

CASHLESS POLICY, THE ECONOMIC GROWTH FACTORS IN NIGERIA ECONOMY

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ABSTRACT

This study examined the cashless policy and the elements that led to economic development in Nigeria using quarterly time series data from 2014 to 2023 using an ex-post facto research approach. To examine the data, several diagnostic tests were utilized, including the serial correlation, heteroskedasticity, and Cusum test. The Phillip-Peron and Kwiatkowski-Phillips-Schmidt-Shin (KPSS) methods were used to assess the unit roots of the variables, and the data was examined using the Auto-Regressive Distributed Lag (ARDL) technique. The data revealed that there is no statistically significant relationship between ATMs and GDP, although there is a relationship between Cheque (CQ) and Internet banking (IB) and GDP. According to the findings of the study, the authors believe that the Central Bank of Nigeria should press banks to provide good ATM services to Nigerians. One purpose of the cashless policy is to encourage individuals to utilize other payment methods, and this will most likely accelerate that process...

Keywords: *Automated Teller Machine; Cashless policy; Cheque; Economic Growth; Internet Banking.*

INTRODUCTION

The government's cashless policy aims to reduce the quantity of cash in circulation by discouraging cash use and supporting the expansion of electronic payment systems. This strategy is not intended to discourage individuals from using cash. Instead, it is intended to limit the frequency with which currency is handled and the amount of money in circulation.

The Central Bank of Nigeria implemented the cashless policy in 2012. On January 1, 2012, Lagos state launched a pilot experiment to eliminate cash. On July 1, 2013, the second phase of this policy's implementation began in the states of Abia, Anambra, Kano, Ogun, Rivers, and the Federal Capital Territory. The deployment began across the country on July 31, 2014. The cashless policy is meant to encourage people to use other, more handy ways to pay, like credit cards, debit cards, instant payments, mobile banking, NIBSS electronic fund transfers, and e-checks.

Ajayi thinks that a cashless economy is a society in which people can buy and sell things without using bills and coins. A cashless economy, as defined by Omotunde, Sunday, and John-Dewole, is one in which fewer or no physical currencies are utilized and instead payments are made through digital means.

In a cashless economy, monetary exchanges are made without the transfer of physical currency. Credit or debit cards are used to complete this transaction. It's an economic model in which the main focus isn't on exchanging money for goods and services. When compared to traditional cash transactions, cashless payments make theft and other crimes involving cash much less likely to occur. When making a transaction, consumers often carry less cash than if they had used a different payment method. Thefts involving cash are less profitable for criminals as a result. By accepting payments through a variety of methods, suppliers can boost sales, enhance efficiency, and reduce overhead expenses.

It is expected that Nigeria's economic growth will be affected by the country's move towards a cashless policy. However, as a developing economy, implementing a cashless policy is difficult due to factors such as the possibility of fraud, repetitive deductions, a shortage of electricity, high internet data prices, low levels of literacy,

a lack of fundamental instruments to conduct the process, and so on. According to the CBN and Gbanador, cashless policies are not extensively adopted in Nigeria due to factors such as weak network connectivity, high transaction prices, security concerns, and technological issues.

Different people have different ideas about how much the cashless strategy has helped the Nigerian economy grow. Adopting the CBN's cashless policy has helped boost Nigeria's economy. On the other hand, there are studies that claim cashless policies don't contribute nearly as much to economic growth as is hoped. As a result, there are steps that can be taken to improve the outcome. Why else would academics like Omotunde, Sunday, and John-Dewole claim in their paper that "modernization of Nigeria's payment system, cost reduction of banking services, and reduction of high security and safety risks" could assist maximize the effect of cashless policy on GDP growth?

Due to their widespread use, electronic payment methods like mobile banking, ATMs, and points-of-sale have been the primary focus of most research on cashless policy in Nigeria. Most of these analyses also examine how the shift towards a cashless economy has affected the efficiency of financial institutions. This research aims to fill this void by include cheque as a new independent variable and using GDP as the dependent variable. The goal is to assess the effect of Nigeria's cashless policy on the country's economic development.

LITERATURE REVIEW

In this section, we briefly reviewed the related literature from a conceptual, theoretical, and empirical perspective.

Conceptual Review

The term "cashless economy" is used to describe a financial system in which people rarely, if ever, exchange actual currency. This means that people are increasingly turning to non-traditional methods of making purchases and payments, such as cash, checks, credit cards, the Internet, mobile apps, etc. According to Ejiro, a cashless economy is one in which people no longer use cash when making purchases because of the widespread use of other payment methods like credit and debit cards.

The objective of the Cashless Policy is not to eradicate monetary cash altogether. However, the idea behind its introduction is to lessen reliance on hard currency by providing additional options for paying for goods and services. On the other hand, a cashless economy typically reduces rather than eliminates the use of currency. It is clear that the concept of a "cashless economy" does not imply a world without cash transactions. Instead, it provides an alternative to using cash in monetary transactions.

In a cashless economy, transactions can take place using a variety of electronic means, such as credit cards, debit cards, point-of-sale terminals, online and mobile banking, etc. Here, we'll take a look at each of these settlement methods in turn.

(a) **Cheques:** A check can be seen as a bill of exchange with a bank as the drawee. There are two types of checks: open and crossed. An open check can be cashed without being submitted to the clearing house. In contrast, a crossed cheque is one that has been marked on the front with two perpendicular transverse lines. Because of the account payable designation, a crossed cheque must be opened before it may be cashed. If the drawer signs in the parallel line, the cheque is considered "open."

(b) **Automated Teller Machine:** It is a piece of computerized telecommunications equipment that banks use to do teller services like taking money out, putting money in, moving money, paying bills, checking account balances, opening accounts, etc. Outside of the bank's main building, customers can utilize ATMs to conduct a number of teller-related transactions without ever having to speak to a human teller.

(c) **Point of Sale (POS) Terminal:** This is a hand-held terminal that accepts credit card payments on the go. Point-of-sale systems are commonplace in Nigerian settings such grocery stores, fuel stations, shops, even churches. In urban areas, it is widely accepted as a form of currency. The POS is an electronic payment system that works when a customer puts in his bank card, enters his PIN and the amount to be charged, and then

presses enter (OK). The machine prints two receipts once the payment is processed. Both the cardholder and the retailer should save their own receipts.

(d) **Internet banking:** With this type of electronic payment channel, a customer can use an internet-connected computer to browse the bank's website and take care of ordinary banking tasks. Web banking, sometimes called online banking, refers to financial transactions conducted via the internet. Through the online banking channel, a customer can conduct some basic banking business without ever having to set foot inside the bank's physical location.

(e) **Mobile banking:** It's a way for customers to do banking business with the bank using their mobile phones and an electronic payment system. Using a smartphone or other mobile device loaded with the bank's app, customers can conduct banking transactions on the go. The user may also be required to perform some basic biometrics before using it. When entering a user ID and password or PIN, most mobile commerce is completed when the customer verifies their identity.

Empirical Review

Siyanbola looked at how cashless banking affected the economy of Nigeria. The study method was descriptive research, and chi-square was used to analyze the data. The study found that for cashless banking to grow in Nigeria, the country would need more help from the government, a steady supply of electricity, and an established network of communications.

In a similar research, Taiwo, Ayo, Aferoho, and Agwu examined Nigeria's cashless policy from 2012 to 2016. The survey was used as the basis for the study, and the data were analyzed using descriptive statistics and a one-sample t-test. The study found that a cashless policy can assist achieve the aim, but only if it is implemented properly.

Agu & Agu examined data from 2010 to 2018 to determine the impact of cashless policies on Nigerian economic development. The OLS technique was used to quarterly time series data. The Granger correlation, unit root, and cointegration tests were also performed. This data comes from the 2019 editions of the World Bank's Development Indicator and the Central Bank of Nigeria's Statistical Bulletin, Annual Report, and Statement of Account. According to the study's conclusions, the Cashless Policy has an impact on Nigeria's economic growth and advancement. Cash withdrawals and purchases made at POS machines stand out. As a result, the study recommends that financial institutions spend more in ICT to improve the efficiency of electronic payment systems.

Ewa and Inah investigated how Nigeria's Cashless Policy was implemented. The data was examined using simple percentages and the Relative Importance Index (R.I.I.), and the study was conducted using a poll research approach. The findings of the study show that there is an urgent need to increase public awareness of the benefits of banking in order to encourage the financially excluded to begin utilizing financial institutions.

Okafor conducted research to determine how the cashless policy will affect the revenues of Nigeria's Deposit Money Banks between 2009 and 2019. The independent variable was the channels, which included internet and mobile banking as well as point-of-sale technologies. The return on assets was the dependent variable. The study employed enhanced Dickey Fuller tests for unit roots, regression analysis, and descriptive statistics as econometric approaches.

The study discovered that using Internet Banking, POS, MB, and ATMs had a favorable and statistically significant influence on ROA. According to the survey, Nigeria's cashless strategy benefits the success of its deposit money banks. From 2009 through 2019, researchers Nwakoby, Chukwu, and Oghenetega investigated how a cashless approach might affect the earnings of Nigerian deposit money institutions. The study was based on secondary data, and the findings were examined using the Auto-regressive Distributed lag model. We substituted PBT for the dependent variable and utilized POS Terminal, ATM, Mobile Banking, and Online

Payment platform as independent variables. According to the report, cashless regulations in Nigeria had a tiny but negative impact on the earnings of Deposit Money Banks before taxes. The study's findings support the premise that bank clients should be educated on the importance of cashless policies. Ignoroje and Okoroyibo conducted research from 2009 to 2018 to determine how Nigeria's cashless policy affects the effectiveness of the country's Deposit Money Banks.

The study employed a technique known as "retrospective." For Cointegration and Coefficient analysis, descriptive statistics, the Augmented Dickey Fuller Test, the Philip Perron Test, and the Autoregressive Distributed Lags (ARDL) Test were utilized. The study shows that the CBN's cashless policy is good for the performance of banks.

Theoretical Review

Kapoor advanced the Bank-centered theory. The premise of the theory is that banks provide their customers with financial services through non-traditional, conventional, and low-cost delivery channels. Examples of such methods include online banking, POS systems, mobile payment systems, etc. Therefore, banks offer a wide variety of financial services via electronic payment methods, removing the need for customers to visit the location where their accounts are maintained. The essential feature of the CBN cashless policy is electronic payment methods, thus this hypothesis is relevant to the present investigation.

METHODOLOGY

The study used a retrospective methodology. In order to determine whether or not one variable caused another, this study strategy was implemented. The CBN Statistical Bulletin was consulted in order to get a quarterly time series covering the years 2014 through 2023. Gross domestic product was employed to symbolize economic expansion while cheques, ATMs, and online banking stood in for the cashless policy.

Model Specification

The functional specification of the model is given as;

$$GDP = f(CQ, ATM, IB)$$

Where;

GDP = Gross Domestic product

ATM= Automated teller machine

CQ = Cheque transactions

$$GDP = \beta_0 + \beta_1 CQ + \beta_2 ATM + \beta_3 IB + U_t$$

IB = Internet banking

GDP, CQ, ATM and IB are as defined in equation

while;

β_1 , β_2 and β_3 = Regression coefficient.

β_0 =Regression Constant

U_t =Stochastic Error Term

Pre-estimation Tests

Pre-estimation tests were performed by the researcher, including the Phillips-Peron method for testing stationarity and the limits test for cointegration. The purpose of these analyses was to ensure that the data used in the study were appropriate. To ensure that we were using the right cointegration test, we ran a series of stationarity tests. Cointegration tests are used to check for a long-term connection between the study's time series variables?

RESULTS AND DISCUSSION

Table 1. Unit root (Stationarity) test

Variables	Phillips Peron test statistic	Mackinnon's Critical Values at 1%, 5% & 10% respectively			Order of Integration	Prob.
GDP	-3.836266	-3.610453	-2.938987	-2.607932	(0)	0.0055
ATM	-9.916327	-3.615588	-2.941145	-2.609066	(1)	0.0000
CQ	-10.37006	-3.615588	-2.941145	-2.609066	(1)	0.0000
IB	-8.058364	-3.615588	-2.941145	-2.609066	(1)	0.0000

Source: Authors computation using Eviews 10

Results from a Phillips-Peron unit root test are shown in Table 1; with the exception of GDP, all variables are level or first-order stationary. As a result, GDP is level, but CQ, ATM, and IB are stationary at order (1). Because of this finding, the Auto-Regressive Distributed Lag is required to complete the investigation.

Table 2. Unit root (Stationarity) test

Variables	KPSS test statistic	Asymptotic's critical values at 1%, 5% & 10% respectively			Order of Integration
GDP	0.142004	0.739000	0.463000	0.347000	(1)
ATM	0.222663	0.739000	0.463000	0.347000	(1)
IB	0.132273	0.739000	0.463000	0.347000	(1)
CQ	0.231259	0.739000	0.463000	0.347000	(0)

Source: Authors computation using Eviews 10

Table 2 displays the results of a unit root test using the Kwiatkowski-Phillips-Schmidt-Shin (KPSS) model; the data demonstrate that, with the exception of CQ, all variables are stable at order (1). Thus, GDP, ATM, and IB are all level (1) stationary, but CQ is level (2) stationary. This finding provides even more evidence for the necessity of using the Auto-Regressive Distributed Lag for the analysis.

Table 3. ARDL bounds test for cointegration

F-Bounds Test	Null Hypothesis: No levels relationship			
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	17.92780	10%	3.47	4.45
k	3	5%	4.01	5.07
2.5%	4.52	5.62		
1%	5.17	6.36		

Source: Authors computation from Eviews 10

The F-statistic is used to assess the lower and upper limits of the cointegration discovery, and the ARDL bound cointegration test is used to determine if the relationship between the dependent and independent variables is in long-term equilibrium. Table 3 demonstrates that an F-statistic of 17.92780 is greater than both the lower bound of 4.01 and the upper bound of 5.07 at the 5% level of significance. This means that the factors being looked at are in a long-term state of balance with each other.

Table 4. ARDL short run error correction model

ARDL Error Correction Regression

Dependent Variable: D(GDP)

Case 5: Unrestricted Constant and Unrestricted Trend

Selected Model: ARDL(4, 4, 4, 4)

Date: 05/13/23 Time: 15:55

Sample: 2014Q1 2023Q4

Included observations: 36

ECM Regression

Case 5: Unrestricted Constant and Unrestricted Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4372460.	391594.9	11.16577	0.0000
@TREND	130388.4	16905.14	7.712944	0.0000
D(GDP(-1))	-0.577561	0.056201	-10.27673	0.0000
D(GDP(-2))	-0.717175	0.043318	-16.55610	0.0000
D(GDP(-3))	-0.931622	0.050755	-18.35522	0.0000
D(CQ)	-0.872253	0.351581	-2.480947	0.0254
D(CQ(-1))	-1.960285	0.408812	-4.795082	0.0002
D(CQ(-2))	-1.938264	0.363101	-5.338091	0.0001
D(CQ(-3))	-1.023784	0.357707	-2.862074	0.0119
D(ATM)	-1.123632	0.272862	-4.117948	0.0009
D(ATM(-1))	-0.471310	0.238292	-1.977869	0.0666
D(ATM(-2))	-1.049979	0.242634	-4.327424	0.0006
D(ATM(-3))	-1.351092	0.400744	-3.371456	0.0042
D(IB)	0.075580	0.019211	3.934117	0.0013
D(IB(-1))	0.017210	0.014701	1.170669	0.2600
D(IB(-2))	0.068699	0.017402	3.947656	0.0013
D(IB(-3))	0.038667	0.015517	2.491940	0.0249
CointEq(-1)*	-0.690122	0.074395	-9.276499	0.0000
R-squared	0.993464	Mean dependent var	118976.6	
Adjusted R-squared	0.987291	S.D. dependent var	1554089.	
S.E. of regression	175197.3	Akaike info criterion	27.29207	
Sum squared resid	5.52E+11	Schwarz criterion	28.08383	
Log likelihood	-473.2572	Hannan-Quinn criter.	27.56841	
F-statistic	160.9415	Durbin-Watson stat	1.643713	
Prob(F-statistic)	0.000000			

* *p-value incompatible with t-Bounds distribution.*

Source: Authors computation from Eviews 10

The ARDL-ECM study produced a speed of adjustment coefficient (also known as the error correction term) of -0.690122 with a pvalue of 0.0000, as shown in Table 4. If this model has a short-run to long-run disequilibrium, the rate of adjustment between these two states is 69.01% every quarter. The adj. R2 reveals that the variance in the independent variables (CQ,ATM, and IB) can explain 98.79% of the variation in GDP, but the R2 result of 99.34% illustrates the correlation of the independent variables as a whole. This leaves a mystery of 1.21 percent.

Table 5. ARDL long run results

ARDL Long Run Form and Bounds Test

Dependent Variable: D(GDP)

Selected Model: ARDL(4, 4, 4, 4)

Case 5: Unrestricted Constant and Unrestricted Trend

Date: 05/13/23 Time: 16:30

Sample: 2014Q1 2023Q4

Included observations: 36

Conditional Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4372460.	2074663.	0.000000	0.0000
@TREND	130388.4	42466.80	3.070360	0.0078
GDP(-1)*	-0.690122	0.127983	-5.392310	0.0001
CQ(-1)	3.542940	0.635926	5.571305	0.0001
ATM(-1)	-0.013069	0.566678	-0.023062	0.9819
IB(-1)	-0.089794	0.020237	-4.437242	0.0005
D(GDP(-1))	-0.577561	0.107747	-5.360341	0.0001
D(GDP(-2))	-0.717175	0.068064	-10.53671	0.0000
D(GDP(-3))	-0.931622	0.069475	-13.40952	0.0000
D(CQ)	-0.872253	0.454061	-1.921005	0.0739
D(CQ(-1))	-1.960285	0.549579	-3.566888	0.0028
D(CQ(-2))	-1.938264	0.506434	-3.827281	0.0016
D(CQ(-3))	-1.023784	0.484776	-2.111868	0.0519
D(ATM)	-1.123632	0.386454	-2.907546	0.0108
D(ATM(-1))	-0.471310	0.553475	-0.851547	0.4079
D(ATM(-2))	-1.049979	0.496862	-2.113218	0.0518
D(ATM(-3))	-1.351092	0.510797	-2.645066	0.0184
D(IB)	0.075580	0.022898	3.300696	0.0049
D(IB(-1))	0.017210	0.018104	0.950634	0.3569
D(IB(-2))	0.068699	0.020718	3.315930	0.0047
D(IB(-3))	0.038667	0.022614	1.709855	0.1079

* p-value incompatible with t-Bounds distribution.

Levels Equation

Case 5: Unrestricted Constant and

Unrestricted Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CQ	5.133790	1.117896	4.592369	0.0004
ATM	-0.018937	0.819800	-0.023099	0.9819
IB	-0.130114	0.037052	-3.511669	0.0031
EC = GDP - (5.1338*CQ - 0.0189*ATM - 0.1301*IB)				

Source: Author's computation from Eviews 10

Table 5 shows how the ARDL Model has done over time. At the 5% level of importance, it is found that Check (CQ) has a positive effect on GDP, with a P-value of 0.0004 and a coefficient of 5.133790. So, an increase of 1 unit in CQ leads to a 513.38% rise in GDP. The association for ATM performance is -0.018937, which means that when ATM performance goes up by one unit, GDP performance goes down by 1.89%. GDP goes down because of the ATM, but this is not statistically significant ($P = 0.9819$). Online banking, which is known as IB, has a value of -0.130114. This number shows that the GDP will drop by 13.01% for every unit rise in how well online banking works. The P-value of 0.0031, on the other hand, shows that using the Internet to do financial activities hurts GDP.

Table 6. Breusch-Godfrey Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.220674	Prob. F(2,13)	0.8049
Obs*R-squared	1.182061	Prob. Chi-Square(2)	0.5538

Source: Author's computation from Eviews 10

Serial Autocorrelation Test

To understand more about serial correlation, the Breusch-Godfrey Serial Correlation LM test was employed. The p-value for the F-statistic, 0.8049, was larger than 0.05, indicating that there was no serial connection between the variables...

Table 7. Correlogram of residuals squared

Date: 05/13/23						
Time: 16:52						
Sample: 2014Q1						
2023Q4						
Included observations: 36						
Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob*	
. .	. .	1	-0.017	-0.017	0.0114	0.915
. *	. *	2	0.092	0.092	0.3522	0.839
. *	. *	3	0.122	0.126	0.9678	0.809
. .	. * .	4	-0.061	-0.066	1.1276	0.890
. * .	** .	5	-0.180	-0.212	2.5610	0.767
. .	. .	6	0.000	-0.014	2.5610	0.862
. * .	. * .	7	-0.139	-0.086	3.4690	0.838
. .	. .	8	-0.061	-0.021	3.6525	0.887
. *	. *	9	0.130	0.140	4.5031	0.875
. * .	. * .	10	-0.081	-0.077	4.8462	0.901
. *	. *	11	0.207	0.187	7.1824	0.784
. *	. .	12	0.094	0.042	7.6872	0.809
. .	. .	13	0.038	0.017	7.7731	0.858
. *	. .	14	0.078	0.053	8.1507	0.881
. * .	. * .	15	-0.085	-0.151	8.6244	0.896
. * .	. .	16	-0.078	0.002	9.0409	0.912

*Probabilities may not be valid for this equation specification.

Source: Author's computation from Eviews 10

Serial correlation was investigated using the Correlogram Residuals test. Table 7 demonstrates that no serial correlation exists between any of the model's input variables, since all estimated probabilities are larger than 0.05 ($P > 0.05$).

Heteroskedasticity Test

Table 8. Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.606745	Prob. F(20,15)	0.8531
Obs*R-squared	16.09943	Prob. Chi-Square(20)	0.7104
Scaled explained SS	3.544740	Prob. Chi-Square(20)	1.0000

Source: Author's computation from Eviews 10

This model is Homoskedastic, since both the F-statistic and the Observed R-Squared have values larger than the 0.05 threshold required by the test. This implies that the ARDL finding is not affected by heteroskedasticity.

Table 9. Heteroskedasticity Test: ARCH

F-statistic	0.009507	Prob. F(1,33)	0.9229
Obs*R-squared	0.010080	Prob. Chi-Square(1)	0.9200

Source: Author's computation from Eviews 10

Heteroskedasticity was not an issue, as proven by the ARDL result and the ARCH test.

4.3 CUSUM Test

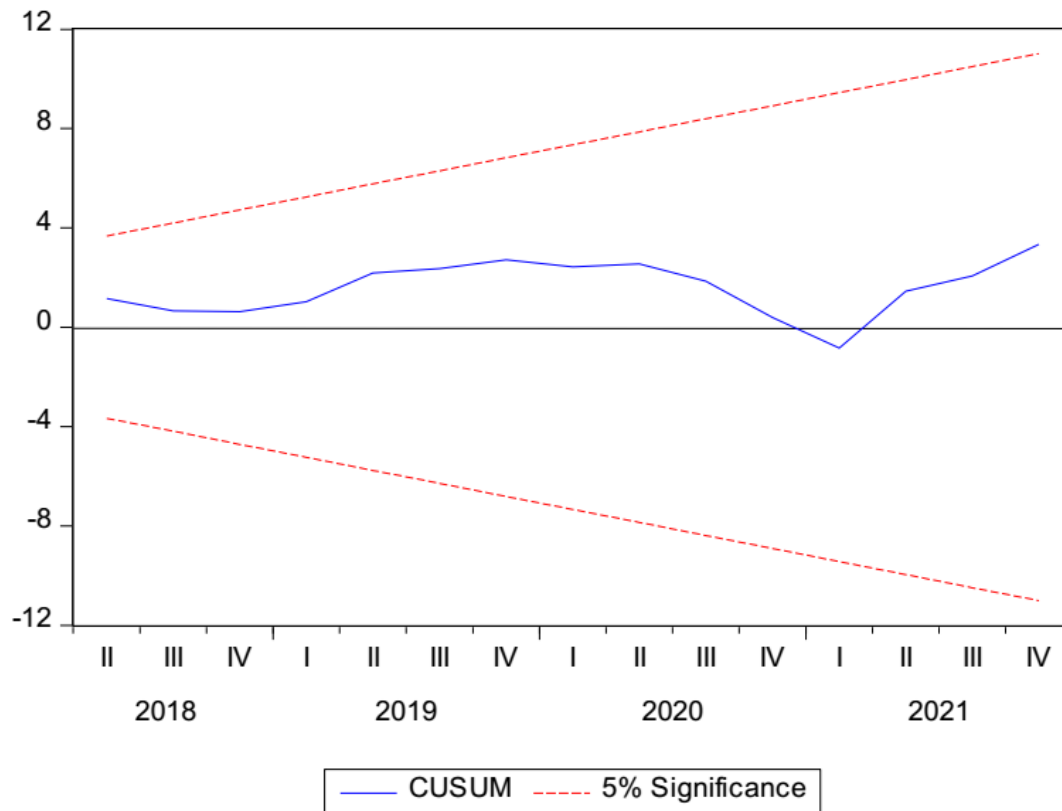


Fig. 1. CUSUM Test of Stability

Source: Author's computation from Eviews 10

The model's stability was tested using the CUSUM test, and the outcome indicated that it was well described.

CONCLUSION AND RECOMMENDATIONS

The purpose of this research was to determine if and how cashless policy affected economic development in Nigeria. Results from CQ and IB were statistically significant, while those from ATMs were not, suggesting that cashless policy does have an impact on the economy. According to the research, the introduction of a cashless policy in Nigeria has a significant influence on the country's economic progress. As a result of the research's findings, the following are suggested:

- The Bank of Nigeria should push other financial institutions to provide superior ATM services. This is likely to increase the use of ATMs as a form of alternative payment.
- To increase the uptake of cashless policy in Nigeria, the Bank should inform its consumers of the advantages of using ATMs and online banking instead of traditional methods of payment.

- (c) To assist in the implementation of the Cashless Policy, the Central Bank should contribute to the cost of purchasing electronic banking equipment.

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