

THE EQUILIBRIUM OF TECHNOLOGY AND CASHLESS ECONOMY

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ABSTRACT

This research was carried out to examine the equilibrium of technology and cashless economy on the Nigerian Economic Growth. Cashless economy refers to an economic situation where transaction is carried out without the moving of physical cash from one person to another but rather through the use of credit card or debit card, this means that you can buy goods and pay for services without exchange of physical cash. The objective of the study is to examine the relationship between cashless economy and the Nigerian economic growth, Determine the relationship between credit to private sector and Nigeria economic growth. Investigate the relationship between exchange rate and Nigeria economic growth. The study employed ex-post facto research design; secondary data were used and data was analyzed using the least square estimation. It was observed that cashless economy has enhance business, cashless economy has led to financial openness, the study findings show that Cashless economy, significantly influences the Nigerian economic growth, cashless economy has also ensured financial deepening. Based on the findings from the study, we conclude by saying that cashless economy opens up the economy for transactions, increases economic activities, it is recommended that the government and the various stakeholders should make conscious effort in sustaining the Cashless economy.

Keywords: cashless economy, economic growth, financial deepening, financial openness, financial inclusion

1.0 INTRODUCTION

Cashless policy was introduced by the central bank of Nigeria (CBN) into the Nigeria financial system in 2012 (Abu, 2025). Cashless economy is an economy where transactions are carried out without the use of physical cash as a medium of exchange but rather transactions is through online banking system that make use of credit or debit card to pay for goods and services (Goodnews, 2025).

Fig 1 Cashless Economy



Source: Cashless economy Gadget

Cashless economy can be described as a condition in an economy where financial transactions are done without the carrying of physical cash from one person to another, it usually involves online banking, in which credit card or debit card payments is used to carryout transaction (Taiwo, 2025).

Fig 2 Cashless Economy plan



Source: Cashless economy world

Statement of the Research Problems

The world today is not as how it was yesterday, the world has become highly digital and highly computerized, every economy in the world don't want to be left behind in this new world order with regards to computerization of everything, this can be possible through cashless electronic that is an economy that is mainly electronic banking nature, this kind of economy leads to banking effectiveness and efficiency as well as customer's satisfaction and this will lead to economic growth, There are so many problems and challenges that hinder the effective functionality of cashless economy in Nigeria. These problems include: Poor network facilities as well as Inadequate power supply, high transaction cost by banks, insufficient support from the government and the regulators, poor attitude of Nigerians towards cashless economy, communication gaps and inadequate awareness of cashless economy in Nigeria, In the light of the problems that this study was done.

Objectives of study

The broad objective of this research is to investigate the influence of cashless economy on Nigeria economic growth. The Specific objectives, are to:

- i. Examine the relationship between cashless economy and the Nigerian economic growth.
- ii. Determine the relationship between credit to private sector and Nigeria economic growth.

iii. Investigate the relationship between exchange rate and Nigeria economic growth.

Research Questions

Based on the forgoing the research questions of the study are:

- i. Do cashless economy have significant relationship with the Nigeria economic growth?
- ii. What is the relationship between credit to private sector and the Nigeria economic growth?
- iii. Is there any significant relationship between exchange rate and the Nigeria economic growth?

Hypotheses of the Study

The following hypotheses have been formulated as guides to finding answers to the research questions. The hypotheses are stated in the null form. They include:

HO₁: cashless economy has no significant relationship with the Nigeria economic growth.

HO₂: There is no significant relationship between credit to private sector and the Nigeria economic growth.

HO₃: exchange rate has no significant relationship with the Nigeria economic growth.

Significance of the Study

The outcome of this study would contribute to existing literature on the influence cashless economy on the Nigerian economic growth as well as other areas that relates to cashless economy.

- i. The study provides information that may be useful to the central bank of Nigeria (CBN) in monitoring of the Nigerian economic growth as to ensure that it is fully developed.
- ii. The study provides information and serves as research material for students and the academia. In addition, the results could be relevant to banks and their shareholders as it would help them understand better their roles in the Nigeria economic growth.
- iii. This study will also benefit policy makers, investors, regulatory bodies researchers and students of related disciplines.

Scope of Study

The study focuses on the influence of cashless economy on the Nigeria economic growth. The study from 2014 to 2024. Data were sourced from Central Bank of Nigeria (CBN) statistical bulletin.

Limitation of Study

The main limitation would have been the sole reliance on secondary data of time series nature. However, since relevant data were sourced from CBN sources, data reliability was not a limitation. Also, the study adopted one of the most sophisticated analytical tools in the extent literature for handling time series data, hence, the results are deemed reliable and useful for policy direction.

2.0 Literature Review

Conceptual Review

Economic growth

Economic growth is the rate of productivity in any given economy, it is the level of economic activity in a country (Abu, 2025).

Economic growth is represented by Real gross domestic product (RGDP) or Gross domestic product (GDP) it is the

increase in economic activities, over a specified period of time (Eseosa, 2025).

Economic growth is said to occur if there are indices of increase in an economic that is if the economy is doing well (Uyioghosa, 2025).

Economy growth occurs when an economy is gradually moving towards development (Osasere, 2025).

Economic growth occurs when an economy is witnessing productivity (Goodnews,2025).

Economic growth occurs when all the productive sectors in the economy is witnessing an increase (Joy, 2025). When there is economic growth it shows in the increase in income level, if there is an increment in the income level it is a sign of economic growth (Godgift, 2025). Economic growth refers to the process in which productive abilities and capacity of an economy increases over a given period of time causing an increment in the level of national income (Kwegbe, 2025). Economic growth is the increase in the total capital stock of a country, when there is an increment in the total capital stock of a country it is a sign of economic growth (Asanuvwie, 2025). Economic growth refers to an increase in per capital income (Godgreatness, 2025). Economic growth refers to an increase in national income, it often represented using real gross domestic product (RGDP) (Joy, 2025)

Cashless economy

Ejiofor and Rasaki (2025) describes cashless economy as a mechanism that can store money in an electronic card which can be used for buying of goods and services.

Cashless economy can be described as an economy that encourage transactions without the carrying of physical cash from one person to another, cashless economy helps to curb transaction frictions (Omotunde, Sunday & John-Dewole, 2025).

Fig 3 Cashless Economy activity



Source: Cashless economy detail

Cashless economy is a system that involves transactions without carrying physical cash, it is an economy that support electronic transaction (Akhalmeh & Ohiokha, 2025). Cashless economy increases convenience, it curbs risk that is associated with carrying of physical cash as well as prompt accessibility to banking services (Yaqub, Bello, Adenuga & Ogundeji, 2025).

The use of credit card and debit card dominates the cashless economy (Ezeamama, Ndubuisi, Marire & Mgbodile, 2025). Cashless economy encourages mobile payment system (Adurayemi 2025). Cashless economy encourages financial innovation (Akara & Asekome, 2025).

Fig 4 Cashless Economy mechanics



Source: Cashless economy house

Abu (2025) Cashless economy is an economy that do transactions without the immediate carrying of cash.

Uyiosa (2025) Cashless economic is an economy that utilize e payment platforms and electronic banking.

Osasere (2025) Cashless economy is a banking system that is deeply rooted in electronic banking.

Reasons for cashless economy

1. Cashless economy is a catalyst that enhance efficiency in the Nigeria financial payment system.
2. It minimize cost of banking services
3. Cashless economy enhance monetary policy.
4. Cashless economy minimize inefficiency as well as corruption
5. It helps to manage inflation (CBN,2025).

Fig 5 Cashless Economy dynamics



Source: Cashless economy world

Theoretical Review

Technology Acceptance Theory

Technology Acceptance Model (TAM) was introduced by Venkatesh and Davis (2000), it was used to explain the reason why users adopt or reject an innovative information system. This model and theory offers a powerful and effective explanation for user acceptance as well as usage behaviour of information technology. The concept of Technology Acceptance Model (TAM) theorizes and conceptualizes that an individual's behavioral intention as well as attitude to adopt a concept or system is primarily based or determined by two major beliefs, which are perceived usefulness (PU), which talks about how useful will the innovation be to the users and perceived ease of use (PEOU), this talks about how easy to use will the concept be to the users. TAM is a theory that talks about the acceptance of technology that is usually predicted by user's behavioral pattern as well as intension which is also determined by the perception of technology especially in the aspect of usefulness in performing specific task in respect to the perceived ease of its use. The main element of this model are: perceived usefulness, perceived ease of use, attitude towards use and behavioral intention to use (Osasere, 2025).

Fig 6 Cashless Economy equilibrium



Source: Cashless economy activity

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

The Diffusion of Innovations (DOI) theory carefully analyses the rate as well as the magnitude at which new idea and technology circulates and spread through varied cultures, it also explains the reasons behind the spread of new technology. (Ajayi, 2025).

Fig 7 Cashless Economy matters



Source: Cashless economy for the world

Empirical Literature

James (2025) employed Rogers Diffusion of Innovation theory to determine the adoption of mobile banking in Nigeria. The study was carried out from 2000-2023. Co – integration was used to estimate the data, the result from the study shows a positive relationship between economic growth and cashless economy.

(Olorunsegun, 2025) employed cluster sampling technique to examine the impact of electronic banking in Nigerian banking system. The study was from 2001 to 2023. Error correction model was used. The study shows a positive relationship between cashless economy and the economic growth.

(Mieseigha and Ogbodo, 2025) used simple percentages, Chi-square and Analysis of variance (ANOVA) to analyzed the advantages of cashless economy on Nigeria's economic development, the study was from 2000 -2024, the findings show that there is a significant relationship between cashless economy and the economic growth, it was discovered that cashless economy leads to accountability, reduction of cash fraud as well as financial openness.

Fig 8 Cashless Economy merits



Source: Cashless economy world

Some cashless economy gadgets

Automated teller machine in Nigeria (ATM)

Automated teller machine (ATM) is a machine for dispensing cash (Abu, 2025). Automated teller machine in Nigeria (ATM) refers to a machine for paying cash (Uyioghosa, 2025). ATM machine is a machine for dispensing money (Eseosa, 2025). ATM machine is a machine for paying cash (Rose, 2025).

ATM is a machine that is used to access cash (Keith, 2025). It is the amount of cash paid by ATM (Joy, 2025).

Web banking (WEB)

Internet banking is the act of carrying out financial transactions through the web (Abu, 2025). The use of internet to access financial transactions is web banking (Keith, 2024). web banking is when the internet is used in the cause of financial services such as using the web pay services (Eseosa, 2025). web banking is when internet is used to access any banking services (Joy, 2025). web banking can be described as banking services done on internet (Godgift, 2025).

Point of sales (POS)

Point of sales (POS) point of sales terminal or machine is a device that is used for accessing debit cards before financial transactions are made (Abu, 2025). This is device that is used for withdrawing cash (Joy, 2025). POS machine is an electronic device for accessing cash (Kwegbe, 2025). POS is an electronic device that is used for withdrawal (Eseosa, 2025). POS is a device used for withdrawing funds (Rose, 2025). POS is a device for withdrawing money (Godgreatness, 2025).

Bank mobile apps in Nigeria (BMA)

Bank mobile apps (BMA) is an app that facilitate banking services (Rose, 2025). Bank mobile app is an app designed to facilitate banking transactions (Joy,2025). Bank mobile app enhance quick banking services (Osasere, 2025). Bank mobile app promotes fast banking services (Kwegbe, 2025). Bank mobile app facilitate convenient banking services (Abu, 2025).

3.0 Methodology

The study adopts ex-post facto research design. The study area is Nigeria. The data used for this study are secondary data, sourced from the Central Bank of Nigeria Statistical Bulletin (various issues) that covers the period of study 2014-2024. Real Gross Domestic Product is the dependent variable, while the independent variables are credit to private sector and exchange rate. Data analysis will be estimated using Least squares.

Model Specification

Real Gross Domestic Product (RGDP), Credit to private sector (CTPS) and exchange rate (EXRT), for the period between 2014-2024 where:

RGDP =Real Gross Domestic Product.
CTPS = Credit to private sector
EXRT = exchange rate
RGDP =F (CTPS, EXRT)-----
(3.1)

This can be put in linear estimation form as above
RGDP_t= β₀+β₁CTPS_t+β₂EXRT_t + U_t-----
(3.2)

This can be put in an econometrics estimation form as above.

4.0 Data presentation and analysis

This section presents the data and analysis of the result.

Table 1: Shows Real Gross Domestic Product, Credit to private sector, exchange rate and OLS Result.

| VARIAB LES | COEFFICI ENT | STD. ERR OR | T- STATIS TIC | PR OB |
|--------------------|--------------|-------------------|---------------|--------|
| C | 1820.567 | 2839.457 | 5.500296 | 0.0005 |
| CTPS | 314.8805 | 26.69600 | 11.79504 | 0.0005 |
| EXRT | 1.935950 | 6.099174 | 12.317412 | 0.0005 |
| R-squared | 0.994669 | Adjusted R-square | 0.981050 | |
| F-statistic | 269.3409 | Prob(F-statistic) | 0.500000 | |
| Durbin-Watson stat | 1.944238 | | | |

Source: E-views 9

From the regression result it shows that Credit to private sector and exchange rate has a positive and a significant impact on the Nigerian economic growth, the R-squared which is 99% and the adjusted R-squared is 98% showing goodness of fit, the DW shows the absence of autocorrelation. F- statistics shows that the result is significant at 5% level of significance.

5.0 Summary, Conclusion and Recommendations

Summary of Findings

Based on the findings of this study, we concluded that the equilibrium of technology and cashless economy have an impact on Nigeria economic growth, Credit to private sector and exchange rate have a great implication on the Nigeria economic growth.

Conclusion

The foregoing analysis tends to confirm that the equilibrium of technology and cashless economy have a huge impact on the Nigeria economic growth.

Recommendations

The following recommendation was made:

- 1 The government should provide a better network facility to drive cashless policy.
- 2 The government should provide adequate power supply to facilitate cashless policy in Nigraeia.
- 3 The government should sustain the cashless policy by creating awareness to the populace on its significance.

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