

## COMPARATIVE ANALYSIS OF FINANCIAL TECHNOLOGY AND TRADITIONAL BANK PERFORMANCE IN NIGERIA: THE CAMELS APPROACH

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### *Abstract*

*The Financial technology (FinTech) rapid growth has been perceived as a threat to the survival of traditional banking in both developed and developing economies. Following this perception, the study investigated the comparative analysis of financial technology (FinTech) operation and traditional bank operation performance in Nigeria, using ALAT by Wema Bank Plc as a case study. In this study, the secondary data used are obtained from WEMA bank annual reports from 2012 to 2018. Specifically, both the CAMELS descriptive and composite CAMELS ranking methodology was employed to measure WEMA bank performance between the digital FinTech and the payment FinTech operations eras in this study. The findings revealed that the digital FinTech operations, commonly called ALAT in WEMA bank resulted to a consistent positive impact on WEMA bank performance between 2017 and 2018 than the payment FinTech operations on WEMA bank performance between 2012 and 2016. Therefore, the foregoing of the study recommends that the digital FinTech operations should be fully optimized and intensified by the stakeholders in the Nigerian banking sector to remarkably improve the traditional banks performance and also guarantee financial inclusion and stability in the Nigeria banking sector.*

**Keywords:** Financial Technology (FinTech), Traditional Bank, CAMELS descriptive, CAMELS Composite Ranking

### **1. Introduction**

Over the past years, the increasing development of the financial technology (FinTech) is recently becoming a worrisome challenge to the traditional banking model. This has resulted in the literature gap of financial technology vis-à-vis the impacts on traditional banks performance in the global financial services. Prior to the advent of the financial technology, it was evident that traditional banking has suffered the following fundamental economic forces such as decline in the source and supply of funds for financial intermediaries, diminishing deposits, increasing banking operations due to increased staff

strength, increasing waiting time for customers, and increasing cost of a full-service branch (Juodelyte, 2018; Edwards & Mishkin, 1995; Batiz-lazio & Wood, 2001).

The aftermath of the traditional banking challenges led to the birth of financial technology phases in the global financial service industry. The first phase of financial technology occurred in the late 1950s and 1960s with the introduction of the magnetic stripe plastic (credit) cards by IBM and later the revolutionary change from paper cheque teller of the “Brick and Mortar” branches to the automated teller machines technology innovation, commonly called ATM by the Barclays bank in the United Kingdom (UK). However, it is worthy of note that ATM as a financial technology innovation failed to automate other banking services such as insurance, loan, portfolio management, and others without customers visiting the traditional retail bank branches (Corrocher, 2002). Further, the second phase in late 1970s of financial technology also consolidated the ATM establishment with the launch of terminal financial technology such as the clearing house interbank payment systems, and the electronic stock exchange to facilitate the automation of e-trading with other industry. Remarkably, between early 1980s and late 1990s, the third phase of the financial technology was earmarked with the launch of online banking and the internet and transactional website banking in UK and USA respectively. Not until 1998, the Basel Committee report on bank supervision defined e-banking as “the provision of retail and small value bank products and services through electronic channel, such products and services include deposit taking, lending, account management, the provision of financial advice, electronic bill payment products and services”. More importantly, all the financial technology phases discussed till the Basel definition of e-banking or digital banking reveals in the literature that the financial technology innovations are more beneficiary as well as complementary to the existence of traditional banks model in the world. Notably, e-banking since 2011 have increased access to bank account by 1.2 billion, while about 1.7 billion remains unbaked in the world (World Bank, 2014).

Importantly, the recent advancement in the financial technologies in the financial sector necessitated the introduction of financial technology industry, which is rapidly becoming a new threat and competitors to the existing traditional banking, unlike the e-banking phase. Therefore, the term financial technology, represented as FinTech according to Financial Stability Board (FSB) defined as “technologically enabled financial innovation that could result in new business models, applications, processes or products with an associated material effects on financial markets and institutions and the provision of financial services”. In a simple meaning, financial technology comes from two words: finance and technology. This is simply defined as the optimization of technologies that support financial services. In other words,

Fintech, or Financial Technology refers to new technology or innovation that disrupts traditional ways of conducting financial transactions.

Importantly, this technological innovation impacts on the financial sector operations performance includes the rapid growth in the financial technology industry in terms of over 1.2 billion adults have obtained an account from 505 million in 2011, the share of adults that operates mobile money service globally rose from 62 percent to 69 percent in the developed economies, and in the developing economies, the share also rose from 54 percent to 63 percent as against the traditional banks (Ozili, 2017; Worldbank, 2017). Despite the rapid development in the financial technology industry, the traditional banking sector has continually suffered recent setbacks such as decline in the source and supply of funds for financial intermediaries, diminishing deposits, increasing banking operations due to increased staff strength, increasing waiting time for customers, and increasing cost of a full-service branch (Juodelyte, 2018; Edwards & Mishkin, 1995; Batiz-lazio & Wood, 2001).

To this end, the broad objective is to investigate the comparative analysis of financial technology (FinTech) operations impacts on traditional banks performance in the Nigeria banking sector. Specifically, this study aims to examine the effects of payment FinTech on the traditional banks performance as well as the effect of digital banking FinTech on the traditional banks performance in Nigeria. To achieve this objective, the CAMELS descriptive and composite CAMELS ranking methodology are employed to compare between payment FinTech and digital FinTech on the traditional banks' performance in Nigeria banking sector. Remarkably, the scope of this study are payment FinTech and digital FinTech operations between 2012 and 2018 but the study is limited to a single case study, WEMA bank as a purposive sample because it is the first African and Nigerian bank to implement a full digital FinTech operation, called ALAT. It is against this backdrop that the study seeks to provide answers to inconclusive questions in the literature on impacts of payment and digital FinTech roles in the traditional banking performance in Nigeria.

## **2.0 Literature Review**

### **2.1 Conceptual Review**

Financial technology commonly termed as FinTech is a fast growing concept with great variety of definitions in the academic and business world. In addition, there is a wide misconception of the term FinTech transitioning from digital banking or electronic banking. Notably, these three concepts are related in terms of technology application in providing financial services but differ in scope of the application to ranges of financial services rendered. To this end, there is need for a clear understanding of the term FinTech.

First, the term financial technology (FinTech) is defined as a cross-disciplinary subject that combines finance, technology management and innovation management to improve financial services processes through technology solutions for different business situations and for new business

models or even new businesses. For instance, the introduction of Uber is an example of FinTech business because the company provides non-traditional transportation services by using technology (such as mobile applications) to improve the ordering of taxi services. A general definition of the term FinTech is the application of innovative ideas or entrepreneurial creativity to provide what the market needs through technology.

In finance discipline, the term financial technology is defined as the use of new technology and innovation applicable in the traditional financial sector in the delivery of financial services. Arner, Barberis and Buckley (2015) defined FinTech as technology enabled financial solutions. The term FinTech is not confined to specific sectors but it covers the entire scope of services and products traditionally provided by the financial services industry with the use of technology. Ernst and Young (2016) see FinTech as an organization combining innovative business models and technology to enable, enhance, and disrupt traditional financial services providers. In a nutshell, FinTech is a new phenomenon that uses technology such as smart phones for mobile banking and the recent Cryptocurrency which is used by investing services to make financial services more accessible to the general public. The financial technology companies consist of startups and established financial and technology companies trying to replace or enhance the usage of existing traditional banks for financial services provision. Lastly, the term financial technology simply refers to the interrelation of financial services and technology to provide financial services that meet people's business and financial needs.

FinTech has successfully automated a range of financial services such as insurance banking, lending, and portfolio management. Recently, the FinTech startups have continually received huge investment from a sum of \$17.4 billion in 2016 to about \$83.8 billion in 2017 with a move of disrupting the traditional banking activities in the world. Presently, there are 26 Unicorn FinTech globally valued at \$83.8 billion as at 2017 (Kagan, 2019; Gomber, Koch, & Siering, 2017). To this end, FinTech innovations areas revolve around the followings: (i) Cryptocurrency and digital cash (ii) Blockchain technology including Ethereum, a distributed ledger technology (DLT) that maintain records on a network of computers but has no central ledger. (iii) Smart contracts, which utilize computer programmes (often utilize the blockchains) to automatically execute contracts between buyers and sellers. (iv) Open banking, a concept that leans on the blockchain and posits that third-parties should have access to bank data to build application that create a connected network of financial institutions and third-party providers. An example is the all-in-one money management. (v) Insurtech, which seeks to use technology to simplify and streamline the insurance industry. (vi) Rentech, which seeks to help financial service firms meet industry compliance rules, especially those covering Anti-Money Laundering and know-your customer protocols to fight frauds. (vii) Cybersecurity, given the proliferation

of cybercrime and the decentralized storage of data, cybersecurity and FinTech are interlocked.

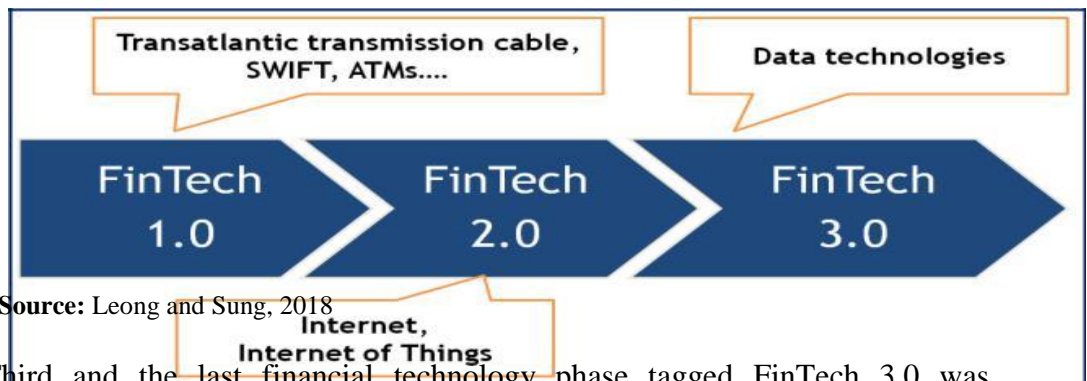
### 2.1.1 Evolution of Financial Technology and Its Application introduction in Nigeria

The term financial technology (FinTech) is not a new phenomenon but it has evolved changes over the past one and half century in the world. Specifically, the evolution of financial technology is widely divided into three phases.

First, the FinTech 1.0 origin is traced to July 1866 when the first communication through the Trans-Atlantic transmission cable, which eventually occurred on 16 August 1958 (Leong & Sung, 2018). Further, the connection did not only reduce the communication time between North America and Europe from 10 days to 17 hours, but also facilitated the introduction and development of global telex that improved financial services in the world. In summary, the FinTech 1.0 phase is characterized with the development of enabling technology such as Trans-Atlantic transmission cable and mainframe computers, the SWIFT and lastly, the launch of automated teller machine (ATM) in the advanced countries.

Second, FinTech 2.0 emerges as the second phase of FinTech in the world. This phase extended the technologies innovation with the discovery and application of internet, websites as well as the recent launch of smart phones. As a result, these new banking operations include internet bank, mobile banking, and electronic banking in UK and US.

**Figure. 1:** The Development of FinTech (including key technologies in each Stage)



Source: Leong and Sung, 2018

Third and the last financial technology phase tagged FinTech 3.0 was developed to consolidate on more advance technologies such as block chain, Crypto currency and others, aimed to disrupt the traditional banks, and thus, a new business models is established through massive investment in the millions of start-up companies (Varga, 2017). The current financial technology operations in Nigeria were traceable to the establishment of the national financial inclusion strategy (NFIS) in 2012.

The objective of this financial inclusion strategy was to articulate supply-side (fund mobilizations), demand-side (accessibility to finance/credit), and seamlessly reduces the regulatory barriers. More importantly, the NFIS is to

ensure that a larger proportion of the Nigerian adults have access to ranges of financial services that meet their satisfaction at affordable cost, as well as extend services beyond payment but include savings, credit, insurance, pension and capital market products. In Nigeria, FinTech stakeholders are broadly classified into three, namely; the providers, the enablers and the supporting institutions. The providers are the institutions that provide ranges of financial services and act as partner of infrastructure and technology. The enablers are the regulators and public institutions that regulate financial institutions. The supporting institutions are the financial institutions that support expert know-how on the financial services rendered.

## **2.2 Theoretical Review**

The study is anchored on the theories of financial intermediation and innovation. The financial intermediation theory was propounded by Gurley and Shaw (1960) in their research work titled: "Financial Intermediation and Economic Growth". This theory emphasizes the importance of financial intermediation in the economy. Financial intermediation in the banking industry is defined as the process of performing interrelation roles between the surplus units of the economy and the deficit units of the economy. Financial intermediation is the use of technology to optimize financial services or operations in terms of financial services cost, fund mobilization and risk management (Asia, 2015; Kemboi, 2018). The theory of innovation was developed by Joseph Schumpeter (1983) who is an American economist and maintains that profit is a function of degree of innovations undertaken by the manager to increase the profit level of the firm. Innovation is a new invention or an improvement of an older invention that brings better value to the company, customer and or economy. Schumpeter (1983) postulates that innovation simply refers to all changes in the production processes that is targeted towards cost reduction and profit maximization, commonly known as optimization

## **3. Data Source and Methodology**

Our study employed secondary data that was obtained from WEMA bank annual reports. This study considers years 2012 to 2018 as the study period. The sample period was chosen because year 2012 was when the CBN inaugurated financial inclusion in Nigeria and thus earmarked the beginning of payment FinTech and not just electronic banking while year 2018 is the latest published annual report of the sample bank. Further, the sample periods are divided into two sub-sample periods such as the payment FinTech period which ranges from 2012-2016 and the digital FinTech period which spanned from 2017 to 2018.

Besides the data source, our study used the CAMELS approach to measure the

bank performance unlike previous studies that used accounting ratios such as return on asset, return on equity and other key financial performance parameters measured only financial performance. In this study, the CAMELS is employed to measure both financial and non-financial performance in the banking sector. The CAMELS approach was first used by the Federal Reserve regulator in 1979 but later renamed as Federal Financial institutions examination council in 1996 but no studies to our knowledge has employed the CAMELS descriptive analysis and the CAMELS composite ranking analysis respectively to compare and contrast the bank performance between payment FinTech and digital FinTech operations in Nigeria banking sector within the study periods. The term CAMELS is briefly explained and summarized in table 1:

Capital adequacy refers to the bank's overall financial conditions and the management ability to meet the need of additional capital. In this study, the capital adequacy is measured by three ratios: Capital to assets ratio (CAR); Debt to equity ratio (DER); and advance to assets ratio (AAR) respectively. First, CAR determines the capital at which the banks bear reasonable level of losses from the bank operations. A higher CAR ratio indicates that the bank is adequately capitalized to its operations expansion, hence the bank and the investors are well protected and vice versa. Second, Debt to equity ratio is the proportion of debt and equity used by the bank to finance its assets. A higher DER ratio indicates that the depositors, creditors, and other are less protected and vice versa. And third, AAR refers to the aggressiveness of bank in lending which in turn leads to better earning of profit. A higher AAR ratio is preferred as compared to lower one.

Asset quality is another indicator of CAMELS analysis used in measuring banks' performance. It is a measure of a bank's strength in terms of its asset base. It shows the ratio of total investment to total assets. That is, the proportion of a bank's assets that are used to create wealth and for investment. This implies that the higher the asset quality ratio, the greater the quality of assets of the bank and vice-versa.

Management efficiency as one of the CAMELS indicator refers to the ability of the management team of the bank to measure, identify and control the risks of business activities and ensure efficiency in business operations. In this study, management efficiency is measured as the ratio of total advances to total deposits (TA/TD) while the management effectiveness is measured by computing return on equity (ROE) which is obtained as the ratio of profit after tax to total equity. The higher the ratios, the higher the management efficiency of banks

Earning capacity is also one of the CAMELS indicators used to determine the ability of bank to earn profit. It indicates the current and future growth potential of the bank. In this study, earning capacity can be measured in three

ways. The first method is a measure of operating profit to total assets; the second method is the ratio of net profit to total assets. Finally, the third method is the ratio of net interest margin to total assets, where the net interest margin is the difference between interest income and interest expenses.

Liquidity is another indicator of CAMELS analysis used to determine the extent at which the bank's is able to meet its cash obligations as at when they fall due. In this study, liquidity is measured in two ways. First, liquidity ratio is the ratio of liquid assets to total assets. Liquid assets include cash in hands, debtors, short-notice, money at calls, etc. The second measure of liquidity is the ratio of liquid assets to total deposits (LA/TD). The higher the liquidity ratio, the higher the bank's liquidity and vice versa.

Lastly, sensitivity to market risk measures the extent at which certain key uncontrollable factors such as interest rate, exchange rate, inflation rate and other macroeconomic variables affect the bank's financial performance. In this study, the sensitivity to market risk is measured by a single indicator-the deposit interest rate. Table 1 below presents summary of CAMELS analysis with expected sign.



**Table 1.** CAMELS Indicators with Expected Signs

Performance Indicator	Symbol	Formula	Sign with Performance Indicator
Capital Adequacy	CAR	Capital/ Assets	+
	DER	Debt/ Equity	+
	AAR	Advance/Assets	+
Assets Quality	TITA	$\frac{\text{Total Investment}}{\text{Total Assets}}$	+
	WRA	$\frac{\text{Total Assets}-\text{Loans \& Advances}}{\text{Total Assets}}$	-
Management Efficiency	TATD	$\frac{\text{Total Advance}}{\text{Total Depreciation}}$	+
	ROE		
	AG	PAT/Total Equity	+
		$\frac{\text{Asset}_t-\text{Asset}_{t-1}}{\text{Asset}_{t-1}}$	+
Earnings	OPTA	Operating Profit/Total Assets	+
	NPTA	Net profit/Total Assets	+
	NIMTA	Net Interest Margins/ Total Assets	+
Liquidity	LATD	Liquid Assets/ Total Deposits	+
	LATA	Liquid Assets / Total Assets	+
Sensitivity to market	DIR	Interest Expenses/ Total Deposit	+_

**Source:** Researchers' compilation, 2019

#### 4. Results and Discussion

##### 4.1 CAMELS: The Descriptive Analysis

**Table 2:** Descriptive results of CAMELS under Payment FinTech in WEMA Bank Plc

Performance Indicator	Ratio	Average Years	2012	2013	2014	2015	2016
Capital Adequacy	CAR (%)	16.89	12.66	20.60	17.82	17.18	16.18
	DER (Times)	12.08	54.20	1.64	1.73	1.42	1.41
	AAR (%)	39.90	30.01	29.81	39.02	46.78	53.89
Assets Quality	TITA(%)	20.31	31.99	34.05	10.88	10.46	14.16
	WRA	0.59	0.70	0.70	0.61	0.53	0.42
Management	TATD(%)	55.91	42.31	44.60	56.94	65.13	70.77
	ROE(%)	-74.95	-394.4	3.85	5.42	5.05	5.34
	AG(%)	12.03	-	34.66	15.62	3.71	6.17
Earnings	OPTA(%)	0.99	2.01	0.53	0.81	0.83	0.73
	NPTA(%)	0.05	-2.05	0.48	0.62	0.59	0.62
	NIMTA(%)	4.47	4.79	3.79	4.85	4.47	4.43
Liquidity	LATD	0.15	0.11	0.14	0.20	0.20	0.09
	LATA	0.10	0.08	0.09	0.14	0.14	0.07
Sensitivity to Markets	DIR	-0.21	-0.76	-0.07	-0.06	-0.07	-0.08

**Source:** Researchers' computation, 2019

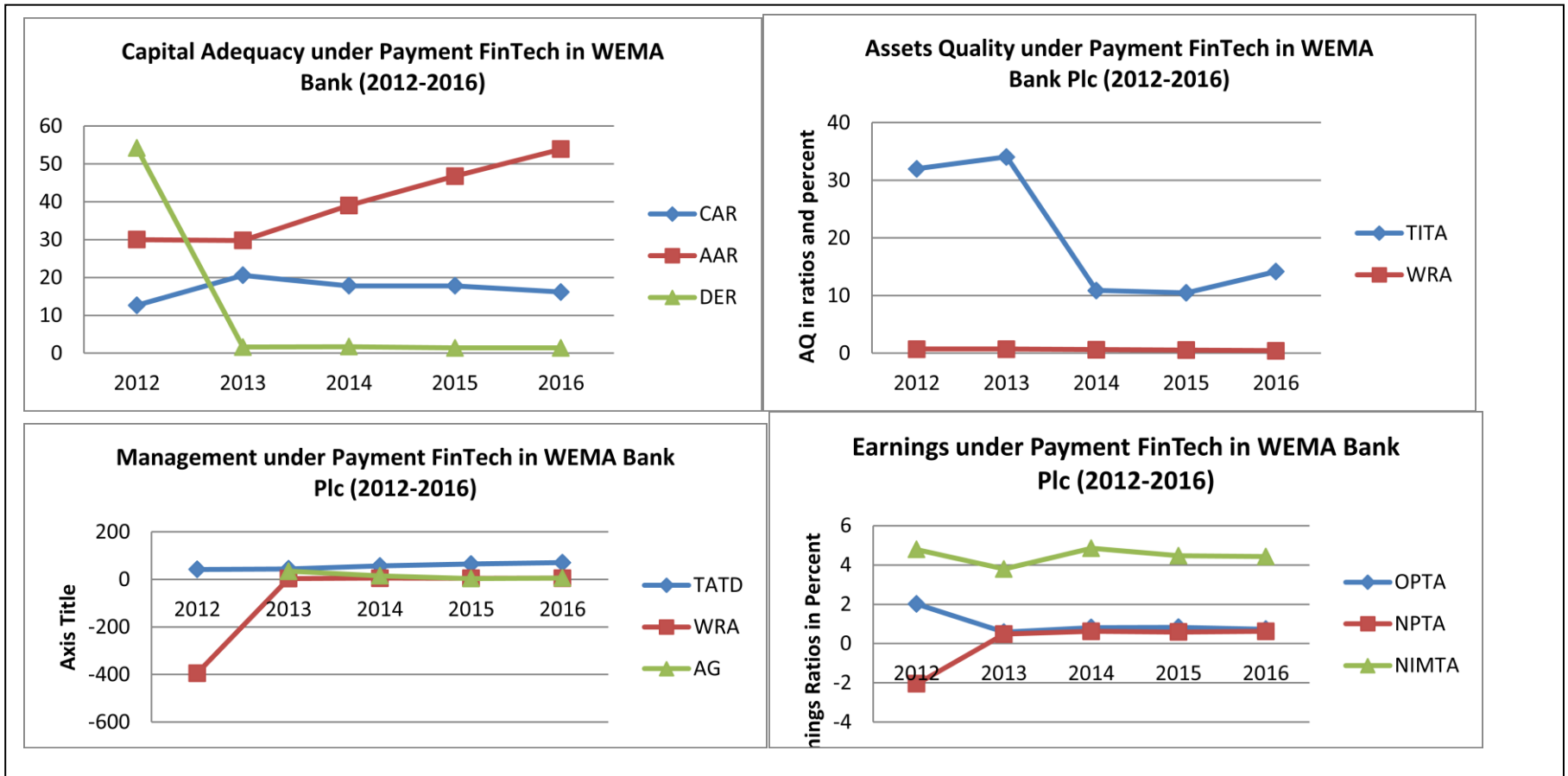
Table 4.1 results revealed that all the included CAMELS ratios conformed to the expected positive signs and negative sign for DIR, except WRA and ROE that have mixed signs which is against the expected positive sign between 2012 and 2016 in WEMA Bank Plc. In specific analysis, first, capital adequacy results in the second row of table 2 showed that all capital adequacy ratios are positive values but cyclical trend. Like CAR, the DER shows positive values and decreasing trend over the years except year 2014, which implies that as WEMA bank implements payment FinTech, the dependency on debt financing reduces. Unfortunate, AAR shows positive values but indicate an increasing trend, implying that payment FinTech did not reduce advances to cover assets within the study periods. Second, asset quality results in the third row found that the WEMA bank asset quality ratios (TITA and WRA) have continually declined within the study periods and imply that the payment FinTech did not contribute significantly to the total investment through assets utilization. Also, the average values of 20.31 percent and 0.59 percent for the periods, 2012 and 2016 found a low asset quality in WEMA bank. Third, the management efficiency ratios results in table 2 found that all except TATD have decreasing trend over the study periods. The TATD results in table 2 has a positive values and consistent increasing trend, implying that the payment FinTech positively contributes to high total deposits in WEMA bank between 2012 and 2016. Unlike TATD, both ROE and AG have unstable trends and importantly, payment FinTech did not have a high positive impact

on WEMA bank ROE and AG respectively within 2012 and 2016. Fourth, the earnings results in the row four of table 2 showed unstable trends over the study periods. OPTA shows a marginal increase in operating profit due to relatively increasing operating costs for 2012 to 2016. NPTA shows an unstable trend though FinTech can be said to have contributed to the change from a negative trend to a positive trend which indicates an improvement. However, the positive average value of 5% is marginally low. Fifth, the liquidity ratios as shown in the table 2 found that the liquidity ratios are low compared to the standard of 2:1, implying that despite the payment FinTech implementation in the WEMA bank. Although there has been a progressive increase from 0.11 to 0.20 except a sharp fall in 2016, liquidity under payment Fintechin Wema Bank for the period 2012 to 2016 did not meet the liquidity benchmark ratio of 2:1. Lastly, the sixth indicator, sensitivity to markets results in table 2 found that a negative trend from 2012 to 2016 under payment FinTech, implying that payment FinTech had reduced the interest expenses to total deposit, and thus positively affects the sensitivity to markets of WEMA bank Nigeria within the study periods.

In general, average years' ratios result in table 2 found that all the included CAMELS except WRA and ROE conformed to the expected positive signs and negative signs for DIR under payment FinTech in WEMA Bank Plc. This suggests that the introduction of payment FinTech had improved WEMA bank performance, proxied as CAMELS between 2012 and 2016.

#### 4.1.2 CAMELS under Payment FinTech : The Graphical Analysis

**Figure 2. CAMELS under Payment FinTech in WEMA Bank Plc (2012-2016)**



**Figure 3. CAMELS under Payment FinTech in WEMA Bank Plc (2012-2016) (CONTD.)**

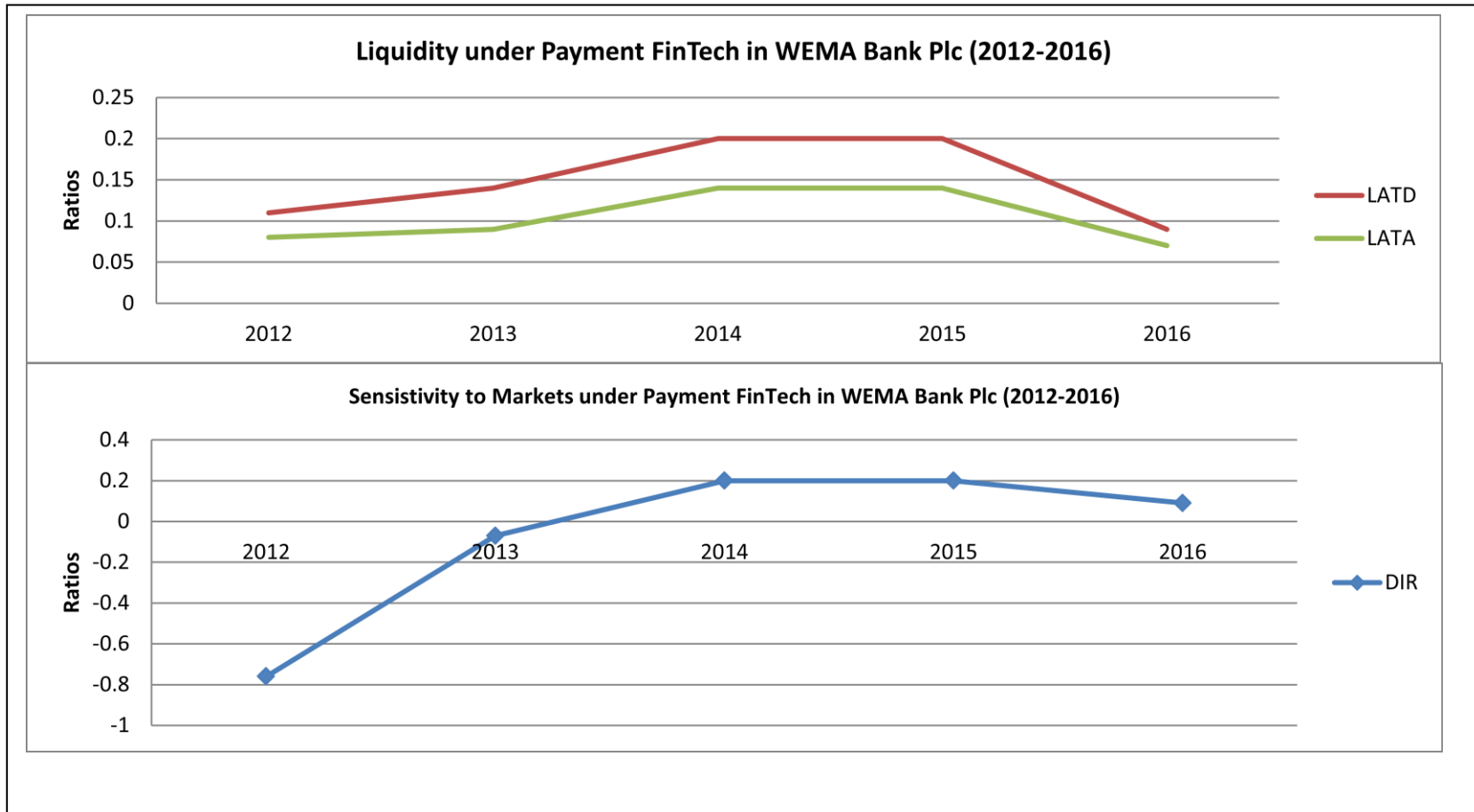


Figure 3 exhibits the CAMELS payment FinTech in WEMA bank Plc between 2012 and 2016. The trend in capital adequacy ratios found that only AAR exhibits an increasing trend while DER and CAR are constant and decreasing trends under payment FinTech between 2012 and 2016 in WEMA bank Plc. Also, the assets quality ratios exhibited unstable trend in TITA while WRA shows a consistent decreasing trend under payment FinTech between 2012 and 2016 in WEMA bank Plc. Unlike capital adequacy and assets quality, the management ratios found that only TATD conforms to an upward trend while WRA and AG exhibit decreasing trends under payment FinTech between 2012 and 2016 in WEMA bank Plc. Unfortunately, earnings ratios also found that OPTA, NPTA and NIMTA exhibited unstable trends under payment FinTech between 2012 and 2016 in WEMA bank Plc. Further, the liquidity ratios also exhibited unstable trends under payment FinTech between 2012 and 2016 in WEMA bank Plc. Finally, the sensitivity to market ratio shows that DIR exhibits an increasing trend from 2012 to 2014 and remain constant between 2014 and 2015 but later sharply fall in 2016. This implies that DIR attributes unstable trend under payment FinTech between 2012 and 2016 in WEMA bank Plc.

#### 4.1.3 CAMELS under Digital FinTech: The Descriptive Analysis

**Table 3. Descriptive Results of CAMELS under Digital FinTech in WEMA Bank Plc**

Performance Indicator	Ratio	Average Years	2017	2018
Capital Adequacy	CAR (%)	6.56	7.26	5.86
	DER (Times)	1.11	1.09	1.12
	AAR (%)	54.39	56.01	52.77
Assets Quality	TITA(%)	15.98	10.82	21.13
	WRA	0.45	0.37	0.52
Management	TATD(%)	72.54	76.79	68.29
	ROE(%)	5.61	4.63	6.59
	AG(%)	7.75	-8.5	24
Earnings	OPTA(%)	0.9	0.79	1.01
	NPTA(%)	0.65	0.60	0.70
	NIMTA(%)	5.39	5.13	5.65
Liquidity	LATD	0.10	0.08	0.11
	LATA	0.08	0.06	0.09
Sensitivity to Markets	DIR	-0.10	-0.12	-0.08

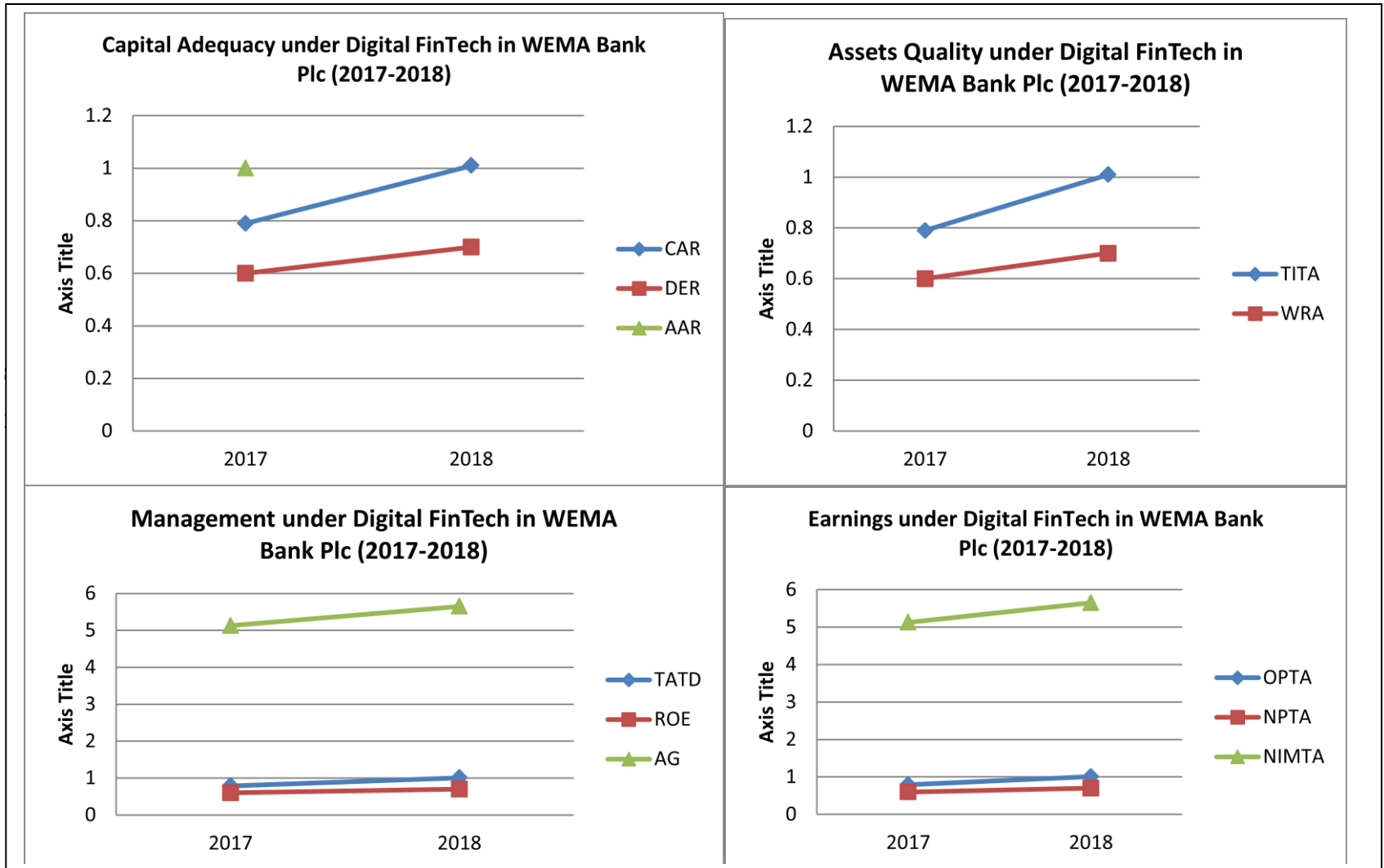
**Source:** Researchers' computation, 2019

Table 3 results present all the included CAMELS ratios under the digital FinTech between 2017 and 2018 in WEMA bank Plc. All the included CAMELS ratios, except WRA conform to the a priori expected signs in this study. In specific analysis, first, capital adequacy results in the second row of table 2 showed that all capital adequacy ratios except DER are positive values

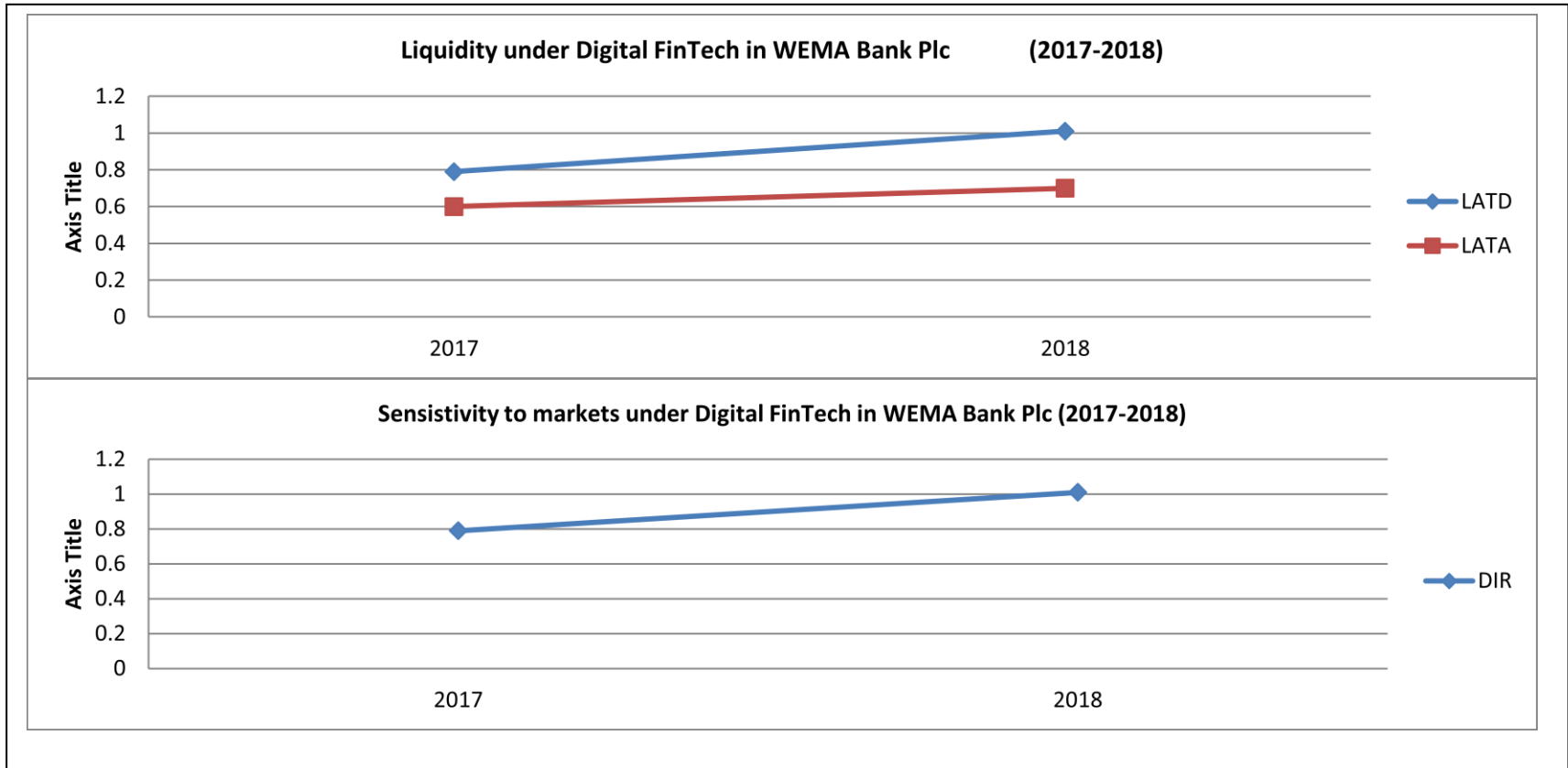
and decreasing trend. Like CAR, the AAR shows positive values and decreasing trend between 2017 and 2018, which implies that as WEMA bank implements digital FinTech, the dependency on short debt financing reduces from 56.01 percent to 52.77 percent. On a contrary, DER shows positive values and increasing trend, implying that digital FinTech did not reduce debt to equity within the study periods, 2017 and 2018. Second, asset quality results in the third row found that the WEMA bank asset quality ratios (TITA and WRA) increased within the study periods and imply that the WEMA bank digital FinTech contribute significantly to the total investment through assets utilization from 10.82 percent to 21.13 percent between 2017 and 2018. Also, the WRA values increased from 0.37 percent to 0.52 percent between 2017 and 2018, implying that improved asset quality in WEMA bank during the implementation of digital FinTech. Third, the management efficiency ratios results in table 2 found that all except TATD have impressive increasing trend over the study periods. The TATD results in table 2 shows positive values but decreasing trend, implying that the digital FinTech reduces deposits to depreciation in WEMA bank between 2017 and 2018. Unlike TATD, both ROE and AG have remarkable increasing trends and importantly, digital FinTech do have high positive impact on WEMA bank ROE and AG respectively within 2017 and 2018. Fourth, the earnings results in the row four of table 2 showed impressive trends over the study periods. OPTA shows high increase operating profit from 0.79 percent to 1.01 percent due to relatively decreasing operating costs for 2017 to 2018. NPTA also shows high increasing trend from 0.60 percent to 0.70 percent, implying improved earnings due to digital FinTech operations. Also NIMTA values from 5.13 percent to 5.65 percent indicate high increased in the net interest margins due to digital FinTech assets utilization. Fifth, the liquidity ratios as shown in the table 2 found that the liquidity ratios are still low compared to the standard of 2:1, implying that despite the digital FinTech implementation, ALAT in the WEMA bank, a marginal increase in LATD from 0.08 percent to 0.11 percent between 2017 and 2018. Therefore, the liquidity ratios under digital Fintech in Wema Bank for the period 2017 to 2018 did not meet the liquidity benchmark ratio of 2:1. Lastly, the sensitivity to markets results in table 2 found that a negative trend from 2017 to 2018 under digital FinTech, implying that digital FinTech had reduced the interest expenses to total deposit from 0.12 percent to 0.08 percent and thus positively affects the sensitivity to markets of WEMA bank Nigeria between 2017 and 2018.

4.1.4 CAMELS under Digital FinTech: The Graphical Analysis

Figure 4: CAMELS under Digital FinTech in WEMA Bank Plc (2017-2018)







Source: Researchers' Chart from SPSS, 2019

Figure 4 exhibits the CAMELS trend under digital FinTech between 2017 and 2018 in WEMA bank Plc. More importantly, all the included CAMELS ratios exhibited upward trends between 2017 and 2018 in WEMA bank Plc.

In comparison, the results in tables 2 and 3 and the figures 3 and 4 revealed that the digital FinTech outperformed the payment FinTech on CAMEL indicators in WEMA bank Plc within the covered period 2012 and 2018.

4.2 CAMELS: The Composite Ranking Analysis

**Table 4. CAMELS Composite Rating and Bank Soundness Grade for Payment FinTech in WEMA Bank Plc**

Performance Indicators	Years	2012	2013	2014	2015	2016	Total		Composite	CAMELS	CAMELS
	Ratios	(1)	(2)	(3)	(4)	(5)	Ranks		Ranking	Scale	Grade
Capital Adequacy	CAR	12.66	20.26		17.82	17.18	16.18	-			
	Rank	5	1		2	3	4	15			
	Composite	5	2		6	12	20	45	3	3	Fair
	DER	54.22	1.64		1.73	1.42	1.14	-			
	Rank	5	3		4	2	1	15			
	Composite	5	6		12	8	5	36	2.4	2	Satisfactory
	AAR	30.01	29.81		39.02	46.78	53.89	-			
	Rank	4	5		3	2	1	15			
	Composite	4	10		9	8	5	36	2.4	2	Satisfactory
	Aggregate Average								7.8		
									2.6	3	Fair
Assets Quality	TITA	31.99	34.05		10.88	10.46	14.16	-			
	Rank	2	1		3	4	5	15			
	Composite	2	2		9	12	25	50	3.3	3	Fair
	WRA	0.70	0.70		0.61	0.53	0.42	-			
	Rank	4.5	4.5		3	2	1	14			
	Composite	4.5	9		9	8	5	35.5	2.54	3	Fair
	Aggregate Average								5.84		
									2.92	3	Fair
Management	TATD	42.13	44.60		0.61	0.53	0.42				
	Rank	5	4.5		3	2	1	14			
	Composite	5	9		9	8	5	35.5	2.54	3	Fair
	ROE	-394.4	3.85		5.42	5.05	5.34				
	Rank	5	4		1	3	2	15			
	Composite	5	8		3	12	10	38	2.53	3	Fair

	Assets growth	-	34.66	15.62	3.71	6.17	-			
	Rank	-	1	2	4	3	10			
	Composite	-	2	6	16	15	49	4.9	5	Unsatisfactory
	Aggregate							9.97		
	Average							3.25	3	Fair
Earnings	OPTA	2.01	0.58	0.81	0.83	0.73				
	Rank	1	5	3	2	4	15			
	Composite	1	10	9	8	20	47	3.13	3	Fair
	NPTA	-2.05	0.48	0.62	0.59	0.62				
	Rank	5	4	1.5	3	1.5	15			
	Composite	5	8	4.5	12	7.5	37	2.47	2	Satisfactory
	NIMTA	4.79	3.79	4.85	4.47	4.43				
	Rank	2	5	1	3	4	15			
	Composite	2	10	3	12	20	47	3.13	3	Fair
	Aggregate							8.73		
	Average							2.93	3	Fair
Liquidity	LATD	0.11	0.14	0.20	0.20	0.09				
	Rank	4	3	1.5	1.5	5	15			
	Composite	4	6	4.5	6.0	25	45.5	3.03	3	Fair
	LATA	0.08	0.09	0.14	0.14	0.07				
	Rank	4	3	1.5	1.5	5	15			
	Composite	4	6	4.5	6.0	25	45.5	3.03	3	Fair
	Aggregate							6.06		
	Average							3.03	3	Fair
Sensitivity to Market Risk	DIR	-0.76	-0.07	-0.06	-0.07	-0.08				
	Rank	5	2.5	1	2.5	4	15			
	Composite	5	5	3	10	20	43	2.87	3	Fair

Source: Researchers' computation from SPSS 17, 2019

Table 4 results present the CAMELS composite ranking that is used to measure the level of bank soundness under payment FinTech between 2012 and 2016 in WEMA bank Plc. Specifically, the included CAMELS were all fair grades, implying neither satisfactory nor unsatisfactory bank soundness of WEMA bank Plc under payment FinTech between 2012 and 2016 in this study. In specific analysis, first, capital adequacy results in the second row of table 4 comprises of three composite ranks and the aggregate average rank. The result found that capital adequacy on aggregate average scale is 3.0, implying that WEMA bank capital adequacy is fair in bank soundness under the payment FinTech operation between 2012 and 2016. Second, asset quality results that comprises of two composite ranks and the aggregate average rank. The result found that asset quality on aggregate average scale is 3.0, implying that WEMA bank capital adequacy is fair in bank soundness under the payment FinTech operation between 2012 and 2016. In same vein, management, earnings, liquidity and sensitivity to markets all have aggregate average scale of 3.0 and this concludes that WEMA bank management, earnings, liquidity and sensitivity to markets are fair in bank soundness under the payment FinTech operation between 2012 and 2016. In summary, the CAMELS under payment FinTech as shown in the table 4 revealed that WEMA bank have fair bank soundness within the periods of 2012 and 2016 in this study.

#### 4.2.2 CAMELS Composite Ranking Analysis under Digital FinTech

**Table 5. CAMELS Composite Rating and Bank Soundness Grade for Digital FinTech in WEMA Bank Plc**

Performance Indicators	Years	2017 (1)	2018 (2)	Total Ratios	Composite Rating	CAMELS Scale	CAMELS Grade
Capital Adequacy	CAR	7.26	5.86				
	Rank	1	2	3			
	Composite	1	4	5	1.67	2	Satisfactory
	DER	1.09	1.12				
	Rank	1	2	3			
	Composite	1	4	5	1.67	2	Satisfactory
	AAR	56.01	52.77				
	Rank	1	2	3			
Assets Quality	Composite	1	4	5	1.67	2	Satisfactory
	Aggregate Average				5.01		
	Rank					2	Satisfactory
	Composite						
	TITA	10.82	21.13				
	Rank	2	1	3			
	Composite	2	2	4	1.33	1	Strong
	WRA	0.37	0.52				
Management	Rank	1	2	3			
	Composite	1	4	5	1.67	2	Satisfactory
	Aggregate Average				3.05		
	Rank					2	Satisfactory
	Composite				1.53		
	TATD	76.79	68.29				
Rank	2	1	3				

	Composite	2	2	4	1.33	1	Strong
	ROE	4.63	6.59				
	Rank	2	1	3			
	Composite	2	2	4	1.33	1	Strong
	AG	-8.5	24				
	Rank	2	1	3			
	Composite	2	2	4	1.33	1	Strong
	Aggregate				3.99		
	Average				1.33	1	Strong
Earnings	OPTA	0.79	1.01				
	Rank	2	1	3			
	Composite	2	2	4	1.33	1	Strong
	NPTA	0.60	0.70				
	Rank	2	1	3			
	Composite	2	2	4	1.33	1	Strong
	NIMTA	5.13	5.65				
	Rank	2	1	3			
	Composite	2	2	4	1.33	1	Strong
	Aggregate				3.99		
	Average				1.33	1	Strong
Liquidity	LATD	0.08	0.11				
	Rank	2	1	3			
	Composite	2	2	4	1.33	1	Strong
	LATA	0.06	0.09				
	Rank	2	1	3			
	Composite	2	2	4	1.33	1	Strong
	Aggregate				2.66		
	Average				1.33	1	Strong
Sensitivity to Market	DIR	-0.12	-0.08				
	Rank	1	2	3			
Risk	Composite	1	4	5	1.67	2	Satisfactory
	Aggregate				1.67		
	Average				1.67	2	Satisfactory

**Source:** Researchers' computation from SPSS 17, 2019

Table 5 results also present the CAMELS composite rating and bank soundness under digital FinTech between 2017 and 2018 in WEMA bank Plc. Unlike table 4, table 5 results found that the aggregate average scale for capital adequacy and sensitivity to market are 2.0, representing satisfactory bank soundness for WEMA bank under digital FinTech between 2017 and 2018. Further, remaining CAMELS in this study found that their aggregate average scales are 1.0, representing strong bank soundness for WEMA bank under digital FinTech between 2017 and 2018. In addition, the results in tables 4 and 5 found that bank soundness under digital FinTech outperforms the bank soundness under payment FinTech in WEMA bank within the study periods 2012 and 2018.

## **5. Conclusion and Recommendations**

This study investigated the comparative analysis of financial technology (FinTech) operation and traditional bank operation performance in Nigeria, using ALAT by Wema Bank Plc as a case study. Based on the CAMELS approach, the outcome of this study concludes that the digital FinTech operations outperform the payment FinTech operations in WEMA bank Plc within the covered period 2012 to 2018. Specifically, both the CAMELS descriptive and composite CAMELS ranking methodology was employed from the annual reports of WEMA bank Plc to measure WEMA bank performance between the digital FinTech and the payment FinTech operations eras in this study. The findings revealed that the digital FinTech operations, commonly called ALAT in WEMA bank resulted to a consistent positive impact on WEMA bank performance between 2017 and 2018 than the payment FinTech operations on WEMA bank performance between 2012 and 2016.

Therefore, the foregoing of the study recommends that the digital FinTech operations should be fully optimized and intensified by the stakeholders in the Nigerian banking sector to remarkably improve the traditional banks performance and also guarantee financial inclusion and stability in the Nigeria banking sector.

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