank of Nigeria (CBN) statistical bulletin and Nigeria Deposit Insurance Corporation (NDIC) report of various years form the data source which were subjected to Auto Regressive Distributed Lag (ARDL) technique to test the interaction between independent variables namely payment system, automated clearing services and remittance services with the dependent components in return on asset, return on equity, interest income and non-interest income at 5% level of significance. Financial technology significantly explained the variation in ROA, ROE and noninterest

income DMBs in Nigeria except the variation in interest income. The study concludes that financial technology significantly explained the variation in banking sector performance components in ROA, ROE, and non-interest income. The effect of financial technology on performance of the banking sector is inconclusive thus financial technology could not be said to improve and exert the required impact on the banking sector performance within the period studied.

MATERIALS AND METHOD

This study used an ex-post factor research design to investigate the effect of financial technology on listed deposit money banks' growth in Nigeria. The study covered the period of 2005 to 2023 due to availability of data and the data for the variables which include banks' return on assets, being the dependent variable, and financial technology index, mobile banking, credit to private sector and value of automated teller machines, which are the explanatory variables were sourced from CBN Statistical Bulletin and World Development Indicators. To estimate the parameters of this model, the autoregressive distributed lag (ARDL) method was employed. This method is suitable for this study because it is simple to compute and also helps to know the relationship between the dependent and independent variables. To establish the cointegrating relationship among the variables, ARDL Bounds test for Co-integration is appropriate to test if there is a long-run relationship between the dependent and independent variables or not. It does not require that the order of integration be the same. Thus, this test can be applied when the order of integration is I(1) and I(0), and also in small sample sizes. Thus, the objectives of this study are achieved using the method. Similarly, in line with the model ofMedyawati et al., (2021), which used number of automated teller machines, internet banking, mobile banking as variables which return on assets depended on, this current study adapts the model of Medyawati et al., (2021) and the model for this study is specified in its functional form as;

ROA = f (FIN, ATM, MMT, CPS)……..Eqn 1.

Where,

ROA= Nominal gross domestic product, proxy for economic development

FIN = Financial technology index

ATM = Automated teller machines

MMT = Mobile banking transactions

CPS = Credit to private sector

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The model can be specified in econometric form as;

$ROA = \beta_0 + \beta_1 FIN + \beta_2 ATM + \beta_3 MMT + \beta_4 CPS + \mu_t$ ……. Eqn 2.

The ARDL equation is expressed as in equation 3;

$$\Delta ROA_t = \beta_0 + \beta_{1R} ROA_{t-1} + \beta_2 FIN_{t-1} + \beta_3 ATM_{t-1} + \beta_4 MMT_{t-1} + \beta_5 CPS_{t-1} + \sum_{i=1}^{q} \alpha 1 \Delta ROA_{t-1} + \sum_{i=1}^{q} \alpha\, 2\Delta FIN_{t-1} + \sum_{i=1}^{q} \alpha\, 3\Delta ATM_{t-1} + \sum_{i=1}^{q} \alpha\, 4\Delta MMT_{t-1} + \sum_{i=1}^{q} \alpha\, 5\Delta CPS_{t-1} + £_t \quad \text{. Eqn 2.}$$

ANALYSES AND RESULTS DISCUSSION

Stationarity Test

Establishing stationarity is essential because if there is no stationarity, the processing of the data may produce biased result. The consequences are unreliable interpretation and conclusions. The study thus tests for stationarity, using Augmented Dickey-Fuller (ADF) tests on the data and the result is presented in Table 1.

Table 1 Augmented Dickey-Fuller Unit Root Test

Variables	ADF Stats	Critical Value @5%	Order of Integration	Remarks
ROA	-4.8333	-3.2598	I(1)	Stationary
FIN	-3.9771	-3.0522	I(1)	Stationary
ATM	-40.7629	-3.0989	I(1)	Stationary
MMT	-9.9116	-3.0810	I(0)	Stationary
CPS	-6.8674	-3.0522	I(0)	Stationary

Source: Eviews 12

As shown in Table 1, the result of ADF test reveals that mobile banking transactions (MMT) and credit to private sector (CPS) stationary at level, that is I(0), while return on assets (ROA), financial technology (FIN), automated teller machine (ATM) are stationary at first difference. This means that the variables are integrated of order one, that is, I(1). Going by this result, it can therefore be concluded that the variables are stationary because in absolute terms, the ADF statistic for all the variables are greater than the critical value at 5 percent level of significance. Based on this, the null hypothesis which states that the model has unit root, that is, not stationary is rejected.

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Lag Length Selection

In order to estimate the parameters of this model, it is necessary to select the optimum lag length. In this study, VAR lag length selection criterion was employed and the result is presented in Table 2.

Table 2 VAR Lag Selection Result

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-3.442597	NA	1.98e-06	1.055325	1.296759	1.067688
1	128.0883	164.4136*	3.95e-12*	-12.26103*	-10.81243*	-12.18685*

Source: Eviews 12

The result of the lag order selection criteria presented in Table 2 shows that lag one is the appropriate lag length for the study. Thus, based on the decision rule, Akaike Information Criterion (AIC) was selected as the method for choosing this lag length because it has the lowest value compared to other lag selection criteria. The decision rule is that the method with the lowest value is better.

Cointegration Test

Co-integration indicates the presence of a combination of non-stationary variables that are stationary. The summary of the ARDL bounds test for co-integration is presented in Table 3.

Table 3 ARDL Bounds Testing for Cointegration

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	22.27764	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
			Finite Sample:	
Actual Sample Size	16		n=35	
		10%	2.46	3.46
		5%	2.947	4.088
		1%	4.093	5.532

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		Finite Sample: n=30	
	10%	2.525	3.56
	5%	3.058	4.223
	1%	4.28	5.84

Source: Eviews 12

From Table 3, the value of the F-statisticis 22.27764. This shows that the value is greater than the critical value bonds at 5 percent level of significance. Therefore, the study concludes that there exists long run relationship among ROA, FIN, ATM, MMT and CPS. Based on this, the null hypothesis of no cointegration is rejected. Thus, the studyestimatesboththe short run and long run ARDL model.

Autoregressive Distributed Lag Model

After establishing the cointegrating status of the model, the studytherefore subjects the model to Autoregressive Distributed Lag Model (ARDL) to generate the coefficients of the parameters of the regression model.

Table 4 Long Run and Short Run ARDL Result

Long Run Estimate

Levels Equation
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FIN	0.275556	1.008702	3.264552	0.0465
MMT	-0.239556	0.164689	-1.454598	0.1891
CPS	-0.555179	0.443595	-1.251543	0.2509
ATM	0.171393	0.122226	4.402263	0.0036
C	-1.084602	1.486475	-0.729647	0.4893

Short Run Estimate

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA(-1)	-1.097457	0.163727	-6.702968	0.0003
D(FIN)	-0.379174	0.729137	-4.634484	0.0024
D(MMT)	-0.262902	0.151517	-1.735130	0.1263
D(CPS)	0.161112	0.245883	0.655240	0.5332
D(ATM)	-0.642948	0.101852	-6.312597	0.0004
CointEq(-1)*	-0.197457	0.072500	-15.13742	0.0000

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R-squared	0.970118	Mean dependent var	-0.015460
Adjusted R-squared	0.962647	S.D. dependent var	0.357260
S.E. of regression	0.069047	Akaike info criterion	-2.295732
Sum squared resid	0.057210	Schwarz criterion	-2.102585
Log likelihood	22.36585	Hannan-Quinn criter.	-2.285841
Durbin-Watson stat	2.100720		

Source: Eviews 12

For the long run estimate, the coefficients of FIN and ATM exert positive relationship with ROA, while MMT and CPS have negative impact. The result further shows that, among all the variables, only FIN and ATM are statistically significant at 5 per cent. The coefficients of FIN is 0.2756, while ATM is 0.1713, meaning that 1 percent increase in FIN and ATM will increase ROA by 0.28% and 0.17% respectively. The coefficients of MMT and CPS on the other hand are -0.2396 and -0.5551 respectively. This indicates that on average, 1 percent increase in MMT and CPS, will reduce ROA by 0.23% and 0.56% respectively.

The short run estimate reveals that on average, FIN, MMT and ATM will reduce ROA by 0.38%, 0.26% and 0.64% respectively, while CPS will increase ROA by 0.16%. The p values also show that in the short run, ATM and FIN are statistically significant while MMT and CPS are insignificant at 5 percent.All these positive values are expected because when people use any of these payment systems, money is being deducted for such transactions and these would help increase the return on assets of commercial banks. Similarly, financial technology has positive impact on deposit money banks' survival. The finding conforms to the a priori expectation because investment in financial technology will provide easy access to more financial services, and as such, increase financial inclusion which tends to increaseNigerian deposit money banks' profitability and strengthen their survival.

Conversely, MMT and CPS have negative impact and this suggests that MMT and CPS have not contributed to the survival of deposit money banks in Nigeria. These findings failed to conform to the a priori expectation because it is expected that disruptive innovations through financial technology investment would help include more people financially, and as they use any financial services, it increases banks' profitability since money is charged on all bank transactions.

The error correcting term (ECM) which checks the speed of adjustment reveals a value of -0.197. This implies that about 20 per cent disequilibrium in the previous year would be corrected for in the current year.From the study regression result, the coefficient of

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determination (R^2) is given as 0.97, which shows that the explanatory power of the variables is very high and strong. That is, 97% of the variations in ROA are explained by the variations in FIN, ATM, MMT and CPS. While other possible determinants not captured in the model explain about 3% of the variation in ROA.

Post Estimation Diagnostic Tests

After estimating the parameters of this study's model, the necessary diagnostic tests were conducted. For this study, the serial correlation, heteroscedasticity and stability tests were conducted.

Table 5 Serial Correlation Test
Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 1 lag

F-statistic	1.304171	Prob. F(1,6)	0.2970
Obs*R-squared	2.856825	Prob. Chi-Square(1)	0.0910

Source: Eviews 12

The result of the serial correlation test shows that the model is free from serial correlation since the probability value of F-statistics of 0.2970 is greater than the critical value at 5 percent. This makes the study to accept the null hypothesis which states that there is no serial correlation in the model.

Stability Tests

The stability test is necessary in a time series data to check whether the model is stable or not. This study used the Recursive OLS tests to establish the stability status and the results are presented in Figures 1 and 2.

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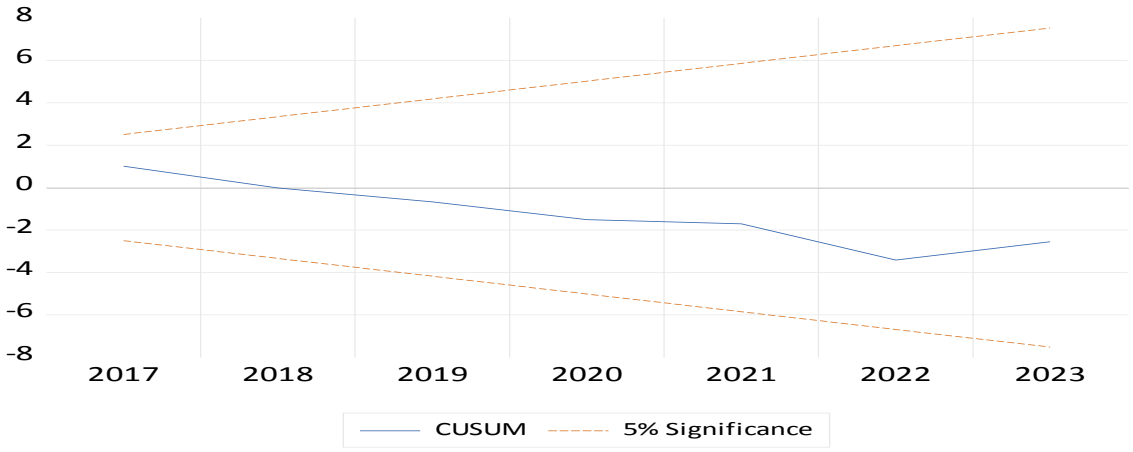


Figure 1: Cumulative Sum Test

Source: Eviews 12

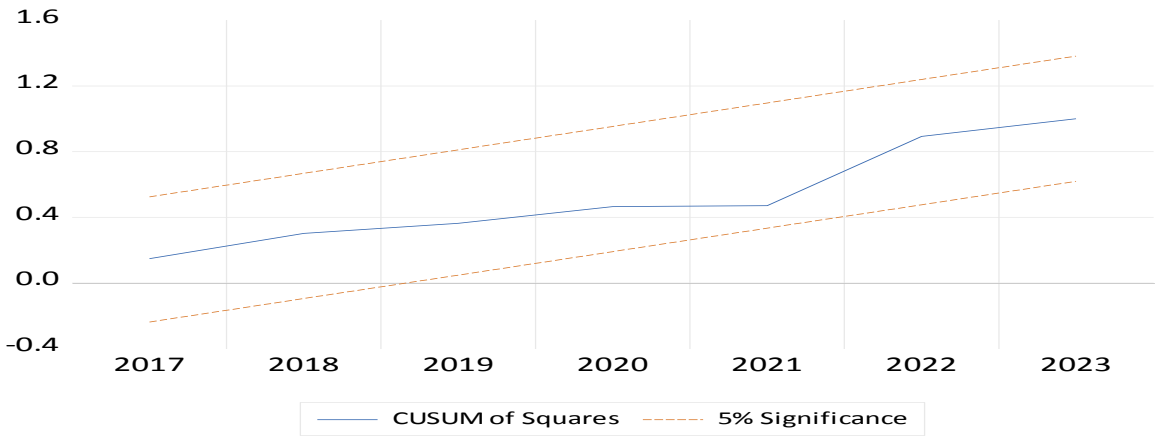


Figure 2: Cumulative Sum of Square Test

Source: Eviews 12

The results in Figures 1 and 2 show that our model is stable since the base lines fall within the 5 percent boundary level for both CUSUM and CUSUM of Squares tests. Based on the decision rule, the study accepts the null hypothesis which states that the model is stable.

CONCLUSION AND RECOMMENDATIONS

This study examines the impact of financial technology on listed deposit money banks' growth in Nigeria from 2005 to 2023, using ARDL model. It is evident that financial technology plays an important role in the deposit money banks' growth in Nigeria and it is obvious that it is one of the major sources of growth in the overall performance of the banks. While it still needs to be protected sufficiently to ensure sufficient patronage, it is possible

that banks' success in Nigeria can be significantly improved with the advent of new channels alongside technological advancement, especially, if efforts are put in place to implement effectively. The introduction of financial technology has indeed had a positive effect on the profitability of the bank since it was introduced. It has also improved the banks' customer relationship by rendering effective services. It was revealed that FIN and ATM have a significant positive impact on profitability. However, it was observed that MMT and CPS have negative and insignificant effects on the s of deposit money banks in Nigeria. It is therefore concluded that financial technology is imperative in increasing the fostering the survival of deposit money banks in Nigeria.

From the findings of this study, the following recommendations are made:

i. It is recommended that banks should invest heavily in financial technology that would make banking services free of any network hitches that usually cause delay in transactions and double debit of customers account without dispensing cash. If this is done, mobile banking transactions and other forms of payment platform will be fortified.
ii. Commercial banks should also provide more functioning ATMs that will serve customers for convenience. This would encourage customers to deal more with banks with their funds and the issues of long queues at the ATM gallery will be minimized.
iii. Banks should provide easy and cheap access to loans for private sector, as this would enhance financial inclusion and also strengthen banks' survival.

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