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CASHLESS POLICY AND BANKS' PROFITABILITY IN NIGERIA

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ABSTRACT: *The transformation of the financial sector of the Nigerian economy has always occupied a cardinal position in the economic policies of all political administrations in Nigeria. Using electronic banking as a platform, the cashless policy was introduced to further deepen the financial market microstructure. This study examined the impact of cashless policy on the profitability of Nigerian banks, against the backdrop that these banks in a cash based economy are known for their huge profits even in the face of associated high cost of operations. Basically, will banks in the cashless regime still make as much profits as they use to make? To address this, secondary data were collected and analyzed using content analysis comparing profits under cash based policy with a cashless regime. The results revealed that cashless economic policy positively impact on banks' profit through reduction in cost of operations and banking the unbanked populace.*

KEYWORDS: Cashless, Electronic banking, POS, Information communication technology, financial reforms

INTRODUCTION

Information technology has influenced every facet of life, transforming subsistence societies into modernized societies. The banking system is not left out of this transformation. The entrance of

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information technology into the banking industry has re-defined banking operations. In this regard, Laudon and Laudon (2001) state that banks cannot ignore information technology, because it plays a vital role in maintaining competitive edge both locally and globally, and that most banks' cash flows are intricately linked to their adoption of information technology. The adoption of information and communication technology in the banking sector is referred to as electronic banking (e-banking). The application of its concepts, techniques, policies and implementation strategies to banking services has become a concern to all banks. In fact, it is a pre-requisite for local and global competitiveness, because it directly affects the management decisions, plans, and products and services to be offered by banks. It also continues to change the way banks and corporate relationships are organized worldwide and the variety of innovations to service delivery (Adewuyi, 2011).

Electronic banking has been recognized to play an important role in economic development on the basis of its ability to create liquidity in the economy through financial intermediation between the surplus and deficit sectors of the economy. It offers a platform where banks' products and services can be accessed and utilized with ease, encouraging banking culture and serving as catalyst for economic growth (Amaka, 2012; Onyiye, 2012). The Central Bank of Nigeria (CBN) in a Circular released in 2013 states that of the 84.7 million adult populations, only 30.7 million representing 36.3% are served by the formal financial services sector. This is low compare to 68% in South Africa and 41% in Kenya. It added that twenty-one deposit money banks are serving about 20 million clients through a network of only 6,000 branches and 10,000 Automated Teller Machines (ATMs).With an adult population of 84.7 million, this shows that a large part of the banking market in Nigeria is still untapped. Accordingly, there are enormous potentials for increasing the funding base of the economy through mobilization of savings and profits of commercial banks and other financial services institutions (The Nation, 2013; The Nigerian Voice, 2013).

Most banks in Nigeria in their operations under a cash based economy are known for the huge profit they declare each year, notwithstanding the fact that such system is characterized by high cost of operations. Cash based economy is not without cost to the banking system, government and individuals. High cash usage results in high cost of processing borne by every entity across the value chain. For example, the cost of printing new notes as a result of frequent handling of cash is said to cost a colossal amount annually. Generally, cost of cash in Nigeria's financial system is high and on the increase (Central Bank of Nigeria, 2011; Nweke, 2012). Table 1 presents direct cost of cash to financial system in Nigeria in 2009.

Table 1: Direct Cost of Cash to Financial System in Nigeria

Type of Cost	Amount (₦ billion)	Percentage
Cash in transit	27.3	24
Cash processing cost	89.1	67
Vault management cost	18.1	9
Total cost of cash(CBN + Banks	114.5	100

Source: Extracted from Central Bank of Nigeria (2012). *Towards a Cashless Nigeria: Tools and Strategies*

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The figures in table 1 indicate that cash in transit cost and processing fees cost stood at ₦27.3 billion and ₦89.1 billion, representing 24% and 67% respectively of the total cost of cash. Vault management cost amounted to ₦18.1 billion, representing 9% of the total cost of cash to the financial system. The total cost of cash to both Central Bank and other banks in 2009 amounted to a terrifying figure of ₦114.5 billion.This statistical evidence provides a platform for a cashless policy.

One of the aims of the cashless policy is to make the 63.7% unbanked populace key into formal financial services. The basic question to be addressed therefore is: how will the cashless policy affect the profit of banks bearing in mind that they have been very profitable under the cash base policy? Put differently, is the cashless policy going to impact on banks' profit positively or negatively? This is the major concern of this paper.

REVIEW OF LITERATURE

The evolution of conventional money has been well documented in economics literatures. However, recent developments in information and communication technology have influenced the role of money in economic activities. As a result, we can now talk of electronic money and hence electronic banking. Empirical studies have attempted an estimate of private and social costs of payment instruments (Humphrey and Berger, 1990; DeGrauwe et al 2000), patterns in the use of e-payment instruments (Humphrey et al 1996; Carrow and Staten, 2000), the cashless and monetary economy (Gali and Gambetti, 2009; Kriwoluzky and Stoltenbery, 2010), and the role of Central Bank in a cashless economy (Claudia and DeGrauwe, 2001; Marco and Bandiera, 2004). While there is an avalanche of studies on these different strands of the subject focusing on developed countries, it is however sad to note that empirical studies are yet to focus on developing countries of Africa. Only recently, Odior and Banuso (2012) attempted an evaluation of the implication of cashless banking in regards to monetary policy in Nigeria while Obumneke, et al (2014) looked at the effectiveness of cashless policy in attracting foreign direct investment in Nigeria. In this connection, more studies focusing on Africa in general and Nigeria in particular are warranted.

Electronic banking is an important element in the Nigerian financial sector reforms. With the advent of electronic banking, not only has manual banking reduced drastically, but also, the culture of keeping ledgers and recording transactions by hand has reduced. Now, banking has become very fast, customers get their services more quickly and reliably, local and international transactions require little time as compared to before (Sana et al, 2011). According to Businessdictionary.com, electronic banking is the use of computers to carry out banking transactions, such as withdrawals through cash dispensers or transfer of funds at Point of Sales (POS). In other words, it is banking transactions conducted through computerized system, as electronic fund transfer by Automated Teller Machine, intended to speed operation and reduce cost.

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Electronic banking and cashless banking are closely related. Cashless banking is that banking system aimed at reducing, but not eliminating, the volume of physical cash circulating in the economy whilst encouraging more electronic based transactions. In other words, it is a combination of e-banking and cash-based system (Odior and Banuso, 2012). Ejiofor and Rosak (2013) see the cashless system as one with the ability to store money in an electronic purse on a card which is then used to purchase product at vending machine or at any point of sales terminal located within the business premises. Akhalumeh and Ohiokha (2012) see cashless economy as a system in which transactions are not done predominantly in exchange for actual cash. It is essentially a mobile payment system which allows users to make payment through GSM phones with or without internet facilities. This system increases convenience, create more service options, reduce cost of cash related crimes and provide cheaper access to credit (Okey, 2012; Obina, 2013).

Cashless Banking Channels

Some outstanding cashless banking channels known all over the world are mobile banking, internet banking, and telephone banking. They are explained below.

Mobile Banking

Mobile banking refers to the provision of banking and financial services with the help of mobile telecommunication devices. It is a system that allows customers of a financial institution to conduct a number of financial transactions through a mobile device such a mobile phone. It involves the use of mobile phone for settlement of financial transactions. Mobile banking is popular and exciting to the customers given the low infrastructure requirements and a rapidly increasing mobile phone penetration in Nigeria. Services covered by this product include account enquiry, funds transfer, phone vending, changing password, and bill payments (Siyanbola, 2013). Banks like First Bank, Ecobank, Guarantee Trust Bank, United Bank for Africa and others have begun using mobile banking to serve their customers. First Bank brand for mobile banking is Firstmonies. Some of the features of mobile banking are: the GSM phone number serves as the account number which is linked to the customer's account; it has a wallet which can be loaded just by moving cash from bank account.

Internet Banking

Internet banking is also referred to as online banking. It involves conducting banking transaction on the internet (www) using electronic tools such as the computer without visiting the banking hall. Internet banking, like mobile banking, uses the electronic card infrastructure for executing payment instructions and final settlement of goods and services over the internet between the merchant and the customers (Siyanbola, 2013).

Telephone Banking

This is an electronic banking product that allows customers to access banking services through a dedicated telephone line from the comfort of their homes, offices etc. Services rendered here include; balance transfer, change of pin, authorization of inter-branch money transfer, transaction alert (withdrawal or deposit) and enquiry (Adewuyi, 2011)

METHODOLOGY

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The data for this study are secondary data collected from various publications by the CBN. Content analysis was applied to organize the data which existed in varied and diverse forms into a useable form. In this regard, the study found the following statistical facts and also made some simplifying assumptions, which conform to those made by other analysts, in analyzing the data.

i. Value of transaction per time is ₦1, 000
ii. All accounts are current accounts
iii. Charges on deposits and withdrawals (including payments) are the only source of banks' income.
iv. COT is ₦5 per mile for every withdrawal
v. Internet banking charge is ₦70 per transaction
vi. The cost of operations in a cash based economy is ₦450, 000,000
vii. POS charge is 1.25%

The hypotheses to be tested are: H_{O1}. Cashless policy has a negative impact on banks' income. H_{O2}. Banking the unbanked will have a negative impact on banks' income. H_{O3}. There is no significant impact of reduction in cost of operation on banks' income in a cashless economy. The decision rule in testing each of the hypotheses is that, if the profit and or income of banks under a cashless policy are higher, the null hypotheses are rejected.

DATA PRESENTATION, ANALYSIS AND RESULTS

In this section, the three hypotheses formulated to guide the study are tested.

Hypothesis 1: Cashless policy has a negative impact on banks' income.

To test this hypothesis, the study analyzed data to help present the total income of banks in a cash based system vis-a-vis a cashless system.

Table 2: Banks cash transactions and payment channels as at June, 2011

Payment Channels	Transaction Volume
ATM Withdrawals	109,592,648
OTC cash withdrawal	72,499,812
Cheques	29,159,960
POS	1,059,069
Web	2,703,516

Source: Extracted from Central Bank of Nigeria, (2012). *Towards a Cashless Nigeria: Tools and Strategies*

Table 2 shows the volume of transactions that took place in 2011 through different payment channels. Given that the value of transaction per time is ₦1, 000, the total value of transactions will be as shown in table 3.

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Table 3: Value of transactions before the introduction of cashless policy

Payment channels	Transaction volume (₦)	Total value of transactions (₦)
ATM Withdrawals	109,592,648	109, 592, 648, 000
OTC cash withdrawal	72,499,812	72, 499, 812, 000
Cheques	29,159,960	29, 159, 960, 000
POS	1,059,069	1, 059, 069, 000
Web	2,703,516	2, 703, 516, 000

Source: Authors' computation

Given that: (i) COT is ₦5 for every ₦1, 000 withdrawn or transferred, (ii) POS is ₦1.25 of each transaction, (iii) Internet charges is ₦70, then we have the results in table 4.

Table 4: Total income of banks before the cashless policy

Payment channels	Transaction volume	Total value of transaction	Bank charges	Income to banks (₦)
ATM Withdrawals	109,592,648	109, 592, 648, 000	₦5/mile	547, 963, 240
OTC withdrawal	72,499,812	72, 499, 812, 000	₦5/mile	362, 499, 060
Cheques	29,159,960	29, 159, 960, 000	₦5/mile	145, 799, 800
POS	1,059,069	1, 059, 069, 000	1.25% of each transaction	13, 383, 362.5
Web	2,703,516	2, 703, 516, 000	₦70 per transaction	189, 246, 120
TOTAL				**1, 258, 746, 582.50**

Source: Authors' computation

From table 4, the estimated total income derived by banks from their operation is ₦1, 258, 746, 582.50

Computation of banks' income in a cashless policy regime

In a cashless policy regime, OTC cash withdrawal will be subsumed into POS. Also, a large number of ATM withdrawals are expected to migrate to POS. It is estimated that the new volume of POS following the migration will average 182,092,460. Using this information, in conjunction with other information in table 2, banks' income in the cashless policy regime is estimated as

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shown in table 5. Note that in a cashless economy: (i) there is no COT, (ii) POS charges is 1.25% of each transaction, and (iii) internet banking charge is ₦70 per transaction.

Table 5: Estimated banks' incomes under a cashless policy

Payment channels	Transaction volume	Total value of transaction ₦'000	Bank charges	Income to Banks ₦
ATM Withdrawals	1,059,069	1,059,069	₦ 5/mile	Nil
OTC cash withdrawal	Nil	Nil	Nil	Nil
Cheques	29,159,960	29, 159, 960	₦ 5/mile	Nil
POS	182, 092, 460	182, 092, 460	1.25% of each transaction	2, 276, 155 750
Web	2,703,516	2, 703, 516	₦70/ transaction	189, 246, 120
TOTAL				**2, 465, 401, 870**

Source: Authors' Computation

From the analysis presented in table 5, the income of banks in a cashless regime is estimated at ₦2,465,104,870 while the estimate in a cash based regime is ₦1, 258, 746, 582.50 as shown in table 4. Clearly, the income of banks in a cashless economy is higher than the income in a cash-based economy. Therefore, the null hypothesis that, cashless policy has a negative impact on banks' income is rejected. Hereby, cashless economic policy is expected to have positive impact on banks' income.

Hypothesis 2: Banking the unbanked will have a negative impact on banks' income

The testing of this hypothesis proceeds from the remark by the Central Bank of Nigeria that "… only 36.3 percent of the country's adult population, representing 30.7 million out of 84.7 million is served by the formal financial system" (The Nation, 2014). That is to say 54 million Nigerian's are not banked. Let's find out if banking the outstanding 54 million Nigerian adults will have a negative or positive impact on banks' income.

Now, from table 5, 30.7 million persons accounted for 182,092,460 volumes of POS transactions and 2,703,516 volumes of Web transactions. By proportion, the 84.7 million persons will account for:

POS: (182, 092, 460/30, 700, 000) X 84, 700, 000

= 502, 385, 386 volume of transactions

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Web: (2, 703, 516/30, 700, 000) X 84, 700, 000

=7, 458, 886 volume of transactions

With this information, and bearing in mind the charges in cashless economy, the estimated banks' income is computed in table 6.

Table 6: Estimated banks' incomes in a cashless policy regime (the whole population is banked)

Payment channels	Transaction volume	Total value of transaction	Bank charges	Income to Banks ₦
ATM Withdrawals	109, 592, 648	109, 592, 648, 000	Nil	Nil
OTC cash withdrawal	Nil	Nil	Nil	Nil
Cheques	29,159,960	29,159,960, 000	Nil	Nil
POS	502, 385, 386	502, 385, 386, 000	1.25% of each transaction	6,279,817,325
Web	7, 458, 886	7, 458, 886, 000	₦70/ transaction	522, 122, 020
TOTAL				**6, 801, 939, 345**

Source: Authors' Computation

From table 6, the estimated income of banks after the financial inclusion of 54 million bankable adults increased significantly from ₦2, 465, 401, 870 (as shown in table 5) to ₦ 6, 801, 939, 345 (as shown in table 6). This result shows that banking the unbanked will impact positively on the income of banks. With this positive impact, the null hypothesis is rejected.

Hypothesis 3: There is no significant impact of reduction in cost of operation on banks' profit in a cashless economy.

According to Central Bank of Nigeria (2011), the cost of banks' operation is expected to reduce by 30% in a cashless regime. Estimate of the total cost of operation of banks in a cash-based economy is ₦450, 000, 000.

Using this information, along with the results in table 4, the estimated profit of banks before the introduction of cashless policy will be:

Total income - Cost of operation

₦1, 252, 869, 069.38 – ₦450, 000, 000

= ₦802, 869, 069.38

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By the financial inclusion of all bankable population, the number of account is expected to increase by 276% {(840, 700, 000/30,700, 000) X 100}. Proportionally, total cost of operation will increased by 276% to:

₦450, 000, 000 X (276/100)

= ₦1, 242, 000, 000

It is expected that cost of operation will reduce by 30% in a cashless economy. Therefore, cost of operation will be:

₦1, 242, 000, 000 X (70/100)

= ₦869, 400, 000

The estimated profit of banks in the cashless policy regime will be:

₦6, 801, 939, 345 – ₦869, 400, 000

= ₦5, 932, 539, 345

From above, the reduction in the cost of banks' operations has significant impact on the profit of banks after the full inclusion of the unbanked population into the formal banking system. As a result, the null hypothesis is rejected.

DISCUSSION OF FINDINGS

From the analysis done above, where charges on deposits and withdrawals are taken as the only source of banks' income, it is clear that a cashless economy will have a positive impact on banks profit. The analysis of the first hypothesis shows that if banks are to take 100% of the charges on POS, in both cash-based and cashless setting, they will make more profit in a cashless economy even when the entire population is not fully banked. This confirms Tunde (2012) assertion that, "… the cashless Nigeria program has even brightened the horizon for banks to make even higher income from transaction fees…." If the entire bankable population is banked, the income of banks will increase significantly. As shown in the second hypothesis, the number of transaction increased significantly thereby resulting in significant increase in banks' income. Analysis of the third hypothesis also shows that the profit of banks in a cashless setting will increase significantly as cost of operation is expected to fall by 30%.

IMPLICATIONS OF THE STUDY

The introduction of electronic banking in Nigeria has been found to have impacted positively on the development of payment system in particular and the banking system in general. Electronic banking is the platform on which cashless policy sails. This study found that some COT and OTC charges which are associated with a cash-based economy will be history in a cashless economy. On the basis of data analyzed, cashless policy will impact positively on the fortunes of banks even though some of the charges will not wholly and exclusively be their revenue.

It is important to stress the fact that the cashless policy is but one option to addressing the financial challenges of the Nigerian economy and is not without consequences. Good as it may look; the system has its own cost. For instance, the use of POS in a cashless setting will attract special

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charges that do not go with cash transactions. A price tag of 1.25% of the cost of every transaction done through the POS terminal will be charged (this is subject to a maximum of N2, 000 per transaction) by the operators. Normal banking commission on turnover is N5 for every N1, 000 withdrawn, representing 0.5% of the amount of very transaction, compare to the CBN approved charge of 1.25% for POS which translates to N12.5 for every N1, 000.

Implicitly, future economic and financial policies targeted at the financial sector of the economy should build on the electronic banking platform so as to give room for its development and subsequent entrenchment into societal banking practice. Government should ensure availability of infrastructures needed to support banking activities so that risk control measures are enhanced. The cashless policy also has implications for control exercised by CBN and the use of monetary policy for management of the economy.

CONCLUSION

The banking system transition to a cashless system will no doubt benefit the banking industry in many ways. Based on the findings, the following conclusions are drawn:

i. The adoption and implementation of cashless policy will enhance banks' efficiency by making them more productive and effective.
ii. The cost of operation in a cashless economy will reduce substantially, thereby resulting to an increase in income of banks.
iii. Cashless policy will make banking transactions easier by bringing services closer to the customers.
iv. The unbanked will become banked, thereby increasing the customer base of banks which will on the long run reduce the volume of cash in circulation. This will avail banks with more deposits to do their businesses which will increase their fortunes and domestic investments.
v. The adoption of cashless policy will impact positively on banks' profits.

REAS FOR FUTURE RESEARCH.

This study has attempted an examination of the impact of Nigeria's cashless policy on the profitability of banks. Given that the major players in any financial system are the banks, it is important to evaluate the impact of any policy reforms and policy shifts on their activities. Any policy that will negatively affect the profits of banks is likely to meet with stiff opposition. In this connection, further studies on how the cashless policy will benefit banks are needed. For instance, will other POS card acceptance services stakeholders attract a significant part of banks' income in a cashless economy? What are the likely effects of internet fraud (that may become prevalent) on banks' profitability? These and other areas are worth investigating.

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