CASHLESS POLICY AND ITS IMPACT ON THE NIGERIAN ECONOMY

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ABSTRACT

This study examines the cashless policy and its impact on Nigerian economy with clarifications on issues, benefits and challenges of classless economy. Quarterly time series data from 2011(Q1–Q4) to 2017 (Q1–Q4) on Cheques Cleared Value (CHEV), Automated Teller Machine Payment Value (ATMV), Point of Sale Value (POSV), Web / Internet Transfers Payment Value (WEBP), Mobile Payment Value in Nigeria (MOBP) and National Electronic Funds Transfer Value (NEFT) as proxy for the adoption of cashless policy and Gross Domestic Product (GDP) as proxy for its impact on Nigerian economy used in this study were obtained mainly from secondary sources and in particular from Central Bank of Nigeria Statistical Bulletin (2017). The Phillips-Perron test results showed that that all the variables were stationary at first difference except NEFT which was integrated at level 1(0), this means the series CHEV, ATMV, POSV, MOBP and GDP were integrated at order one I(1) while the results from the Johansen cointegration techniques revealed a long run relationship between CHEV, ATMV, POSV, MOBP, NEFT and GDP. The short run regression results also revealed that the use of cashless policy instruments particularly ATM, WEB and NEFT have positive and significant impact on gross domestic product in Nigeria. This positive impact is as a result of usage of e-transactions through technology acceptance and diffusion of innovation of cashless policy in Nigeria. The results also revealed that CHEV, POSV and MOBP have inverse and insignificant impact on Gross Domestic Product in Nigeria. The insignificant impact can be attributed to poor power / internet infrastructures, inadequate supply of point of sales devices and unfriendly mobile applications of some Deposit Money Banks (DMBs) in Nigeria. The study, therefore, recommended that the cashless policy should be strengthened in Nigeria by government and DMBs by investing positively on internet, electricity (power supply) to help correct the bottle necks of point of sales and internet mobile transactions.

Keywords: Cashless Economy, Automated Teller Machine, Point of Sale, Web / Internet Transfers, Mobile Payment and National Electronic Funds Transfer

1.0 Introduction

The battle for efficient and effective financial payment system in Nigeria dated back to 1894 when British Bank for West Africa (BBWA) successfully managed, circulated and distributed the British silver coins as a means of settlement of trade transaction and debts in the British West Africa colonies. Since then, the system has been changing baton and race with the hope of getting it right. While the effort towards effective payment mechanism is ongoing the system continues to expand the horizon of both local and foreign based financial products. Despite these developmental changes into the product and process mechanism, the continued "cash and carry" syndrome with volumes of cash in transit increased unabated (Adeyeye & Ajinaja, 2014).

Cashless policy was initiated in 2011 by the former Central Bank of Nigeria Governor, Lamido Sanusi with the aim to establish an environment where an increasing proportion of transactions are carried out through electronic platforms. The cashless policy is projected to provide mobile payments services, breakdown the traditional barriers holding the financial inclusion of most Nigerians, and bring low cost, secure and convenient financial practices to urban and rural areas across the country (Taiwo, Ayo, Afieroho & Agwu, 2016). In another research it was reported that the Central Bank of Nigeria introduced the cashless policy in 2011 with the hope of curtailing the negative consequences of cash based economy. Cashless economy is an economy where transaction can be done without necessarily carrying physical cash as means of exchange of transaction but rather with the use of credit or debit or other measures of card and data payments for goods and services (Omotunde, Sunday & John-Dewole, 2013). The cashless economy policy initiative of the Central Bank of Nigeria (CBN) is a move to improve the financial terrain but in the long run sustainability of the policy will be a function of endorsement and compliance by end-users (Ejiro, 2012).

The CBN cash policy stipulates a daily cumulative limit of N150, 000 and N1, 000,000 on free cash withdrawals and lodgments by individual and corporate customers respectively in the Lagos State with effect from March 30, 2012. The cashless policy introduced by the CBN is aimed at achieving a cashless economy and was conceptualized by the apex bank to increase the proficiency of Nigeria's payment systems which will in turn improves the quality of service being offered to the banking public. One of the prerequisites for the development of national economy according to Ajayi and Ojo (2006) is to encourage a payment system that is secure, convenient and affordable. In this regard, developed countries of the world, to a large extent have substantially moved from paper to electronic payment systems (Humphrey, 2004).

The Nigerian cashless system of payment has been evolving in line with the global payments evolution. Cashless system of payments and instruments are significant contributors to the broader effectiveness and stability of the financial system. Innovations in technology and business models have implications for the efficiency and safety of cashless system of payments hence the nation's quest of migrating from cash to cashless economy has been on the front burner (Akara & Asekome, 2018). Individuals and corporate organizations that make cash transactions above the limits will be charged a service fee for amounts above the cumulative limits. Furthermore, 3rd party cheques above N150, 000 shall not be eligible for encashment over the counter with effect from January 1, 2012. Value for such cheques shall be received through the clearing house. All Nigerian banks by this policy were expected to cease cash in transit lodgment services rendered to merchant-customers from January 1, 2012 (Omotunde, Sunday & John-Dewole, 2013 and (Akara & Asekome, 2018). The policy advanced the use of information technology facilitates fund transfer, thereby reducing time wasted in Banks. They added that the proper implementation of mobile phones and other technologies aids the implementation of cashless policy and hence, the growth of cashless economy in Nigeria.

For better understanding of the current payment systems in Nigeria, Central Bank of Nigeria (2017) reported cleared cheques, Automated Teller Machine payments, point of sale payment, web / internet transfers payments, mobile payments, Nigerian interbank payments / Nigerian interbank settlement scheme fund transfer, national electronic funds transfer, m-mobile, e-bills pay, remittances and central pay as the electronic payment system available in Nigeria to sustained cashless economy

The introduction of the implementation of cashless policy began in Lagos State, Nigeria. According to Central Bank of Nigeria (CBN, 2011) Lagos state accounted for 85% of POS and 66% of cheques transaction in Nigeria. Cashless economy aims at reducing the amount of physical cash circulating in the Nigeria economy and thereby encouraging more electronic–based transaction. According to Central Bank of Nigeria (CBN, 2011) the policy is expected to reduce cost incurred in maintaining cash-based economy by 90% upon its full implementation in Nigeria. This study aims to look at the impact of cashless economy in Nigeria (Omotunde, Sunday & John-Dewole, 2013). Against this backdrop, the current study sought to empirically investigates the cashless policy and its impact on Nigerian economy with clarifications on issues, benefits and challenges of classless economy using quarterly time series data from 2011(Q1–Q4) to 2017 (Q1–Q4) on Cheques Cleared Value (CHEV), Automated Teller Machine Payment Value (ATMV), Point of Sale Value (POSV), Web / Internet Transfers Payment Value (WEBP), Mobile Payment Value in Nigeria (MOBP), National Electronic Funds Transfer Value (NEFT) as proxy for the adoption of cashless policy and Gross Domestic Product as proxy for its impact on Nigeria economy.

2.0 Literature Review

2.1 Conceptual Issues

Ejiofor and Rasaki (2012) sees the cashless system as one with the ability to store money in an electronic purse or a card which is then used to purchase product at vending machine, or at any point of sales terminal located within the business premises. Cashless economy is one in which there are assumed to be no transaction frictions that can be reduced through the use of money balances, and that accordingly provide a reason for holding such balances even when they earn rate of return (Woodford, 2003 cited in Omotunde, Sunday & John-Dewole, 2013).

The cashless economy is a system in which transactions are not done predominantly in exchange for actual cash (Akhalumeh & Ohiokha, 2012). It is essentially a mobile money payment system which allows users to make payment through GSM phones with internet facilities. This system increases convenience, create more service options, reduces risk of cash- related crimes and provide cheaper access to banking services and access to credit (Yaqub, Bello, Adenuga & Ogundeji, 2013). According to Cobb (2005) efficient, safe and convenient electronic payment carry with them a significant range of macro – economic benefits while the high level of cash transactions creates an opportunity for the electronic payment industry, it also imposes a cost on local economies. Cash has to be minted, securely transported, counted and reconciled, kept secure and maintained for re-use time and time again. The per-payment cost is high and will always remain high whereas the costs of electronic system are fixed. Once the infrastructure has been built, the costs per transaction are very low. When cardholders use their cards at the point of sale they are helping to keep money in the banking system.

Cashless economy is not the complete absence of cash, it is an economic setting in which goods and services are bought and paid for through electronic media. Woodford (2003) defined cashless economy as one in which there are assumed to be no transactions frictions that can be reduced through the use of money balances, and that accordingly provide a reason for holding such balances even when they earn rate of return. In a cashless economy, how much cash in your wallet

is practically irrelevant. You can pay for your purchases by any one of a plethora of credit cards or bank transfer. It has been observed that developed countries of the world, to a large extent, are moving away from paper payment toward electronic instrument especially payment cards. Some aspects of the functioning of the cashless economy are enhanced by e-finance, e-money, e-brokering and e-exchanges. These are all transactions and payments effected in a cashless economy (Roth, 2010 & Moses-Ashike 2011).

Humphrey (2004) observed that developed countries of the world to a large extent, are moving away from paper payment instruments toward electronic ones, especially payment cards. Some aspects of the functioning of the cashless economy are enhanced by e-finance, e-money, e-brokering and e-exchanges. All these media refer to how transactions and payments are effected in a cashless economy (Moses-Ashike, 2011). Marco and Bandiera (2004) argue that increased usage of cashless banking instruments strengthens monetary policy effectiveness and that the current level of e-money usage does not pose a threat to the stability of the financial system. However, it does conclude that central banks can lose control over monetary policy if the government does not run a responsible fiscal policy. For the cashless economy to work effectively, illiteracy which is a serious impediment for the adoption of e-payment need to be reduced to the bearest minimum and also the cost of internet which must be supported with uninterrupted power supply along with the acceptance of new technology among customer's and staff. Ifeakandu (2011) agrees with this submission when he pointed that problems associated with the operation of cashless economy are communication issues like power, ICT and uptime payment platform and the interoperability of networks.

The Central Bank of Nigeria and other regulatory agencies in the financial sector must ensure that service providers adhere to minimum security standards on their web-based platform, as security issue is a major challenge in the development of the cashless system (Mieseigha & Ogbodo, 2013). Akhalumeh and Ohiokha (2012) in a related study found that limited POS/ATM constitute a problem of the cashless system, this was why they opined in their study in 2012 that provision of adequate terminals and Automated Teller Machines (ATMs) are essentials of a cashless economy, this submission was supported by the CBN in their directive to banks and independent service providers to deploy more ATMs and ensure their efficiency for a smooth implementation of the cashless policy (Ejiofor & Rasaki 2012). These data verify the claim of Echekoba and Ezu (2012) on the problem of cash based economy and cashless policy in Nigeria. For effective cashless implementation in Nigeria availability of sufficient and well-functioning infrastructure (notably electricity), harmonization of fiscal and monetary policy, regular assessment of the performance of cashless banking channels, consideration of the present state and structure of the economy, redesign of monetary policy framework and greater efforts towards economic growth whilst managing inflation should be considered (Odior & Banuso, 2013).

Money is often described as having three functions such as a unit of account function, a medium of-exchange function and a store-of-value function. In a cashless economy, the third is not operative and probably, neither is the second. Cashless economy does not refer to an outright absence of cash transactions in the economic setting but one in which the amount of cash-based transactions are kept to the barest minimum. It is an economic system in which transactions are not done predominantly in exchange for actual cash (Ezeamama, Ndubuisi, Marire & Mgbodile 2014). A cashless society possesses the following characteristics;. All the money used is issued by private financial institutions (banks, and possibly other firms). It is conceivable that the central bank continues to operate like other banks, issuing its own deposits that could be used as money in the same way as other bank deposits are. However, in that case the central bank has no monopoly in the issue of Money. In a cashless society the unit of account (e.g. Dollar, euro) remains a national affair

and is provided by the state. The followings among others enhance the functioning of cashless economy; e-finance, e-banking, e-money, e- brokering, e-exchanges etc. In a modern economy, the use of noncash payment methods such as cards (credit and debit) dominates the use of cash in payments (Ezeamama, Ndubuisi, Marire & Mgbodile, 2014).

Giving conceptual **clarifications on issues** on e-banking product and services in modern day economy will help in understanding the efficacy of the classless policy in Nigeria. **Point of Sale (POS)** terminals is the mode of e-banking that handles Cheque verification, credit authorization, cash deposit and withdrawal, and cash payment. It enhances electronic fund transfer at the point of sales. Thus customers account would be debited immediately with the cost of purchase in an outlet such as a petrol station or supermarket. The implication of this is that customers can make payment for goods and services without necessarily coming in contact with physical cash as the purchase price would be debited on the buyer's card account and credited on the seller's account. They are indeed alternatives to handling or transacting cash for transfers and for payments of goods and services purchased. POS terminals allow merchants access to card payments for sale of products and services e.g recharge cards, bill payments, lottery tickets etc. **GSM/Mobile banking** is the mode of e-banking primarily uses mobile phones as the electronic devices. Mobile phone gives customer the opportunity to operate their account with bank as long as their phones and network services provider support the short messaging service (SMS) which would enable the customer check account balance (Ajayi, 2014 and Acha, Kanu & Agu, 2017).

Automated teller machine (ATM) is a computer controlled device that dispenses and provides other services to customers who identify them with a personal identification number (PIN). The physical carriage of cash as well as frequent visit to the banks is being reduced. The principal advantage of ATM is that it dispenses cash at anytime of the day even as it needs not to be located within the banking premises but in stores, shopping malls, fuel stations etc, unlike the traditional method where customers have to queue for a very long period of time to withdraw cash or transfer funds. The ATM is the most popular e-transaction solution in Nigeria. ATM is popular because of its convenience. With ATM, it is a lot easier to withdraw money or to check account balance. Also, ATM machines can perform other functions like fund/cash transfer, mobile phone credit recharge and bills payment, cash withdrawals and balance inquiry remain the most popular applications sort after by users in Nigeria. **Card System** is a unique electronic payment type which involves the use of smart cards. Smart cards are devices with embedded integrated circuit being used for settlement of financial obligations. It can be used as credit card, debit card and even ATM cards. The power of these cards lies in its sophistication and acceptability to store and manipulate data as well as handling of multiple applications on one card securely. Credit cards, debit cards and e-wallets (like mobile money) make cashless shopping a lot more convenient. Hence to turn the country to a cashless economy the drive should be towards credit cards, e-wallets and debit cards (Oyetade & Ofoelue, 2013; Ajayi, 2014; Adu, 2016 and Akara & Asekome, 2018).

The Nigerian Interbank Settlement Scheme (NIBSS) fund transfer is an online platform where banks exchange value thereby enabling the performance of interbank transfer such as NEFT (National Electronic Funds Transfer) and NIBSS instant transferring funds between banks for single or multiple beneficiaries for individual amounts not exceeding N10million. NEFT transfers (National Electronic Funds Transfer), once affected works with the next available clearing session of CBN and is received in the beneficiary's account the same day or next working day, but NIBSS instant payments are immediate. **Real Time Gross Settlements (RTGS)** is used to transfer sums above N10million in favour of a single beneficiary. It is used for big ticket transactions which must have been effected before noon for most banks if the funds are to reach the recipient bank the same day. 6. Mobile Money: This is a product that enables users to conduct fund transfer, make payment

or receive balance enquiries on their mobile phones (Oyetade & Ofoelue, 2013; Ajayi, 2014; Adu, 2016 and Akara & Asekome, 2018).

Web (E-transfers) refer to electronic transfers which can be affected via the internet on (Personal Computers) PCs, laptops and other devices. Bank customers who have subscribed to internet banking can do basic banking transactions via the web. **Personal Computer (PC) banking** is one of the technologies of e-banking that has a universe of possible applications. Online banking for example provides the opportunity of paying bills and performing transactions of any kind through personal electronic devices. The availability of online information has provided banking and customer with a powerful vehicle for research. **Bankers automated clearing services** is the automation focus of the instrument to reduce the number of clearing days and improve on security arrangement in the course of settlement and collection of Cheque. This involves the use of magnetic ink character reader (MCR) for Cheque processing which makes it capable to encode, read and sort out changes even as request for Cheque books can be made via electronic devices. A cheque is a financial instrument issued by banks to customer (person(s), association(s), organization(s) or corporate bodies) for the purpose of making financial transactions (Ajayi, 2014; Acha, Kanu & Agu, 2017 and Akara & Asekome, 2018).

looking at the **benefits of the Cash-less Policy,** this study agrees with the submissions of Laoye (2011); Akhalumeh and Ohiokha (2012); Okey (2012) and Osazevbaru and Yomere (2015) that if the cashless policy is successfully implemented and allowed to stay, the following benefits will be attained:

i. A shift towards cash-less policy will reduce the high operational cost incurred in a cash based economy. Such costs emanate from cash management and movement, currency sorting and printing.
ii. Cash-less policy will help minimize the risks associated with the use of physical cash that do arise from burglaries and thefts as well as financial losses in fire outbreaks.
iii. Cash-less economy will make every segment of the banking population to pay for its usage of cash. The situation in the cash based system where the majority small cash users pay for the minority high cash users will stop. There will be no more subsidies on cash transaction costs. To recapitulate, a survey conducted by the CBN in 2009 revealed that 90% of bank customers' daily withdrawals are amounts below N150, 000, whereas, only 10% of the bank customers who withdraw over N150, 000 are responsible for the rise in cost of cash management incurred by all the customers. Implicitly, the entire banking population supports financially the costs that the minority (10%) incurs. A cashless economy will reduce this subsidy and makes the minority of the bank population account for the cost of cash movement they incur rather than the entire banking population.
iv. Cash-less economy will arrest a situation where a lot of cash are outside the formal banking system. By encouraging formal financial arrangement, it will facilitate the effectiveness of monetary policy in checking inflation and pushing economic growth.
v. Furthermore, cash-less economy is capable of reducing corrupt practices like money laundering which is common-place in cash based economy. To the extent that cash is not easily pulled out of the system, it will discourage launders.
vi. The cash-less economy will bring about increased convenience, more service option, reduced risk of cash related crimes, cheaper access to banking services, and credit to customers.
vii. Corporate organizations will benefit by way of faster access to capital, reduce revenue leakages and reduce cash handling cost.

viii. On the part of the government, it will bring about increased tax collection, greater financial inclusion, reduced revenue leakages and increase economic development.

ix. Other stakeholders: The cash-less system brings along with it different banking instruments such as POS systems, mobile payments, direct debits, internet banking, electronic fund transfer etc. Implicitly, companies that are connected with the production of these products will benefit. Such companies include: Nigeria Inter-Bank Settlement System Plc (a shared infrastructure company of the bankers committee with a mandate to continuously enhance the Nigeria payments system owned by all licensed deposit money banks in Nigeria and the CBN), POS manufacturers, telecom providers, and switch operators.

Challenges of the Cash-less Economy Notwithstanding the fact that the cash-less policy comes with enormous benefits, there are also some challenges that confront the policy as identified by Okechukwu (2011); Osazevbaru and Yomere (2015) to include but not limited to:

i. The policy is challenged by financial infrastructure deficit. The cash-less payment channels that are currently available are not adequate to cope with the demand of the policy if it is to be implemented religiously. This means that the policy will require further investment of funds by operators and regulators.

ii. Given that the system is driven largely by ICT, the policy is exposed to dangers of fraudulent practices as any security lapses can be exploited by the astute fraudster to perpetuate fraud. Internet related crimes like hacking is likely to threaten the cash-less policy in Nigeria.

iii. Electricity is a critical infrastructure for an efficient e-payment system. Sadly, Nigeria cannot boast of steady power supply across its urban and rural areas. This will without doubt affect the success of cash-less policy if not addressed.

iv. The high charges and fees on some of the electronic channels are capable of generating resistance by the banking public. For example, the recent re-introduction of charges for ATM withdrawals didn't go down well with the users.

v. To operate successfully in cash-less economy, some level of literacy is required in view of the technology involved. Therefore, Nigeria with high rate of illiteracy will certainly have some challenges. Illiterate population would prefer to keep their money in cash.

2.2 Theoretical Literature

2.2.1 Technology Acceptance Theory

The technology acceptance theory postulates the adoption of Technology Acceptance Model (TAM) in businesses to increase economic growth (Ajayi, 2014). The technology acceptance theory is one of the theories that have been developed to provide a better understanding of the usage and adoption of information technology. It is presently a prominent theory used in modeling technology acceptance and adoption in information systems research.

Ajayi (2014) reported that Fred Davis in 1985 proposed the TAM in his doctoral thesis at the MIT Sloan School of Management. TAM is an information systems theory that models how users come to accept and use a technology that will encourage economic growth. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it. The factors are Perceived Usefulness (PU) and Perceived Ease-of-Use (PEOU). According to TAM, one's actual use of a technology system is influenced directly or indirectly by the user's behavioral intentions, attitude, perceived usefulness of the system, and perceived ease of the system.

2.2.2 Diffusion of Innovations (DOI) or Innovation Diffusion Theory (IDT)

The Diffusion of Innovations (DOI) theory is also known as Innovation Diffusion Theory. Diffusion of innovations theory seeks to explain how, why and at what rate new ideas and technology spread through cultures (Ajayi, 2014). Innovation diffusion theory was developed by Gabriel and Rogers (a professor of rural sociology), popularized the theory in their 1962 book Diffusion of Innovations (DOI). He said diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system. Rogers explained the process of Innovation diffusion as one which is dictated by uncertainty reduction behavior amongst potential adopters during the introduction of technological innovations. Olatokun and Igbinedion (2009) used DOI theory to investigate the adoption of ATM in Nigeria. They findings showed that constraints such as relative advantage, complexity, observability, compatibility and trialability were positively related to attitude to the use of ATM cards in Nigeria.

Innovation Diffusion Theory (IDT) consists of six major components: innovation characteristics, individual user characteristics, adopter distribution over time, diffusion networks, innovativeness and adopter categories, and the individual adoption process. Arguably the most popular of the six components of IDT centers on the characteristics of the innovation itself. After analyzing a variety of previous innovation diffusion studies, Rogers singled out the following five characteristics of innovations that consistently influence the adoption of new technologies: innovation characteristics, individual user characteristics, adopter distribution over time, diffusion networks, and innovativeness and adopter categories (Ajayi, 2014).

2.3 Empirical Literature

Empirical literatures on cashless policies are rather scarce, but recently the topic has gained more attention both by central banks and academic researchers (Elechi & Rufus, 2016). In this section, this study reviews some existing literatures as follows; For instance Mieseigha and Ogbodo (2013) employed simple percentages, Chi-square and Analysis of variance (ANOVA) to analyzed the benefits of cashless economy on Nigeria's economic development and the Chi-square test on the first hypothesis reveals a positive and significant relationship between cashless economy and transparency, accountability and reduction cash-related fraud at 0.05 level of significance while the ANOVA test on the second hypothesis revealed that cashless economy has a positive impact on economy development 0.05 level of significance. They concluded by recommending adherence to minimum security standards and deployment of more ATMs for smooth implementation of the cashless policy in Nigeria.

Olorunsegun (2010) used cluster sampling technique to study the impact of electronic banking in Nigerian banking system. He found out that a bank has an effective electronic banking system which has improved its customer's relationship and satisfaction. James (2012) used Statistical Package for Social Sciences (SPSS) to investigate the acceptance of e-banking in Nigeria. The result showed that acceptance of e-banking in Nigeria was significantly influenced by age, educational background, income, perceived benefits, perceived ease of use, perceived risk and perceived enjoyment.

James (2013) used Rogers Diffusion of Innovation theory to investigate the determinants of the adoption of mobile banking in Nigeria. The study empirically showed that age, educational qualification, relative advantage, complexity, compatibility, observability and trialability were important determinants of the adoption of mobile banking. This therefore makes it imperative for relevant stakeholders to make efforts to positively influence these independent variables so as to make mobile banking more popular.

Morufu and Taibat (2012) used qualitative survey to ascertain banker's perceptions of electronic banking in Nigeria. The results suggest that bankers in Nigeria perceive electronic banking as a tool for minimizing inconvenience, reducing transaction costs, altering customers queuing pattern and saving customers banking time. Olajide (2012) used theories to investigate cashless banking in Nigeria and its implications on the economy. He found out that cashless banking will boost the economy on the long run. Egwali (2009) used consumer acceptance theory to investigate customers' perception of security indicators (SI) in online banking sites in Benin, Nigeria. He found out that SI were not very effective at alerting and shielding users from revealing sensitive information to fool e-banking sites in Nigeria

Ajayi (2014) examination on issues, prospects and challenges and the effect of cashless monetary policy on Nigerian banking industry was analyzed using frequency table, percentages and Chi square for non-parametric test for the formulated hypothesis. The results of the study showed that there are significant reasons and benefits inherent in the implementation of cashless policy. It also showed that the policy has positively affected the development of banks; as it facilitates ease of operations and reduces queue and congestion in the banking hall, among others while inadequate technological infrastructures, high rate of cyber crime and high rate of illiteracy affect the policy negatively. He therefore recommended that government should put in place a law preventing cyber crime and intensify public enlightenment campaign about the cashless system while bank officials should be properly trained on the operations of the policy in order to be efficient with the services rendered to customers.

Omotunde, Sunday and John-Dewole (2013) investigation studied the impact of cashless policy in Nigeria using a survey research to obtain data from questionnaire as collection instrument. The findings from the respondents showed that cashless policy will increase employment; reduce cash related robbery thereby reducing risk of carrying cash and also reduce cash related corruption and attract more foreign investors to the country. The study therefore, shows that the introduction of cashless economy in Nigeria can be seen as a step in the right direction since its impact is felt in modernization of Nigeria payment system, reduction in the cost of banking services, reduction in high security and safety risks and also curb banking related corruptions.

Osazevbaru and Yomere (2015) empirically examined the benefits and challenges of Nigeria's cash-less policy using secondary data and content analysis. The study found banks' income higher in cash-less setting than in cash based arrangement and summarized that the cash-less policy offers immense benefits to the banking sector. They recommended that appropriate infrastructures and legal support be provided to facilitate the religious implementation of the policy. An exploratory study on the effects of cashless economy policy on financial inclusion in Nigeria remain vital, especially in developing countries where little research studies have been conducted since the introduction of the Cashless economy policy. Musah (2015) study on financial inclusion in explaining cashless economy in Nigeria reveals lack of comprehensive empirical research regarding the relationship between the Cashless economy policy and financial inclusion in Nigeria. The results from his research showed that Awareness, Consumer / User Value Proposition, and Infrastructure have strong significant relationship with Financial Inclusion while Business Model of Financial Service Providers did not show any significant relationship with Financial Inclusion.

The Central Bank of Nigeria (CBN) has been active in the inauguration of policies and schemes to foster the implementation of the cashless policy in Nigeria. However the current transition to cashless economy raises a lot of concerns with no substantial evidence yet to justify its implementation. Taiwo, Ayo, Afieroho and Agwu (2016) carried out a research to appraise the implementation of the cashless policy since its introduction into the Nigerian financial system in 2012 using primary data collected with the aid of the questionnaire, which was randomly

administered to 120 respondents ranging from First Bank, Zenith Bank and United Bank for Africa and analyzed with the aid of the Statistical Package for Social Sciences (SPSS) using descriptive statistics and one-sample t-test. They concluded that despite the need to operate cashless transactions dominating the modern Nigerian economy, the cashless policy will have the desired impact only if a lot is done to ensure the implementation of an effective cashless system.

Yaqub, Bello, Adenuga and Ogundeji (2013) showed in their work that many developing countries with Nigeria inclusive that cash is the main mode of payment but the cost of cash to Nigeria financial system is high and increasing. It is in this regard that the Central Bank of Nigeria cashless policy with the objective of promoting the use of electronic payment channels instead of cash. Their study pointed out the prospects and challenges of such policy with a clearer presentation that the move towards a cashless Nigeria brings numerous benefits but there is still need to create more awareness to entice the numerous unbanked Nigerians into the banking system.

The implications of cashless banking with the view to exposing the possible challenges and prospects posed to the Nigerian economy whilst employing aggregated approach. Analytically, Odior and Banuso (2013) examined the challenges, benefits and prospects of cashless policy and their study found that some of the challenges that have the capacity to hamper the success of cashless policy are power supply and poor infrastructures to mention but a few. On the other hand, their study revealed that cashless policy will promote economic growth and provide banks with more liquidity for lending to needy sectors and contribute to eliminating corruption if the right infrastructure and trust is instituted. Muyiwa, Tunmibi and John-Dewole (2013) found that the introduction of cashless policy contributes in reducing robbery incidences; attraction of more foreign direct investment and creation of employment.

Cashless policy in banking business in Nigeria and cashless system has become necessary to promote the use of electronic means of transaction towards making Nigeria a cashless economy where clumsy and expensive-to-handle coins and notes are replaced by efficient electronic payments system with a positive policy to direct banks to cease cash-in-transit lodgment services hitherto rendered to merchant customers. The banks are to engage the services of the Central Bank of Nigeria (CBN) licensed cash-in-transit (CIT) companies to aid cash movements to and from their banks at mutually agreed terms as well as the CBN stipulated sanction against banks that flout the ban on cash-in-transit lodgment services (Ezuwore-Obodoekwe, Eyisi, Emengini & Alio, 2014).

Akara and Asekome (2018) examined the effects of the adoption of cashless policy on the profitability performance of commercial banks in Nigeria using ATM and POS as proxy for the adoption of cashless policy and ROA and ROE as proxy for profitability and using the Ordinary least Square multiple regression analysis, the study revealed that there is a high positive correlation between the adoption of cashless policy and commercial bank profitability in Nigeria. Their multiple regression results also revealed that the use of cashless policy instruments particularly ATMs and POS increases the ROA and ROE of the banks. They therefore recommended that the cashless policy should be strengthened and all bottle necks like poor power supply and all loopholes that could lead to fraudulent exposure be tactically and proactively tackled.

Oyewole, Gambo, Abba and Onuh (2013) worked on electronic payment systems and its impact on economic growth in Nigeria and their study found that e-payment system has a positive impact on economic growth in terms of real GDP and that the introduction of ATMs in doing financial transaction impacts directly on economic growth, while other forms of e-payment channels showed a negative impact on economic development. Newstead (2012) investigated the influence of cashless payment on economic growth and found a positive relationship between cashless payment and economic growth. Specifically, it was found that cashless transactions were growing twice as fast in developing economies as compared across the world. This assertion by Newstead was not

supported with appropriate statistical figures, showing the pace of cashless growth in the developing economies as compared to figures of cashless growth in the developed economies.

Mallat and Tuunainen (2008) examined the adoption of mobile payment systems by merchants and found that the main purpose of mobile payment adoption is to increase sales and reduce the costs of payment processing and showed a positive influence on business sales growth. But, it carries challenges such as: complexity of the systems, unfavorable revenue sharing models, lack of critical mass, and lack of standardization.

Echekoba and Ezu (2012) in a research carried out in Nigeria observed that 68.2% of the respondent complained about long queues in the bank, 28.9% complained of bad attitude of teller officers (cashiers) while 2.89% complained of long distance of bank locations to their home or work places. Likewise, in her 24th NCS national conference in December 2011, CBN data shows that 51% of withdrawal done in Nigeria was through Automated Teller Machine (ATM), while 33.6% was through Over the Counter (OTC) cash withdrawals and 13.6% through cheques. Payment was also done through point of sales machine (POS) which accounted for 0.5% and web 1.3%.Therefore, if the introduction of ATM in Nigeria cash withdrawals system reduced OTC withdrawal; then it will implies that introduction of cashless policy supported by application of information technology can achieve more to reduce over dependent on cash payment in the Nigerian economic system.

Adewoye (2013) empirically studied the impact of mobile banking on service delivery in the Nigerian Commercial Banks through the use of questionnaire. He found out that the introduction of e-banking services has improved banking efficiency in rendering services to customer. His findings shows that mobile banking improve banks service delivery in a form of transactional convenience, savings of time, quick transaction alert and save of service cost which has recuperate customer's relationship and satisfaction. To this end, he recommended that banks management should create awareness to inform the public about the benefits derived on the e-banking service products, collaboration among banks should perfectly maintained, skilled manpower and computer wizard should be employed by every banks, in other to prevent fraudulent personal and hackers from manipulating the banks data and stealing money from the banks accounts. Finally, provision and maintenance of public network system such as telephone (Nitel) and the availability of these basic infrastructures is fundamental to the efficient functioning of the mobile banking services.

Elechi and Rufus (2016) investigation on the cashless policy in Nigeria and its socio-economic impact on small scale businesses proffered solution to the impending challenges that small scale businesses face in a cashless society and concluded that if necessary measure are not put in place and the necessary stakeholders to the policy carried along with consideration on how the policy may affect them, the cashless policy will adversely affect small scale business and may engineer their failure. Adu (2016) studied the effects of cashless policy on the Nigerian economy and concluded that cashless policy of CBN as both positive and negative effects on the economy and stakeholders. He suggested that the Nigeria government should curb some of the negative effects and improve on the implementation of the policy.

Acha, Kanu and Agu (2017) examined the mechanics, benefits and problems of cashless policy in Nigeria and adopted a descriptive statistics for analyses. Their results showed increasing adoption of cashless options by Nigerians with a reveal that despite several identified benefits, many factors still militate against this policy's success such as power infrastructure. They therefore recommended that attention should be paid to stabilizing power supply in the country.

3.0 Research Methods

3.1 Theoretical Framework

Technology Acceptance Model (TAM) and Diffusion of Innovation (DOI) Theory

The theoretical framework of this study is Technology Acceptance Model (TAM) and Diffusion of Innovation (DOI) Theory. TAM and DOI are information systems theories that model how users come to accept and use a technology that encourage economic growth (Ajayi, 2014). The Mechanics of the Cashless Policy in Nigeria on cashless policy is an alternative to cash transactions through electronic means using information and communications technology (ICT) (Acha, Kanu & Agu, 2017).

Ndifon and Okpa (2014) maintain that the future of all business, particularly those in the service industry lies in information technology. This technology as far as cashless policy is concerned is not only computer. Information technology for banks takes different forms; computerization of customers' accounts and account information storage and retrieval; deposit and withdrawal through Automated Teller Machines (ATMs); and networking to facilitate access to accounts from any branch of the bank, bio-metrics, use of mobile phones to consummate transactions, internet, and websites. It also involves the use of credit cards, debit cards, mobile pay and many other forms of payment, but always only in digital ways, as paper currency does not come into play (Acha, Kanu & Agu, 2017). Babalola (2008) identified seven different electronic payment channels in Nigeria, Automated Teller Machines (ATM), points of sales terminals, mobile voice, web, inter-bank branch and kiosks. Ogbuji, Onuoha and Izogo (2012) noted that ATM allows a bank customer to conduct his/her banking transactions from almost every other ATM machine in the world.

In this type of economy, the amount of cash in one's wallet is not relevant. One can pay for purchases by any one of the forms of transactions in cashless economy which includes the use of credit cards or bank transfer. Cashless economy is enhanced by e-finance, e-money, e-brokering and e-exchanges (Moses-Ashike, 2011). Central Bank of Nigeria introduced Point of sale and gave the guidelines in 2011 with maximum service commission of 1.25% or a maximum of NGN2000 and limiting the role of connecting and maintaining POS devices only to licensed Payment Terminal Service Providers (PTSPs). These POS terminals serve like the Automatic Teller Machines (ATM) across commercial points in the country. At the completion of a transaction and the value ascertained, the amount is entered into a POS terminal into which the electronic card has been slotted. The cash equivalent of the amount will be automatically transferred from the payer's account into the account of the payee's account. In Nigeria today, private enterprise, religious bodies, educational institutions and other service providers such as hotels, transport firms etc. have embraced the POS option in their transactions.

Users are issued with a card (the electronic purse). The electronic purse is topped up using revaluation terminals. There are different types of terminals: coin & note, credit card and payroll deduction terminals. The cards are simply inserted into the revaluation terminal and certain programmed instructions are followed, and money is added onto the electronic purse. This can then be used to pay for goods / services by inserting them into the POS terminals. When the card is inserted into the POS, and the transaction amount entered, the reader reads the amount and is quickly deducted from the e-purse (the card) (Akhalumeh & Ohiokha, 2012). It can be used to pay for school fees, shopping bills, utility bills and others bills.

The aspect of cashless policy streamlining the permitted limits of cash transactions for individuals and institutions beyond which charges apply cover all accounts types especially savings and current with exception of government revenue generation; primary mortgage institutions, microfinance banks and embassies' accounts. The policy clearly states that the cash withdrawal and deposit limit for individuals is N500, 000 and N3,000,000 for corporations, although the policy does not prohibit withdrawals above the stipulated amounts, but such transactions will be subjected to cash handling charges. The interesting thing about the way banks are implementing this policy is that at the end of each transaction, they send alert to the customer indicating the amount withdrawn and the balance. Banks have equally made available different types of cards to enhance the electronic transactions which consist of Verve, Master, Platinum cards; some customized means of making payments include: pay pal and payoneer and so many others. It is good to mention that these e- transactions are not without charge.

This policy facilitates fund transfer, thereby reducing time wasted in bank(s). The transactional ease and other advantages of cashless economy may explain its growing popularity. For instance, Wizzit, a fast growing mobile banking company in South Africa has over three hundred thousand customers across South Africa. Likewise, MPESA was introduced in Kenya as a small value electronic system that is accessible from ordinary mobile phones. It has experienced exceptional growth since its introduction by mobile phone operator (Safaricom) in Kenya in March, 2007 and has already been adopted by nine million customers, which is about 40% of Kenya's adult population. The success of M-PESA has been attributed to its flexibility enabling users to carryout financial transactions across long distances with their cell phones, thereby reducing their travelling costs, eliminating the risks of carrying cash and also avoiding most banking charges (Akintaro, 2012). In Sweden, it is almost impossible to find a shop that does not accept electronic payment cards, and most locals almost never carry any cash on them.

3.2 Model Specifications

The formulation of the static form of this model is largely based on the work of Acha, Kanu and Agu (2017). The current model explore electronic Payments variables to empirically capture the impact of cashless policy on Nigerian economy through the Value of Cheques Cleared, Automated Teller Machine Payment Value, Point of Sale Value, Web / Internet Transfers Payment Value, Mobile Payment Value in Nigeria, National Electronic Funds Transfer and Gross Domestic Product is presented as follows:

$$GDP_t = f(CHEV_t, ATMV_t, POSV_t, WEBP_t, MOBP_t, NEFT_t) \quad (1)$$

Equation (1) is expressed more specifically for the purpose of statistical test as:

$$GDP_t = \beta_0 + \beta_1 CHEV_t + \beta_2 ATMV_t + \beta_3 POSV_t + \beta_4 WEBP_t + \beta_5 MOBP_t + \beta_6 NEFT_t + U_t \quad (2)$$

(Apriori expectation $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ and $\beta_6 > 0$)

Where, GDP = Gross Domestic Product, CHEV = Value of Cheques Cleared, ATMV = Automated Teller Machine Payment Value, POSV = Point of Sale Value, WEBV = Web / Internet Transfers Payment Value, MOBP = Mobile Payment Value in Nigeria, NEFTt = National Electronic Funds Transfer, U_t = Disturbance term or error term, β_0 = Intercept or constant and $\beta_1 - \beta_6$ = Coefficient of the independent variables.

The error correction specification of equation (2) is presented as equations (3):

$$\Delta GDP_t = \beta_0 + \beta_1 \Delta CHEV_t + \beta_2 \Delta ATMV_t + \beta_3 \Delta POSV_t + \beta_4 \Delta WEBP_t + \beta_5 \Delta MOBP_t + \beta_6 \Delta NEFT_t + \beta_7 ECM_{t-1} + U_t \quad (3)$$

The ECM in equation (3) above is the error correction mechanism which indicates the speed of adjustment to equilibrium whenever disequilibrium occurs in the Nigerian cashless economy.

3.3 Method of Data Analysis

The method used in analyzing the cashless policy in Nigeria and its issues, benefits and challenges on Quarterly time series data from 2011(Q1–Q4) to 2017 (Q1–Q4) on Cheques Cleared Value (CHEV), Automated Teller Machine Payment Value (ATMV), Point of Sale Value (POSV), Web / Internet Transfers Payment Value (WEBP), Mobile Payment Value in Nigeria (MOBP) and National Electronic Funds Transfer Value (NEFT) as proxy for the adoption of cashless policy and Gross Domestic Product (GDP) as proxy for its impact on Nigeria economy collected from Central Bank of Nigeria Statistical Bulletin (2017) was the Ordinary Least Squares multiple regression technique. Phillips-Perron statistic was employed to determine the stationarity test. Statistical theory requires that variables be stationary before application of standard econometric techniques. This was done in order to avoid spurious (misleading) results.

The Johansen cointegration test was also employed to examine the existence or otherwise of longrun relationship among the variables in the model. The error correction model was thereafter estimated to determine the speed of adjustment to longrun equilibrium in the Nigerian cashless economy. Diagnostic and stability tests were also employed to confirm the robustness of the model.

4.0 Data Presentation, Analysis and Discussion of Results

The economic and electronic payments systems data used for the estimation of the cashless economy in Nigeria are presented in Appendix A while the stationarity status of the selected cashless policy indicators and gross domestic product in Nigeria was examined using the Phillips-Perron test. The results which are displayed in Table 1 below show that all the variables are integrated at first difference except NEFT which is integrated at level 1(0). In other words, they are found to be stationary at 1(1). This implies that the hypothesis of non-stationarity is rejected for all the variables at their first difference. This justified the need to test for co-integration.

Table 1: Unit Root Test Results

Variable	Level	First Difference	Order of Integration
GDP	-2.353200 (0.1638)	-7.861496 (0.0000)	1(1)
CHEV	-2.808748 (0.0703)	-5.684101 (0.0001)	1(1)
ATMV	2.456574 (0.9999)	-4.325939 (0.0023)	1(1)
POSV	9.739488 (1.0000)	-3.916807 (0.0044)	1(1)
WEBP	0.663236 (0.9889)	-4.252005 (0.0028)	1(1)
MOBP	2.897869 (1.0000)	-6.864046 (0.0000)	1(1)
NEFT	-4.518065 (0.0081)	-12.79878 (0.0000)	1(0)
5% C.V	5% = -2.976263	5% = -2.981038	

Source: Author Regression Output from EViews 9.

Note: i. Pro-value are reported in parenthesis, ii. The Philips-Perron statistics are compared to 5 per cent critical value (C.V).

Cointegration Test using the Johansen Methodology

The results of the Unrestricted Cointegration Rank test for the model is presented in Table 2. Starting with the null hypothesis that there are no cointegrating vector (r = 0) in the model, the results show that there exists at least five cointegrating relationship in the model as both the Trace and Max-Eigen statistics reject the null of r = 0 as against the alternative of r = 1 at 5 per cent level of significance which shows that there is a unique longrun relationship between Cheques Cleared Value (CHEV), Automated Teller Machine Payment Value (ATMV), Point of Sale Value (POSV), Web / Internet Transfers Payment Value (WEBP), Mobile Payment Value in Nigeria (MOBP), the National Electronic Funds Transfer Value (NEFT) and Gross Domestic Product (GDP) in Nigeria (see the table below).

Table 2: Unrestricted Cointegration Rank Test result for model.

Hypothesised No. of CE(s)	**Trace Stat.**	**Critical Value (0.05)**	**Prob****	**Hypothesised No. of CE(s)**	**Max-Eigen Stat.**	**Critical Value (0.05)**	**Prob****
None *	422.9617	125.6154	0.0000	None *	212.1339	46.23142	0.0000
At most 1 *	210.8278	95.75366	0.0000	At most 1 *	92.26541	40.07757	0.0000
At most 2 *	118.5624	69.81889	0.0000	At most 2 *	45.24701	33.87687	0.0015
At most 3 *	73.31535	47.85613	0.0000	At most 3 *	40.69485	27.58434	0.0006
At most 4 *	32.62049	29.79707	0.0230	At most 4 *	25.14345	21.13162	0.0129
At most 5	7.477044	15.49471	0.5229	At most 5	7.274163	14.26460	0.4572
At most 6	0.202881	3.841466	0.6524	At most 6	0.202881	3.841466	0.6524

Source: Author Regression Outputfrom EViews 9.

Note:

i. r represents number of cointegrating vectors. ii. Both Trace and Max Eigenvalue tests indicates 5 cointegrating equations respectively at the 0.05 level. iii. *****denotes rejection of the hypothesis at the 0.05 level and IV. ****** Mackinnon-Haug-Michelis (1999) p-values

Short-run Error Correction Representation

The results of the short-run error correction representation for the model is reported in Table 3.

Table 3: Short-run Error Correction Representation for the Model

Regressor	Coefficient	Std. Error	T-Ratio	Prob
C	-133.8605	253.4842	-0.528082	0.6052
D(CHEV)	-3.436536	2.341998	-1.467352	0.1629
D(ATMV)	7.552558	3.091926	2.442671	0.0274
D(POSV)	-17.49106	13.33683	-1.311485	0.2094
D(WEBP)	149.4583	53.34713	2.801619	0.0134
D(MOBP)	-18.44865	9.282847	-1.987392	0.0655
D(NEFT)	0.802652	0.283929	2.826945	0.0127
ECM(-1)	-1.378109	0.292580	-4.710193	0.0003

Source: Author Regression Output from EViews 9.

Dependent Variable: D(GDP)

Method: Least Squares

Date: 02/27/19 Time: 01:41
Sample (adjusted): 2012Q2 2017Q4
Included observations: 23 after adjustments

The results of the short run error correction estimation showed that Cheques Cleared Value (CHEV), Point of Sale Value (POSV) and Mobile Payment Value (MOBP) in Nigeria are inversely related to Gross Domestic Product (GDP) and a unit change in the value of cleared cheques, point of sales and mobile payments decreases gross domestic product by 3.436536, 17.49106 and 18.44865 respectively. This is consistent with the work of Echekoba and Ezu, (2012); Okechukwu (2011); Osazevbaru and Yomere (2015).

The results also revealed that Automated Teller Machine Payment Value (ATMV), Web / Internet Transfers Payment Value (WEBP) and National Electronic Funds Transfer Value (NEFT) in Nigeria are positively and significantly related to GDP. This indicates that a per centage increase in the Automated Teller Machine payment values, Web / Internet Transfers Payments and National Electronic Funds Transfer Values in Nigeria leads to 7.552558, 149.4583 and 0.802652 increment in gross domestic product in Nigeria respectively. This result is consistent with previous studies of (Masayuki & Ivohasina, 2005; Adewoye 2013; Ajayi, 2014; Acha, Kanu & Agu, 2017 and Akara & Asekome, 2018).

Finally, the error correction mechanism (ECM) which is -1.378109 is statistically significant and has the appropriate sign. It suggests, however, that there is a very high adjustment process in the adoption and practice of the cashless policy in Nigeria. It is also a confirmation that indeed gross domestic product, value of cheques cleared, automated teller machine payment value, point of sale value, web / internet transfer payment value, mobile payment value in Nigeria and national electronic funds transfer values are cointegrated.

Diagnostic Test

To confirm the robustness of the model, a diagnostic test was performed as shown in Table 4.

Table 4: Key Regression and Diagnostic Statistics for Model

R-squared	0.735404	Mean dependent var	203.5896
Adjusted R-squared	0.611927	S.D. dependent var	1292.315
S.E. of regression	805.0543	Akaike info criterion	16.48790
Sum squared resid	9721687.	Schwarz criterion	16.88286
Log likelihood	-181.6109	Hannan-Quinn criter.	16.58723
F-statistic	5.955757	Durbin-Watson stat	2.118570
Prob(F-statistic)	0.001874		

Source: Author Regression Output from EViews 9.

The coefficient of determination R^2 indicates that 73 per cent of the total variation of gross domestic product of the Nigerian economy is jointly explained by value of cheques cleared, automated teller machine payment value, point of sale value, web / internet transfer payment value, mobile payment value and national electronic funds transfer values. The Akaike information criterion, Schwarz criterion and Hannan-Quinn criterion showed that the model is correctly specified. F statistic measuring the joint significant of all regressors in the model is statistically significant at the 5 per cent level. Durbin-Watson statistic is 2.118570. This implies absence of autocorrelation among the explanatory variables.

Stability Test

Stability test was conducted using cumulative sum (CUSUM) and cumulative sum of squares (CUSUM Q) of recursive residuals as shown in figure 1 and 2 below. The existence of parameter instability is established if the cumulative sum and the cumulative sum of square of the residuals goes outside the area between the critical (straight bounded upper and lower) lines. From figure 1 and 2, it was observed that the model at 5 per cent level of significance, CUSUM and CUSUM Q were stable over time because the observed bound lied between the upper and lower limits. In conclusion, at 5 per cent critical value CUSUM and CUSUM Q are positive, which means that CUSUM and CUSUM Q are good enough to explain the stability of the model overtime.

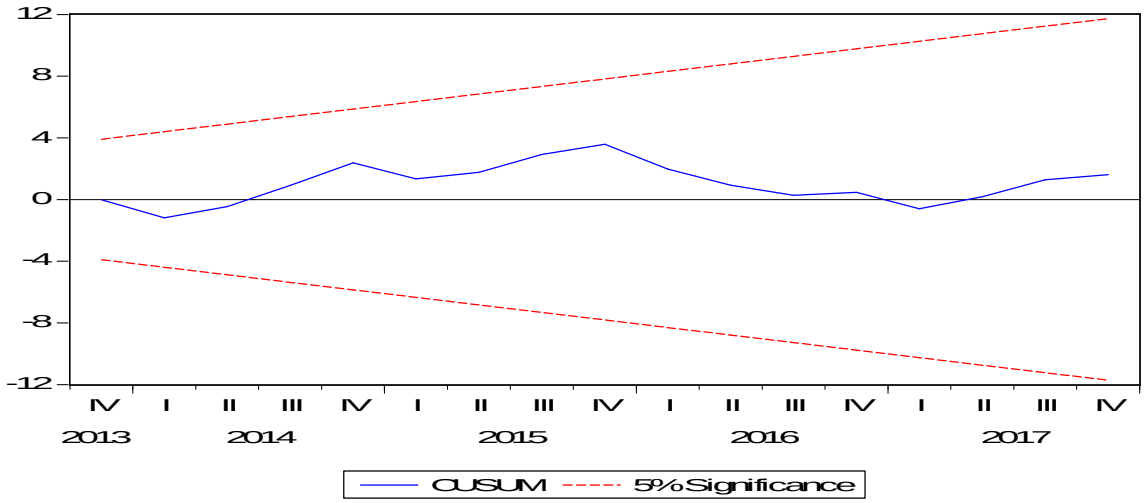

Figure 1: Plot of Cumulative Sum of Recursive Residuals

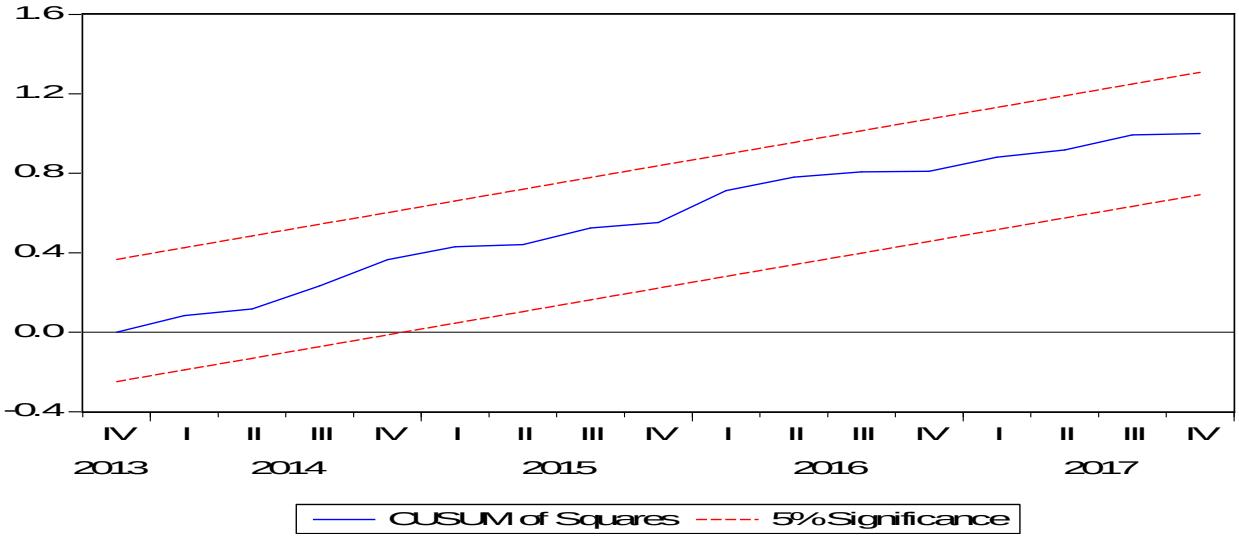

Fig.2 Plot of Cumulative Sum of Squares of Recursive Residuals

5.0 Concluding Remarks

In reviewing the cashless policy in Nigeria and its issues, benefits and challenges between 2011(Q1–Q4) to 2017 (Q1–Q4), one can deduce from the findings that the significant impact of ATMV, WEBP and NEFT on Gross Domestic Product in Nigeria is as a result of heavy acceptance of cash policy transactions in Nigerian economy.

It was revealed that the positive relationship between ATM, WEB and NEFT is as a result of usage of e-transactions through technology acceptance and diffusion of innovation of cashless policy in Nigeria. The results also revealed that CHEV, POSV and MOBP had inverse and insignificant impact on Gross Domestic Product in Nigeria. This insignificant impact can be attributed to poor power / internet infrastructures, inadequate supply of point of sales devices and unfriendly DMBs mobile applications of some banks in the country.

The empirical investigation on the impact of cashless policy in Nigeria spanning 24 observations on quarterly data, confirms the stationarity of the selected cashless policy variables at level 1(0) and first difference 1(1) respectively. The Johansen cointegration test indicates a long run relationship between CHEV, ATMV, POSV, WEBP, MOBP, NEFT and Gross Domestic Product in Nigeria while the error correction model shows a very high adjustment process in the Nigerian cashless economy since the speed of adjustment to longrun equilibrium is above 50 per cent. It is also a confirmation that indeed the values of cheques cleared, automated teller machine payment value, point of sale value, web / internet transfer payment value, mobile payment value and national electronic funds transfer values and gross domestic product of the Nigerian economy are cointegrated.

On a long term prospect, cashless policy of the central bank of Nigeria stand a chance of providing better and secure economy for efficient cashless transactions that will facilitates the development of socio-economic facilities that lead to economic growth and development.

5.1 Recommendations

For us to achieve the objective of cashless economy despite its challenges, the following recommendations are made:

a. Nigerians should generally accept and appreciate the cashless policy because it will cause economic stability and enhance economic development. Cashless economy is beneficial to all. It will not only result in improved standard of living but increased Gross Domestic Product of the Nation.
b. The central bank of Nigeria and the deposit money banks should provide more classless facilities / indicators for the country to embrace and find appropriate methods to migrate present permanently from the cash-based operations to electronic payment systems that will enhance the adoption and ultimate utilization cashless policy in Nigeria.
c. Collective effort is needed by all Nigerians to achieve this objective, therefore all stakeholders are encouraged to ensure the success of the cashless policy as CBN maintains an active engagement with all, to ensuring seamless transition to our desired cashless society.
d. Deposit money banks should be mindful of customer protection, customer complaint management and dispute resolution strategies on electronic payment transactions which might arise in this early stage of adoption.
e. There is need for massive sensitization, awareness campaign and enlightenment of people on the need for and importance of cashless economy. Again, while the authorities strive to consolidate the gains of the cashless system, there is an urgent need to tackle the challenges confronting the full actualization of this policy.
f. Unavailability of POS at Purchase centers, transaction difficulties, poor internet access, poor knowledge of how to use the cashless options, regular malfunctioning of machines causing cards to get stuck, nonfunctional machines, long queues, ATM robbery, limited ATM machine, undue charges on usage, and limited access to fund should be addressed by Government, Central Bank,

Deposit Money Banks and Security Agencies, these will go a long way to facilitating the realization of a cashless economy.

References

Acha, .; Kanu, C. and Agu, G.A. (2017). Cashless Policy in Nigeria: The Mechanics, Benefits and Problems. Innovative Journal of Economics and Financial Studies, 1(1): 28-38.

Adewoye, J.O. (2013). Impact of mobile banking on service delivery in the Nigerian commercial banks. Int. Rev. Manage. Bus. Res., 2(2): 333-344.

Adeyeye, P.O. and Ajinaja, T. (2014). The Impact of Cashless Policy on Economic Development of Nigeria. IJSSCS (l)1: 96-105.

Adu, C.A. (2016). Cashless Policy and its Effects on the Nigerian Economy. European Journal of Business, Economics and Accountancy, 4(2): 81-88.

Ajayi, L.B. (2014). Effect of Cashless Monetary Policy on Nigerian Banking Industry: Issues, Prospects and Challenges. International Business and Finance Management Research, 2(1): 29-41.

Ajayi, S.I. and Ojo, O.O. (2006). Money and Banking: Analysis and Policy in the Nigerian Context, Second Edition, University of Ibadan, Daily Graphics Nigeria Ltd.

Akara, C.K. and Asekome, M.O. (2018). Cashless Policy and Commercial Banks Profitability in Nigeria. Advances in Social Sciences Research Journal, 5(3): 395-406.

Akhalumeh, P.B. and Ohiokha, F. (2012). Nigeria's Cashless Economy; The Imperatives. International Journal of Management and Business Studies. 2(1): 12–17.

Akintaro, S. (2012). Going Cashless. IT and Telecom digest, Online Magazine of August, 2012

Babalola, R. (2008). E-payment: Towards a Cashless Economy. A Keynote Address of the Finance Minister of State at Card Expo Africa Conference available online at http://www.nigeriavillagesquare.com

Central Bank of Nigeria, CBN (2011). Cashless Lagos implementation: New cash policy stakeholder engagement sessions (October). Retrieved from: http://www.cenbank.org/cashless/Cashless%20Lagos%20Presentatio n_November.pdf

CBN, (2011). Towards a Cashless Nigeria: Tools & Strategies. Nigerian Journal of Economy, 3(2): 344 – 350.

CBN (2017). Central Bank of Nigeria Statistical Bulletin Volume 28, December.

Cobb, A. (2004). Efficient, Safe and Convenient Electronic payments. Retrieved online at http://www.amenifo.com/50050.html on the 10th of December, 2018.

Echekoba, F.N., and Ezu, G.K. (2012): Electronic Retail Payment Systems: User Acceptability and Payment Problems in Nigeria. Arabian Journal of Business and Management Review, 5(1): 60 – 63.

Egwali, A.O. (2009). Customers Perception of Security Indicators in Online Banking Sites in Nigeria. Journal of Internet Banking and Commerce, 14(1):5-8.

Ejiofor, V.E. and Rasaki, J.O. (2012). Realizing the Benefits and Challenges of Cashless Economy in Nigeria: It Perspective. International Journal of Advances in Computer Science and Technology, 1(1): 7–13.

Ejiro, O. (2012). What Nigerians Think of the Cashless Economy Policy. Nigerian Journal of Economy, (4)6: 97–102.

Elechi, A.C and Rufus, A. (2016). Cashless Policy in Nigeria and its Socio-Economic Impacts. Public Policy and Administration Research, (6)10: 16-22.

Ezeamama, M.C.; Ndubuisi, N.J.; Marire, M.I. and Mgbodile, C.C. (2014). The Impact of Central Bank of Nigeria Cashless Policy in Nigeria Economy. Journal of Business and Management, 16(12): 84-95. www.iosrjournals.org

Ezuwore-Obodoekwe, C.N; Eyisi, A.S.; Emengini, S.E. and Alio F.C. (2014). A Critical Analysis of Cashless Banking Policy in Nigeria. Journal of Business and Management, (16)5: 30-42.

Humphrey, D. B. (2004). Replacement of cash by cards in U.S. Consumer Payments. Journal of Economics and Business, 56: 211–225.

Ifeakandu, A. (2011). Analysts List Pitfalls of Cashless Economy. Available online at http://www.blueprinting.com

James, A.O. (2012). The acceptance of e-banking by customers in Nigeria. World Review Business Research, 2(2): 6-8.

James, A.O. (2013). Going cashless: Adoption of mobile banking in Nigeria. Arabian Journal of Business and Management Review (Nigerian Chapter), 1(2): 9-17.

Laoye, J. (2011). Benefits of cashless economy by experts. Retrieved online at http://www.zumalist.com on the 10th of December, 2018.

Mallat, N. andTuunainen, V.K. (2008). Exploring Merchant Adoption of Mobile Payment Systems: An Empirical Study. E-Service Journal, 6(2): 24-57.

Marco, A. and Bandiera, L. (2004). Monetary Policy, Monetary Areas and Financial Development with Electronic Money, IMF Working Study, IMF.

Mieseigha, E.G. and Ogbodo, U.K. (2013). An Empirical Analysis of the Benefits of Cashless Economy on Nigeria's Economic Development. Research Journal of Finance and Accounting, 4(17): 11-16.

Morufu, O. and Taibat, A. (2012). Bankers perceptions of electronic banking in Nigeria: A review of post consolidation experience. Research Journal of Financial Accounting. 3(2): 5-6.

Moses-Ashike, H. (2011). Cashless Economic can Reduce Risk of Carrying Huge Cash. Retrieved online at http://www.businessdayonline.com on the 10th of December, 2018.

Musa, A.B. (2015). Effects of Cashless Economy Policy on financial inclusion in Nigeria: An exploratory study. Procedia - Social and Behavioral Sciences, 172 (1): 49–56.

Muyiwa, O.; Tunmibi, S. and John-Dewole, A.T. (2013). The Impact of Cashless Economy in Nigeria. Greener Journal of Internet, Information and Communication Systems, 1(2): 40-43.

Ndifon, E. and Okpa, I. (2014). Challenges and benefits of the cash-less policy implementation in the Nigerian economy. European Journal of Business and Management, 6(26): 24-32.

Newstead, S. (2012). Cashless Payment Underpins Economic Growth. Retrieved online at http:/www.rbs.comon on the 12th of December, 2018.

Odior, E.S. and Banuso, F.B. (2013). Cashless Banking In Nigeria: Challenges, Benefits and Policy Implications. European Scientific Journal, 8(12): 289-316.

Ogbuji, C.N.; Onuoha, C.B. and Izogo, E.E. (2012). Analysis of the Negative Effects of the Automated Teller Machine (ATM) as a Channel for Delivering Banking Services in Nigeria. International Journal of Business and Management, 7(7): 180-183.

Okechukwu, N. (2011). Current Challenges will not stop cashless economy implementation. Retrieved online at http://www.archive.punchontheweb.com on the 12th of December, 2018.

Okey, O.O. (2012). The Central Bank of Nigeria's cashless policy in Nigeria: Benefits and challenges. Journal of Economics and Sustainable Development, 3(14): 128-133.

Olajide V.C. (2012). Cashless Banking in Nigeria and its Implications, 1- 8. Retrieved online on 23/06/2013. Available online at: http:mpra.ub.uni-muenchen.de/38096/.

Olatokun W.M. and Igbinedion L.J. (2009). The adoption of automatic teller machines in Nigeria: An application of the theory of diffusion of innovation. Issues in Informing Science and Information Technology, 6(2): 373-393.

Olorunsegun, S. (2010). The Impact of Electronic Banking in Nigeria Banking System. MBA Research Project Submitted to the Department of Management Science, Faculty of Engineering and Technology, Ladoke Akintola University of Technology, Ogbomoso, Oyo State, Nigeria, Pp 23-29, Unpublished.

Omotunde, M.; Sunday, T. and John-Dewole A.T. (2013). Impact of cashless policy in Nigeria. Greener Journal of Internet, Information and Communication Systems, (1)2: 40-43.

Osazevbaru, H.O and Yomere, G.O. (2015). Benefits and Challenges of Nigeria's Cash-Less Policy. Kuwait Chapter of Arabian Journal of Business and Management Review, 4(9): 1-10.

Oyetade, L. and Ofoelue, O. (2013). Costs of Cashless Society. Research Journal of Finance and Accounting, 4(7).

Oyewole, O.S.; Gambo, E.J.; Abba, M. and Onuh, M. E. (2013). Electronic payment system and economic growth: A review of transition to cashless economy in Nigeria. International Journal of Scientific Engineering and Technology, 2(9): 913–18.

Roth, B.L. (2010). The Future of Money: The Cashless Economy – Part 1. Retrieved online at https://www.x.com/.../future-money-cashless-economy—part-i on the 12th December, 2018.

Taiwo, J.N.; Ayo, K.O.; Afieroho, E.O. and Agwu, M.E. (2016). Appraisal of Cashless Policy on the Nigerian Financial System. West African Journal of Industrial and Academic Research, 16(1): 99-118

Woodford, M. (2003). Interest and Price: Foundation of a Theory of Monetary Policy, Princeton University Press. Retrieved online at http//www.colyflavourmegzine.com/? on 12th December, 2018.

Yaqub, J.O.; Bello, H.T.; Adenuga, I.A. and Ogundeji, M.O. (2013). The Cashless Policy in Nigeria: Prospects and Challenges. International Journal of Humanities and Social Science, 3(3): 200-212.

Apendix A: Economic and Electronic Payment Systems Statistics (N' Billion)

PERIOD	GDP	CHEV	ATMV	POSV	WEBP	MOBP	NEFT
2011Q1	13,450.72	5,417.8	333.51	6.28	24.13	3.32	n. a.
2011Q2	13,757.73	5,227.0	364.67	6.45	22.01	3.72	n. a.
2011Q3	14,819.62	5,548.6	387.48	8.64	6.36	5.01	n. a.
2011Q4	15,482.97	6,109.3	476.08	9.65	7.11	6.93	n. a.
2012Q1	13,915.51	1,995.2	454.79	1.87	6.38	1.08	3,447.14
2012Q2	14,323.05	1,903.1	483.25	8.74	6.93	4.93	3,398.26
2012Q3	15,645.43	1,832.8	499.71	14.75	7.53	7.26	3,287.94
2012Q4	16,045.90	1,730.5	546.91	22.66	10.72	18.24	3,526.70
2013Q1	14,535.42	1,713.6	611.26	26.28	11.37	22.88	3,439.46
2013Q2	15,096.76	1,888.1	675.01	30.94	9.36	28.92	3,298.69
2013Q3	16,454.37	2,112.8	729.23	43.15	12.3	33.92	3,527.23
2013Q4	17,132.16	1,960.4	813.36	60.64	14.29	57.08	4,041.95
2014Q1	15,438.68	1,894.1	784.05	67.47	16.6	66.36	3,845.41
2014Q2	16,084.62	1,816.6	852.36	70.25	14.13	74.16	3,511.50
2014Q3	17,479.13	1,802.3	1027.92	78	18.94	86.48	3,658.97
2014Q4	18,150.36	1,756.2	1015.55	96.35	24.37	119.47	3,600.71
2015Q1	16,050.60	1,654.3	937.96	96.31	22.76	91.61	3,477.91
2015Q2	16,463.34	1,540.4	962.43	104.57	17.05	100.43	3,293.67
2015Q3	17,976.23	1,499.0	1011.48	112.42	22.39	109.3	3,281.45
2015Q4	18,533.75	1,501.8	1058.38	135.2	29.38	141.01	3,034.07
2016Q1	15,943.71	1453.29	1069.99	144.7603	31.69218	135.2422	2757.682
2016Q2	16,218.54	1441.501	1134.496	163.712	26.27595	168.2846	3041.714
2016Q3	17,555.44	1414.9	1246.799	189.947	30.76359	223.0574	5460.301
2016Q4	18,213.54	1519.858	1536.849	260.5772	43.62861	230.3132	3325.106
2017Q1	15,797.97	1479.096	1502.057	285.9773	46.57401	260.5894	3087.021
2017Q2	16,334.72	1302.386	1544.229	324.1315	37.0928	295.2361	3963.298
2017Q3	17,760.23	1308.669	1558.755	364.5499	45.57765	239.356	3757.188
2017Q4	18,598.07	1291.758	1832.551	435.1544	55.35217	306.8174	4138.958

Source: CBN (2017) Statistical Bulletin Volume 28, December.

Note: n. a. means not available