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Rise in E-payment Channels and the Response of Bank Credit to the Private Sector: A VAR Evidence from Nigeria

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Abstract: *The upsurge in the use of e-payment channels has shaped the activities in the banking sector in diverse ways, and as such has motivated a plethora of research interests. To join the ongoing debate, this study examined the response of credit to the private sector to the rise in the use of e-payment channels in Nigeria. The study used monthly series that covered the period from 2012M12 to 2022M12 under the VAR framework. Findings of the study revealed that credit to the private sector responded positively to shocks in both electronic bills payment and Point of Sale in all the periods under review. On the other hand, its response to shocks in NIBSS instant payment was positive only in period one but thereafter, the response became negative. On grounds of the foregoing, the result of the study strongly suggests that the e-payment channels in Nigeria influence credit to the private sector. The study concludes that the transmission mechanisms through which the e-payment channels impact on credit to the private sector are money supply and bank reserves.*

Keywords: E-payment, private sector credit, monetary authorities, banking sector, VAR.

Introduction

The traditional role of banks in an economy is to generate funds from the surplus units for un-lending to the deficit units. This role, generally known as financial intermediation provides investment funds that lubricates the economy. As observed by Hashim (2012), the importance of financial intermediation is that it enables funds that are not put to productive use to be channeled to areas where they can be productively utilized. Domestic credit to the private sector is therefore necessary for an economy that wants to leapfrog its developmental strides. This is because the private sector has often been referred to as the engine of growth. Credit provision to the private sector is perhaps, more important to an economy like Nigeria where access to credit is a herculean task. As noted by Al-Harbi (2021), if banks are profitable there is the tendency for high liquidity which implies that

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they can extend long-term credit. Several factors have been adduced to be responsible for the difficulty in accessing credit by the private sector in Nigeria: including lack or inadequate collateral, the penchant for financial institutions to extend short-term loans instead of long and medium-term loans, high rate of interest, among others. The importance of credit to the private sector has made studies on its determinants very paramount, especially in a country like Nigeria where sourcing of credit is difficult. The aim of this present study is to contribute to the ongoing debate on the factors that influence bank credit to the private sector with a focus on the role of e-payment channels.

In recent times, precisely in January 2012, the Central Bank of Nigeria (CBN) began the process of cashless policy with a view to reducing the currency outside the banking system and also embracing the new development in the payment system. Figure 1 reveals that currency outside the banking system has been growing over the sample period and this has implications for monetary policy management. Over the years, the cashless policy has deepened the use of electronic payment (e-payment) channels which have come to introduce new dynamics in the payment system and in monetary policy management. E-payment system is a payment effected through transfer of credit card details or some other electronic means that differ from cash or check payment. As observed by Imafidon (2013), e-payment systems are organizations, instruments, operating procedures and information and communication systems deployed to effect payments or transfer money for settling payments. The advent of e-payment systems has altered the banking environment in terms of service delivery as they have closed the gap associated with distance and time. Corroborating this, Awwad (2021) noted that experts in the field of finance are of the opinion that the adoption of recent technologies, especially those relating to e-payment systems has brought transformations in the banking industry. E-payment channels in use in Nigeria currently are: Point of Sale (POS) Technology, Mobile Money Transfer (MMT) Technology, Automatic Teller Machine (ATM), Online Money Payment (WEB), Nigeria Interbank Settlement Systems (NIBSS) Instant Payment (NIP), NIBSS Electronic Fund Transfer (NEFT), Electronic Bills Payment, etc. The Nigeria Interbank Settlement Systems (NIBSS) provides the needed infrastructure to enhance the automated processing and instructions for funds transfers among the financial institutions.

Table 1
Value of E-payment Channels (in Naira)

Year	NEFT (N)	ATM (N)	POS (N)	E-bills Pay	NIP (N)
2012	13,753,178,360	1,984,990,636	48,461,883,431	-	3,890,260,230
2013	14,367,950,496	2,830,533,105	161,212,840,665	15,419,049.00	10,848,734,178
2014	14,563,804,544	3,681,980,955	312,071,736,903	44,334,722,247.00	19,921,499,572
2015	13,087,085,484	3,971,651,486	448,512,548,727	217,426,481,827.00	25,540,842,563
2016	14,584,802,657	4,988,133,401	758,996,505,702	339,407,748,303	38,109,061,203
2017	14,946,463,879	6,437,592,402	1,409,813,091	550,750,791,543	56,165,666,312
2018	11,030,961,545	6,480,085,899	2,383,108,901	500,214,507,607	80,423,025,698
2019	-	6,512,612,259	3,204,749,863	5,080,961,536	105,222,562,871
2020	172,541,642,685	12,004,067,823	2,806,304,086	-	172,541,642,685
2021	410,171,471,820	21,230,934,547	24,455,416,207	-	-

Table 1 reveals that the use of e-payment channels have been growing in value over the years with the value of NEFT and NIP higher than other channels. The value of ATM

and POS was also high within the sample period. In another vein, Figures 2 reveals that credit to the private sector has been growing over the years, except between 2016 and 2018 when the trend was low. The argument raised in this study is that since the increasing use of some e-payment channels has been found to reduce the currency outside the banking system, such has the tendency to improve liquidity in the banking system through the increase in bank reserves. Given such situation, the consequence is that banks will have much leverage to extend credit to the economy and such has implications for monetary policy management in the country. For instance, if the use of the e-payment systems encourages credit extension to the private sector, it has the tendency to influence the price level, thus impacting on the price stability agenda of the monetary authorities. On grounds of the foregoing, empirical evidence on how private sector credit responds to the increasing use of e-payment systems and the transmission mechanism through which this is possible is the motivation for this study.

Figure 1
Trend in Currency outside the Banking System
Note: COBS – currency outside the banking system

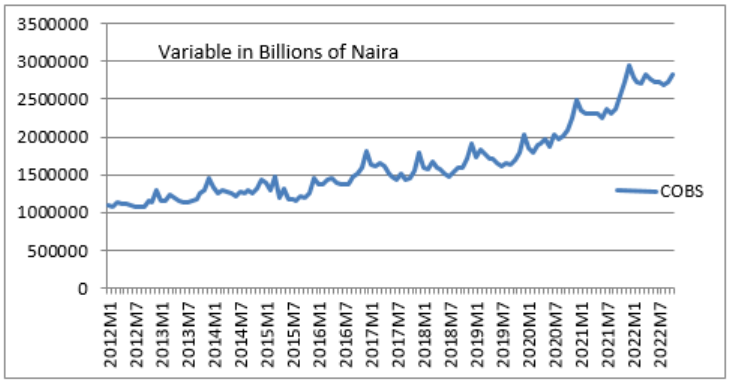
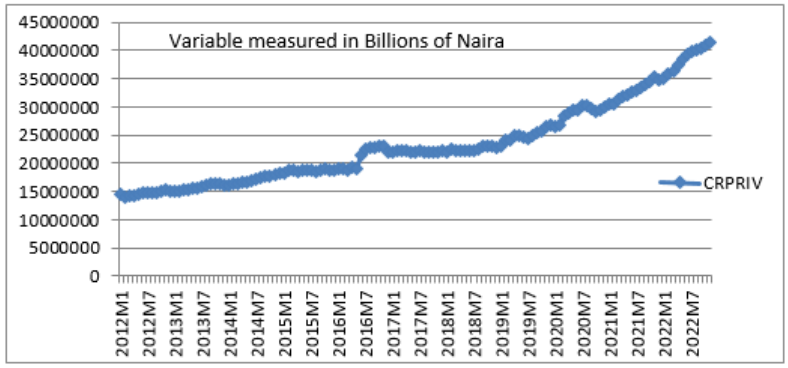


Figure 2
Trend in Credit to the Private Sector
Note: CRPRIV – credit to the private sector



Most previous studies in Nigeria focused on the impact of e-payment channels on the performance of commercial banks (Mustapha, 2018), while some examined the impact of these channels on economic growth (Chukwunulu, 2019). This study is therefore a departure from such existing studies.

Literature Review

Theoretical Framework

The theoretical foundation that guided this paper is the transactions cost innovative theory. The transactions cost innovation theory was pioneered by Kombe and Wafula (2015) and the theory emphasized that the main essence of financial innovation is to reduce the cost of transaction. The theory contends that financial innovation is a fall out of the development in technology that has reduced the cost of transaction. It observed that the reduction in transaction cost has the potential to stimulate financial innovation and, hence and improvement in financial service. This theory is also relevant as the deployment of the internet can drastically reduce the transaction costs of a firm since it enables efficient coordination, use and management of information. For instance, the use of mobile banking, agency banking and internet banking has the tendency to raise bank profitability and thus their ability to extend credit. The significant relationship between efficiency and profitability of banks has been observed by Mendonc, Souza, Carvalho, Benedicto, et al. (2020). If credit to the private sector is enhanced owing to the continuous use of financial innovations, monetary policy management is affected because the liquidity build-up in the economy arising from such credit extension could be inflationary. This is more so in a developing country like Nigeria where the absorptive capacity is low such that rise in money supply usually ends up in raising prices.

Empirical Evidences from Nigeria

The impact of e-payment channels on the economy has received research attentions across different countries. This is because in recent times, e-payment channels have revolutionized the payment system and has brought dynamism in monetary policy management. In Nigeria recent studies have investigated different areas that e-payment channels have had an influence. Findings by Nkem and Akujinma (2017) indicated that, while ATM and POS had negative impact on bank efficiency, mobile banking and internet influenced it positively. Akani and Anyike (2018) revealed that POS, ATM and electronic fund transfer impacted on return on equity positively, but mobile payment impacted on it negatively. Also, while POS, ATM and electronic fund transfer had negative impact on liquidity of commercial banks, the impact of mobile payment was positive. The positive impact of e-payment channels on bank performance find further empirical support in Mustapha (2018) which revealed that the introduction of electronic payment technologies improved bank performance within the study period. However, with respect to economic growth, Chukwunulu (2019) proved that the use of e-payment channels such as ATM, POS, internet and mobile banking had positive impact on economic growth. In terms of asset base

of banks, Frank and Binaebi (2019) revealed that ATM, internet banking transactions and mobile banking transactions had a positive link with the asset base of banks, while the impact of POS transactions was negative. Concentrating on sectoral output, Ogunsakin and Alabi (2020) observed that both the POS and ATM had positive impact on sectoral output. However, Mohammed, Ibrahim, and Muritala (2022) indicated that POS transactions, mobile payment and internet payment had a positive impact on return on assets of commercial banks which finds support in earlier study by Frank and Binaebi (2019).

Empirical Evidences from Other Countries

In a similar respect, some empirical studies outside Nigeria have been carried out to investigate the impact of e-payment channels on different areas of the economy. In a study for Turkey, Gündoğdu and Taşkin (2017) revealed that except credit cards which had positive impact on Turkish banking system, other e-payment channels used in the study such as telephone banking, online banking and credit cards did not have positive impact. Bara and LeRoux (2018), in a study for Zimbabwe, found that financial innovation technologies influenced the activities of banks with respect to service delivery, risk management and credit extension. In Kenya, Mutinda, Jagongo, and Kenyanya (2018) found that the use of internet banking, mobile phone banking and ATMs impacted positively on the financial performance. In a panel study for the Maghreb countries, Djaballah (2020) revealed that ATMs and mobile money influenced money supply positively. In support of the positive impact of e-payment channels on financial performance, Awwad (2021) in a study for Palestine observed that electronic payment methods impacted on the bank's return on assets and equity indicators. This further found support in a study for Indonesia by Rahayu, Mariska, and Garantjang (2022) which revealed that the use of e-payment channels impacted positively on financial performance and bank size.

Methodology

Pre-diagnostic tests were carried out to examine the behaviour of the variables used in the study. The first of these tests is the descriptive analysis followed by a test for the stationarity of the series carried out to determine the order of integration of the series. Stationarity test was conducted using both the augmented Dickey Fuller (ADF) and the Phillip Perron (PP) tests. After examining the order of integration of the series and having ascertained that the series are integrated of order one, i.e I(1), the study investigated the long-run relationship (cointegration) among the series using the Johansen co-integration test. Since the series exhibited none cointegration, the study investigated only the short-run relationship using the unrestricted vector autocorrelation (VAR) and from this, both the impulse response function and the variance decomposition were estimated. Before applying the VAR model, the study examined the optimal lag length as suggested by the various information criteria. This test is supported by a test for VAR lag exclusion which is adopted to confirm the optimal lag selected. The stability of the VAR was also tested using the inverse roots of autoregressive characteristic polynomial.

The VAR Model

This study developed a seven-variable VAR model comprising of three e-payment channels, namely: Electronic Bills Payment, NIBSS Instant Payment and Point of Sale. Also, the model contains two monetary policy variables, notably the monetary policy rate which is the benchmark rate that influences other interest rates and broad money supply which serves as an intermediate target. Other variables are credit to the private sector and bank reserves. The VAR specification that guided the study is formulated as follows:

$$x_t = \alpha + \sum_{i-1}^{k} \lambda x_{t-1} + \epsilon_t \tag{1}$$

Where: x_t = (7xl) vector of endogenous variables, α = (7xl) vector of intercept terms, λ_t = fixed coefficient matrix, ϵ_t = 7–dimensional white noise and k = lag order. The structural unrestricted VAR model is specified in a matrix form as follows:

$$\begin{bmatrix} LCRPRIV_t \\ LEBP_t \\ LNIP_t \\ LPOS_t \\ LBRESERV_t \\ LM2_t \\ MPR_t \end{bmatrix} = \begin{bmatrix} \alpha_1 \\ \alpha_2 \\ \alpha_3 \\ \alpha_4 \\ \alpha_5 \\ \alpha_6 \\ \alpha_7 \end{bmatrix} + \begin{bmatrix} \lambda_{1,1} & \lambda_{1,2} & \lambda_{1,3} & \lambda_{1,4} & \lambda_{1,5} & \lambda_{1,6} & \lambda_{1,7} \\ \lambda_{2,1} & \lambda_{2,2} & \lambda_{2,3} & \lambda_{2,4} & \lambda_{2,5} & \lambda_{2,6} & \lambda_{2,7} \\ \lambda_{3,1} & \lambda_{3,2} & \lambda_{3,3} & \lambda_{3,4} & \lambda_{3,5} & \lambda_{3,6} & \lambda_{3,7} \\ \lambda_{4,1} & \lambda_{4,2} & \lambda_{4,3} & \lambda_{4,4} & \lambda_{4,5} & \lambda_{4,6} & \lambda_{4,7} \\ \lambda_{5,1} & \lambda_{5,2} & \lambda_{5,3} & \lambda_{5,4} & \lambda_{5,5} & \lambda_{5,6} & \lambda_{5,7} \\ \lambda_{6,1} & \lambda_{6,2} & \lambda_{6,3} & \lambda_{6,4} & \lambda_{6,5} & \lambda_{6,6} & \lambda_{6,7} \\ \lambda_{7,1} & \lambda_{7,2} & \lambda_{7,3} & \lambda_{7,4} & \lambda_{7,5} & \lambda_{7,6} & \lambda_{7,7} \end{bmatrix} \begin{bmatrix} LCRPRIV_{t-1} \\ LEBP_{t-1} \\ LNIP_{t-1} \\ LPOS_{t-1} \\ LBRESERV_{t-1} \\ LM2_{t-1} \\ MPR_{t-1} \end{bmatrix} + \begin{bmatrix} \mu^{LCRPRIV_t} \\ \mu^{LEBP_t} \\ \mu^{LNIP_t} \\ \mu^{LPOS_t} \\ \mu^{LBRESERV_{t1}} \\ \mu^{LM2_t} \\ \mu^{MPR_t} \end{bmatrix} \tag{2}$$

Where: α_i = fixed intercept terms, λ_t = regression coefficients, L denotes log and μ_t = error term

Data

In order to examine the response of private sector credit to shocks in e-payment systems, the study used monthly data that covers the period from 2012M12 to 2022M12. While data availability informed the choice of the study period, the study encountered missing values in some months. Apart from the MPR, other variables are in log form.

Table 2
Variable Definition and Measurement

Variable	Abbreviation	Measurement	Source
Credit to private sector	CRPRIV	Billions of Naira	CBN Statistical Bulletin
Electronic Bills Payment	EBP	Volume	NIBSS
NIBSS Instant Payment	NIP	Volume	NIBSS
Point of Sale	POS	Volume	NIBSS
Bank Reserve	BRESERV	Billions of Naira	CBN Statistical Bulletin
Broad Money Supply	M2	Billions of Naira	CBN Statistical Bulletin
Monetary Policy Rate	MPR	Percentage	CBN Statistical Bulletin

Data Analysis and Results

This study determines the association between electronic bills payment, NIBSS instant payment, point of sale, monetary policy rate, broad money supply, bank reserves and credit to the private sector in Nigeria.

Descriptive Statistics

The results of descriptive statistics in Table 3 indicate that in each of the series, both the mean and the median are very close. This proves that the series are symmetric. It is also found that the variable with the highest mean is MPR with a mean value of 12.75 and a standard deviation of 1.08. However, the variable with the least mean is LEBP with a mean value of 2.01 and a standard deviation of 1.77. LPOS had the highest range comparatively within the study period which shows that it experienced more volatility relative to others. Among the e-payment channels, it is found the LNIP has the highest mean value which implies that the use of this channel was more intense compared to other channels within the study period.

Table 3
Results of Descriptive Statistics

	LCRPRIV	LEBP	LNIP	LPOS	LBRESERV	LM2	MPR
Mean	7.346384	2.012543	4.240888	4.007540	6.644393	7.376230	12.75210
Median	7.347847	1.930404	4.963863	4.963863	6.614373	7.352861	12.50000
Maximum	7.607619	5.051149	7.050017	7.050017	7.102085	7.693127	16.50000
Minimum	7.146463	0.000000	1.613011	1.206906	6.039323	7.119051	11.00000
Std. Dev.	0.128162	1.774532	2.051761	2.284452	0.275860	0.164668	1.083141
Skewness	0.268779	0.561654	0.022132	0.015383	-0.071531	0.270025	0.602035
Kurtosis	2.024840	2.190456	1.174278	1.132090	2.382937	2.031546	2.862990
Jarque-Bera	6.147868	9.506033	16.53713	17.30476	1.989451	6.096562	7.281594
Probability	0.046239	0.008626	0.000256	0.000175	0.369825	0.047440	0.026231
Sum	874.2197	239.4926	504.6657	476.8973	790.6827	877.7714	1517.500
Sum Sq. Dev.	1.938209	371.5778	496.7472	615.8088	8.979658	3.199643	138.4370
Observations	119	119	119	119	119	119	119

Unit Root Test

The test for stationarity which was carried out to ascertain the order of integration of the series was conducted using the augmented Dickey-Fuller (ADF) and the Phillip-Perron

(PP) tests. In Table 4, results of the stationarity test revealed that at level, none of the series achieved stationarity under both tests. However, when the series were first differenced, they became stationary. That is, after first difference, the series became I(1). This result implies that the study can investigate the cointegrating relationship among the series using the Johansen cointegration test.

Having examined the order of integration of the series, the study investigated the optimal lag that guided the estimation of the VAR model. Optimal lag order selection is necessary because if lag is properly selected, it will ensure that the error terms follow a white noise process. Maddala and Kim (1998) noted that the number of lags included in a VAR model plays a sensitive role in the power properties of the unit roots tests. In the selection of the optimal lag order, this study was guided by the results of some information criteria used in literature such as the Hannan-Quinn information criterion (HQ), the Schwarz information criterion (SIC) and the Akaike information criterion (AIC). Results reveal that both HQ and SIC favoured lag 1, implying that the optimal lag chosen by the study for the VAR estimation is lag 1. In order to further provide support for the choice of the lag length, the study carried out the VAR lag exclusion test. The result of the VAR lag exclusion test and the finding indicates that at the 5% level, the probability value of the joint model variables is statistically significant at both lag 1 and lag 2. However, the study chose lag 1 in order not to over-parametize the model.

Table 4
Results of Unit Root

	ADF		PP	
Variables	**Level**	**First Difference**	**Level**	**First Difference**
LCRPRIV	1.4268 (0.999)	-10.708 (0.000)	1.3599 (0.998)	-10.7096 (0.000)
LEBP	-1.18366 (0.6799)	-10.8805(0.000)	-1.1707 (0.685)	-10.8805 (0.000)
LNIP	-1.6510 (0.453)	-11.2941(0.000)	-1.7034 (0.427)	-11.2944(0.000)
LPOS	-1.4308(0.565)	-11.305(0.000)	-1.4734(0.544)	-11.305 (0.000)
LBRESERV	-0.7728(0.823)	-11.3798(0.000)	-0.7728(0.823)	-11.3798(0.000)
LM2	0.4354 (0.983)	-11.9700(0.000)	2.22463(0.999)	-14.056 (0.000)
MPR	-0.5860(0.868)	-5.9523 (0.000)	-1.4907(0.535)	-11.433 (0.000)

As a way to ensure that the VAR model produces reliable results, the study conducted a stability test using the inverse roots of the autoregressive characteristic polynomial. The stability or stationarity of the VAR model is necessary because it entails that shocks arising in the system are not permanent as they vanish after a period of time. In testing the stability of the VAR model, the study is guided by the condition that the roots of the polynomial characteristic of the matrix equation should be within the unit circle. Results confirm the stationarity of the AR process as the inverse roots of the equation are inside the unit circle.

Cointegration Test

As aforementioned, this study used the Johansen cointegration test to examine the cointegrating relationship among the series on account of the stationarity test which revealed that the series are integrated of order one. The results of both the trace and maximum

eigenvalue tests in Tables 5 and 6 indicated that the probability values are higher than 5%, implying that there is no cointegration or long-term relationship among the series.

Table 5
Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.3663	132.6317	125.6154	0.011
At most 1	0.2404	83.3573	95.7536	0.261
At most 2	0.1871	53.6488	69.8188	0.476
At most 3	0.1507	31.2747	47.8561	0.651
At most 4	0.0686	13.6312	29.7970	0.860
At most 5	0.0405	5.9485	15.4947	0.701
At most 6	0.0135	1.4787	3.8414	0.224

Table 6
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.3663	49.2744	46.2314	0.022
At most 1	0.2404	29.7084	40.0775	0.443
At most 2	0.1871	22.3741	33.8768	0.578
At most 3	0.1507	17.6435	27.5843	0.525
At most 4	0.0666	7.6882	21.1316	0.922
At most 5	0.0405	4.4697	14.2646	0.806
At most 6	0.0135	1.4787	3.8414	0.224

Result of Impulse Response Function

Having ascertained that the series are not cointegrated, the study examined the response of bank credit to the private sector to shocks in e-payment channels and other control variables using the impulse response function and the variance decomposition. Results of the impulse response function revealed that credit to the private sector responded positively to shocks in electronic bills payment in all the periods under review. Also, it responded positively to shocks in point of sale in all the periods. However, after a positive response in period one, its response to shocks in NIBSS instant payment was negative all through the periods. The foregoing results indicate that rise in the use of electronic bills payment and POS channels encouraged the extension of credit to the private sector. The study contends that the channel through which this can be possible is through an increase in bank reserves as finding revealed that bank reserves exhibited a positive response to shocks in POS. This can further be explained by the positive response of M2 to shocks in both EBP and NIP.

The study equally found that credit to the private sector responded positively to shocks in bank reserves up to period two and thereafter the response became negative. The positive response confirms the earlier stand of the study that reserve build up encourages more credit to the private sector since credit creation is a function of banks' reserve position. The response of credit to the private sector to shocks in broad money supply is positive in all the periods which is in line with apriori expectation. The study also observed

that credit to the private sector responded positively to shocks in MPR up to period four and thereafter became negative all through the periods. The positive response is in line with apriori expectation because, as rise in MPR leads to rise in the lending rates, banks will be more willing to extend credit to the private sector to take advantage of the situation. In another respect, the study found that MPR responded positively to shocks in EBP and POS in all the periods, while responding negatively to shocks in NIP in all the periods. The study is of the opinion that the reason for the positive response of MPR to shocks in the two e-payment channels could be that the monetary authorities reacted to the reserve build-up occasioned by the rise in the use of these channels by raising the MPR. Since MPR is the benchmark rate that pulls other interest rates, raising it is anticipated to drain off liquidity in the banking system.

Result of Variance Decomposition

The variance decomposition results reveal that other than shocks to itself which was 100% in the first period, shocks to EBP explained about 0.95% of shocks to credit to the private sector in the second period, which rose continuously up to the last period. Shocks to private sector credit arising from shocks to NIP also rose from period one through the last period. However, shocks to private sector credit arising from shocks to POS continuously rose from period one and after period six, it began to descend. While shocks to private sector credit arising from shocks to M2 and MPR rose continuously, shocks arising from bank reserves descended after period five.

Conclusion

This study examined the response of credit to the private sector to the rise in the use of e-payment channels in Nigeria with monthly data that spanned the period from 2012M12 to 2022M12. The study found that credit to the private sector responded positively to shocks in EBP and POS in all the periods under review. However, it responded positively to shocks to NIP only in period one but thereafter responded negatively in other periods. Findings equally revealed that bank reserves responded positively to shocks in POS, while M2 responded positively to shocks in EBP and NIP. In another vein, MPR responded positively to shocks in EBP and POS in all the periods.

Implications

These findings have implications for monetary policy in Nigeria. First, the increasing use of e-payment channels raises the reserve position of deposit money banks and broad money supply which translates to credit extension to the private sector. Consequently, apart from the traditional monetary tools used to influence credit to the private sector, improving the e-payment channels is another way to boost bank credit extension to the private sector. Second, the increasing use of the e-payment channels has the tendency to put much pressure on monetary authorities, especially in their fight against inflation. This

is because of the rise in the reserve position of banks as well as rising money supply occasioned by the increasing use of the e-payment channels. One of the negative implications of this situation is that persistent increase in the benchmark rate in order to tame inflationary pressure could raise domestic interest rate which ends up raising the cost of capital. From the foregoing, the study is of the view that improvement in the e-payment channels should be encouraged to improve credit extension to the private sector and, more so as it checkmates the excess currency outside the banking system. However, the monetary authorities should fine-tune their monetary policy kits to accommodate the impact of e-payment channels such that the growing use of these channels does not hamper the achievement of key monetary policy objectives.

Limitations

Apart from its contributions to extant literature, this present study, like every other study id beset with some limitations. One of such limitations is the inability of the study to accommodate the fiscal angle in the analysis. It is on this basis that the study suggests that futures studies should focus on the impact of the e-payment systems on fiscal policy management in Nigeria. This implies that variables such as government expenditure and taxes have to be incorporated in the study.

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