EFFECT OF CRYPTOCURRENCY ON INFLATION IN NIGERIA

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Abstract

With the iconic move of demonetization, a drastic change is seen in the payment methods of the people. Now, the government wants its citizens to adopt new methods, thus, Nigeria has also triggered its next move to usher itself into the era. Therefore the aim of this paper is to examine the effect of
cryptocurrency on inflation in Nigeria. The paper applied Vector Auto-regression (VAR) to analyze multivariate time series data for the period of 2009Q1 to 2021Q4. The finding from impulse response shows that, cryptocurrency account for a positive response to inflation in the first three periods and a negative response in the remaining periods, while money supply account a positive response throughout the periods. However, the results from variance decomposition show that cryptocurrency account for little variation in the inflation throughout the periods but money supply account for high variations of the inflation. Based on the findings, the paper recommends that, in order to reduce the level of inflation in the country, money supply should be curtailed by the monetary authority.

**Keywords:** Cryptocurrency, Inflation, Money supply, Vector Auto-regression

**Citation:**

**INTRODUCTION**

Cryptocurrency has recently gained considerable interest from investors, central banks and governments worldwide. There are numerous reasons for this intensified attention. For example, Japan and South Korea have recognized Bitcoin as a legal method of payment Bloomberg, (2017a) Coin telegraph, (2017). Some central banks are exploring the possibility of using cryptocurrency Bloomberg, (2017c). Moreover, a large number of companies and banks created the Enterprise Ethereum Alliance1 in order to customize Ethereum for industry players Forbes, (2017).

Finally, the Chicago Mercantile Exchange (CME) started the Bitcoin futures on 18th December 2017 Chicago Mercantile Exchange, (2017). In 2017 the value of cryptocurrencies experienced an exponential growth and their market capitalization substantially
increased. However, the volatility of cryptocurrencies has been very significant with regular daily swings up to 30%.

Bitcoin, the first decentralized cryptocurrency created in 2009 and was documented in Nakamoto (2009), had grown in 2017 to a maximum of about 2,700% price return, and in the same year, some cryptocurrencies had achieved far higher growth than Bitcoin. Some economists, famous investors, and finance professionals warned that rapidly increasing prices of cryptocurrencies could cause the bubble" to burst. In fact, in early 2018, a large sell-off of cryptocurrencies occurred. From January to February 2018, the price of Bitcoin fell 65%, and by the end of the first quarter of 2018, the entire cryptocurrency market fell by 54%, with losses in the market topping500 USD billion.

The decline of the cryptocurrency market was larger than the bursting of the Dot-com bubble in 2002. In November 2018, the total market capitalization for Bitcoin fell below 100 USD billion for the first time since October 2017, and the Bitcoin price fell below 5,000 USD. More recently, the Bitcoin price has partially recovered and, in summer 2019, it traded at levels higher than 10,000 USD. As we can observe from Figure 1, such dynamics have been shared by all types of cryptocurrencies.

Cryptocurrency is the private sector counterpart of government-issued currency (Nakamoto, 2009; Ethereum, 2014; Ripple, 2012) and is issued in divisible units that can be easily transferred in a transaction between two parties. Digital currencies are intrinsically useless electronic tokens that travel through a network of computers. Advances in computer science have allowed for the creation of a decentralized system for transferring these electronic tokens from one person or firm to another. The key innovation of the cryptocurrency system is the creation of a payments system across a network of computers that does not require a trusted third party to update balances and keep track of the ownership of the virtual units. The technology behind the system is called Blockchain.

The characteristics of cryptocurrency are the following ones. The first characteristic relates to the fact that cryptocurrency is not based on a central authority that has private information. On the contrary, it relies on public information, such as computation, from a large number of individual distributed computers and servers connected to each other by the network and not by a recognized authority. Secondly, the issue of-
new currency and operations are validated by the network via complex pre-defined mathematical operations, algorithm defined as proof of work. This kind of network approves pre-defined, encrypted and immutable operations, so history cannot be changed and manipulated.

The last characteristic refers to the easiness of payment and management. Cryptocurrency is by definition computer-based, and when linked to a portfolio the only requirement to transfer value or pay bills is an internet connection. Most of previous studies have analysed cryptocurrency empirically. For example, Hencic and Gourieroux (2014) applied a non-causal autoregressive model to detect the presence of bubbles in the Bitcoin/USD exchange rate.

Sapuric and Kokkinaki (2014) measured the volatility of the Bitcoin exchange rate against six major currencies. More recently, Catania et al. (2018) have analysed and predicted cryptocurrency volatility, whereas Catania et al. (2019) predicted the full distribution of cryptocurrency. Both Bianchi (2018) and Giudici and Pagnottoni (2019) have investigated the structural relationships between cryptocurrency and other macroeconomic as well as financial time-series.

This study deviates from the previous studies by exploring the impact of cryptocurrency on inflation with special focus in Nigeria.

LITERATURE REVIEW

With the current issues of digital economy which affect all sectors of the economic in the world, money sector is not left behind as in terms of empirical literature for example, Sinta et al (2022) used monthly data to examined the risk management process in cryptocurrency digital asset investment in Indonesia by using five (5) cryptocurrency coins namely Bitcoin, Ethereum, Ripple, Bitcoin Cash, and Litecoin. The results revealed that digital crypto asset investment instrument has the largest market cap in Indonesia. But Smales (2021) examined the association of Bitcoin, and other cryptocurrency, returns with changes in inflation for the period of January 2013 to September 2021 in America.

The results showed that the returns of cryptocurrency, and gold, are positively related to changes in US inflation expectations. This relationship holds after controlling for uncertainty in economic policy and financial markets. However, unlike with gold, the identified relationship is only significant for short-term inflation expectations,
and when market-implied expectations or PCE are below 2%. Our results suggest that cryptocurrencies could offer an alternative to gold in hedging inflation only in limited circumstances.

Using Vector Autoregression (VAR) model, Choi and Shin (2021) investigated the relationship among inflation, uncertainty, and Bitcoin and gold prices. The results revealed that, Bitcoin appreciates against inflation shocks, confirming its inflation-hedging property claimed by investors. However, unlike gold, Bitcoin prices decline in response to financial uncertainty shocks, rejecting the safe-haven quality. Interestingly, Bitcoin prices do not decrease after policy uncertainty shocks, partly consistent with the notion of Bitcoin’s independence from government authorities. they also found an interesting asymmetry in the drivers of Bitcoin price dynamics between the bullish and bearish market.

The main findings hold with or without the COVID-19 pandemic episode. Kusumastuty et al (2019) examined the influence of monetary variables and cryptocurrency price by using Vector Autoregression (VAR) model to analyze multivariate time series data. The data used in this study is time series data from January 2014 to December 2017. The findings indicated that there is no significant influence between inflation and the cryptocurrency prices in the first period. However, the results in the second period, decomposition variant had a significant relationship and experienced a fairly rapid increase of 1.59 per cent and continued to increase until the tenth period.

The interest rate variable on the price of cryptocurrency has the result of the Variant Decomposition in the first period does not have a significant relationship, while in the second period experienced a significant incline from 6.12 per cent and continued to rise until the tenth period. Das et al (2019) examined the hedging and safe-haven properties of Bitcoin against crude oil implied volatility and structural shocks using a dummy variable GARCH and quantile regression model and they concluded that Bitcoin is not the superior asset over others to hedge oil related uncertainties. Besides, hedging capacity of different assets is conditional upon the nature of oil risks and market situation. Thus, investors may prefer different investment instruments to hedge downside risks in different economic situations and market states. Nguyen et al (2019) examined the asymmetric impacts of monetary policies on cryptocurrency returns during monetary tightening versus-
monetary easing regimes. The results found significant responses of four major cryptocurrencies including Bitcoin to Chinese tightening monetary policies; however, U.S. monetary policies do not significantly affect cryptocurrency returns.

Meynkhard (2019) analyzed the effect that halving has on the fair market value of bitcoins. Results show that reducing remuneration by half every four years leads to an increased market value of the cryptocurrency. This relationship is clearly illustrated by the Kendall rank correlation method. The results of the study can have a significant impact on the fundamental assessment of bitcoin and can also enable investors to assess any of the existing and operating cryptocurrencies according to this method. While, Andrikopoulos et al (2018) used Cryptocurrencies meet inflation theory to examine the relationship between the returns and volatility of cryptocurrencies by using Bitcoin, Ethereum, Litecoin and Ripple as the four most popular cryptocurrencies in the market and analyses the relationship between their returns and volatility through the application of GARCH models.

The results suggest that Bitcoin and Litecoin behave as a currency subject to inflation showing a causal relationship from returns to volatility. In contrast, the results for Ethereum and Ripple show that the causation runs from volatility to returns. Moreover, the volatility of each cryptocurrency is affected by the other three cryptocurrency returns. A panel cointegration analysis shows evidence of a strong cointegration relationship in the cryptocurrency prices. Also, Astuti and Fazira (2018) examined the effect of cryptocurrency on exchange rate of China for the monthly period of November 2012 to July 2017 by using autoregressive distributed lag (ARDL) model.

The estimation results show that Bitcoin price volatility significantly affect the exchange rate in the long run. The higher of Bitcoin price volatility implies higher risk. Negative sign in the coefficient suggests that when Bitcoin’s price volatility increases, investors tend to switch their investments on real currency will be preferable so that the exchange rate will be appreciated. Jeong and Kevin (2018) discussed how cryptocurrency is able to fulfill the three fundamental functions of money: medium of exchange, unit of account, and store of value.

The paper then provided a money market model that incorporates cryptocurrency into the total money demand and total money supply,
and examined the cases when governmental organizations issue cryptocurrency, and secondly when non-governmental organizations are able to issue cryptocurrency. An IS-LM model showed that a newly introduced cryptocurrency results in an increase in total money supply and a decrease in the interest rates. An MP model further explains how cryptocurrency affects inflation, suggesting that tightening of monetary policies can be used to achieve target interest rates and offset the effects of cryptocurrency.

**METHODOLOGY**

**Sources of Data**

The main source of data for this paper is secondary sources and it is mainly monthly time series data for the period 2011M1 to 2021M12 and the data are Inflation (INF), money supply (MS), exchange rate (EXR) and Monetary Policy rate (MPR) which were sourced from Central Bank of Nigeria Database, while Bitcoin Price (BP) proxy for cryptocurrency was obtained from https://ng.investing.com/crypto/bitcoin.

**Model Specification**

A Vector Auto Regressive (VAR) model of five variables was employed. Sims (1980) developed the VAR model, he notes that, if there is true simultaneity among a set of variables, they should all be treated as an equal footing. There should not be any a priori distinction between endogenous and exogenous variables, Gujarati (2009). Therefore, the generalized form of the Vector Auto Regressive (VAR) is stated below

$$X_t = \alpha + \beta_1 X_{t-1} + \ldots + \beta_p X_{t-p} + \varepsilon_t \quad eqn(1)$$

Where:

- $X_t$ is a $5 \times 1$ vector of jointly determined endogenous variables containing INF, BP, MS, EXCR and MPR
- $\beta_1 \ldots \beta_p$ are $k \times k$ matrices of coefficient that relate lagged values of all the endogenous variables to current values of those variables, $\alpha$ is the vector of constant, and $\varepsilon_t$ is a white noise disturbance. The relationship between inflation and cryptocurrency as well as other monetary policy variables can be specified as follows:
\[ \text{INF} = f(BP, MS, EXR, MPR) \quad \text{eqn}(2) \]

Where

INF = inflation rate  
\( f \) = Functional notation  
BP = Bitcoin Price proxy for Cryptocurrency  
MS = Money Supply  
EXR = Official Exchange Rate  
MPR = Monetary Policy Rate

The VAR model estimates each equation with usual OLS method separately (i.e. five equations). More so, the VAR estimates chose the optimal lag length in line with the information provided by the lag selection criteria. This is because including too many lagged terms will consume degrees of freedom, while too few lags will lead to specification error.

**Unit Root Tests**

Before estimation the VAR model, tests for stationarity i.e. unit root tests were conducted on the series to determine the stationarity or otherwise of the variables by using Augmented Dickey-Fuller (ADF) tests. The tests are based on the equations below:

\[ \Delta y_i = \mu + \delta t + \rho y_{i-1} + \sum_{i=1}^{p-1} \pi_i \Delta y_{i-i} + \varepsilon_i \quad \text{eqn}(3) \]

The unit root presence is based on the null hypothesis of a unit root, i.e. whether the parameter \( \rho = 0 \) or otherwise in the three equations above. If equals zero, the series contains a unit root and if it is not, the series is referred to as stationary. In equation (3) the ADF-test with both a constant and time trend is specified. Hence, the hypothesis corresponding to equation (3) to be tested are:

\[ H_0 : \delta = \rho = 0 \quad (\text{The series has a unit root with no time trend.}) \]

\[ H_1 : \delta \neq 0; \ \rho < 0 \quad (\text{The series is stationary with a deterministic trend.}) \]

Cointegration Test:

The Johansen (1988) cointegration tests were used to test the cointegration or otherwise among the variable under study. This test is-
used to identify a cointegration relationship among the variables. Within the Johansen multivariate co-integrating framework, the following system is estimated:

$$\Delta Z_t = \mu + \Gamma_1 \Delta Z_{t-1} + \ldots + \Gamma_{k-1} \Delta Z_{t-k-1} + \pi Z_{t-1} + \varepsilon_t \quad eqn(4)$$

Where, $\Delta$ is the first difference operator, $Z$ denotes a vector of variables, $\varepsilon_t$ stochastic error term with zero mean and constant variances, $\mu$ is a drift parameter, and $\Pi$ is a $(p \times p)$ matrix of the form $\Pi = \alpha \beta$, where $\alpha$ and $\beta$ are both $(p \times r)$ matrices of full rank, with $\beta$ containing the $r$ co-integrating relationships and $\alpha$ carrying the corresponding adjustment coefficients in each of the $k$ vectors. Johansen (1988) suggested two tests statistics to determine the cointegration rank. The first of these is known as the trace statistic:

$$N \left[ \text{trace} \left( \frac{r_0}{k} \right) \right] = T \sum_{i=0,r+1}^{k} \ln (1 - \lambda_i) \quad eqn(5)$$

Where, $\lambda_i$ are the estimated Eigen values $< 1$, $< 2$, $< 3$, $\ldots < k$ and $r_0$ ranges from zero to $k-1$ depending upon the stage in the sequence. This is the relevant test statistics for the null hypothesis $r \leq r_0$ against the alternative $r \geq r_0 + 1$.

The second test statistic is the maximum eigen value test known as $\lambda_{\text{max}}$; we denote it as $\lambda_{\text{max}} (r_0)$. This is closely related to the trace statistic, but arises from changing the alternative hypothesis from $r \geq r_0 + 1$ to $r = r_0 + 1$. The idea is trying to improve the power of the test by limiting the alternative to a co-integration rank which is just by one more than the null hypothesis. The $\lambda_{\text{max}}$ test statistic is:

$$\lambda_{\text{max}} (r_0) = - T \ln \left(1 - \lambda_i\right) \text{ for } i = r_0 + 1 \quad eqn(6)$$

The null hypothesis is that there are $r$ co-integrating vectors, against the alternative of $r+1$ co-integrating vectors. Johansen and Juselius (1990) indicated that the trace test might lack power relative to the maximum eigenvalue test. Based on the power of the test, the maximum eigenvalue test statistic is often preferred.

RESULTS AND DISCUSSION

Unit Root Test

The starting point in time series data is testing the stationary or otherwise of the variables to avoid spurious regression results.
Table 1 presents the ADF unit root test both at level and first difference with trend and intercept. The result revealed that all the time series data were not stationary at level at 5% and 1% level of significant but were stationary at first difference at 1% level of significant. This paved way to test the cointegration test due to the fact that the variables under study are integrated of order one i.e. I(1).

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF Unit Root Test at Level</th>
<th>ADF Unit Root Test at First Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>t-Statistic</td>
<td>Prob.*</td>
<td>t-Statistic</td>
</tr>
<tr>
<td>INF</td>
<td>-2.429554</td>
<td>0.3627</td>
</tr>
<tr>
<td>BP</td>
<td>-0.780004</td>
<td>0.9640</td>
</tr>
<tr>
<td>MS</td>
<td>-2.781905</td>
<td>0.2067</td>
</tr>
<tr>
<td>EXR</td>
<td>-2.707061</td>
<td>0.2356</td>
</tr>
<tr>
<td>MPR</td>
<td>-3.321069</td>
<td>0.0674</td>
</tr>
</tbody>
</table>

Source: Authors’ computation 2022

Note: * indicates statistically significant at 1% level of significant

Table 2 Johansen Cointegration Test

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Trace</th>
<th>0.05 Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0.153514</td>
<td>46.60948</td>
<td>69.81889</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.090677</td>
<td>25.11011</td>
<td>47.85613</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.064359</td>
<td>12.84806</td>
<td>29.79707</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.032509</td>
<td>4.266569</td>
<td>15.49471</td>
</tr>
<tr>
<td>At most 4</td>
<td>2.50E-05</td>
<td>0.003230</td>
<td>3.841466</td>
</tr>
</tbody>
</table>

Since the series were stationary at order one the next is to examine the cointegration relationship among the variables. Therefore the Johansen cointegration tests were reported in table 2. Based on the results in table 2, both trace test and maximum eigenvalue test showed absent of cointegration among the variables under study. This implies that, there is no long run relationship among the variables which paved way to use the standard VAR model rather than Vector Error Correction model.

Table 2 Johansen Cointegration Test

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Max-Eigen</th>
<th>0.05 Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0.153514</td>
<td>21.49936</td>
<td>33.87687</td>
</tr>
</tbody>
</table>
Mohammed Sani, B., Hayewa, S. Y., Shuaibu, H., & Bunu, N. M.  
Effect of Cryptocurrency on Inflation in Nigeria.  

At most 1: 0.090677  12.26206  27.58434  0.9217
At most 2: 0.064359  8.581490  21.13162  0.8646
At most 3: 0.032509  4.263339  14.26460  0.8306
At most 4: 2.50E-05  0.003230  3.841466  0.9529

Source: Authors’ computation 2022

**VAR Model**

The important thing in estimation of the Vector Autoregressive (VAR) model is the lag selection criteria and its stability before proceed to estimate the impulse response function and variance decomposition as the estimation of the coefficients of the VAR models are difficult to interpret since they totally lack any theoretical background. In order to overcome this criticism, the advocates of VAR models estimate so called impulse response functions and variance decomposition.

Given that all the variables are indicated absent of cointegration which favoured the use of unrestricted VAR. The unrestricted VAR choose the optimal lag length in line with the information provided by the lag order selection criteria in order to avoid specification error. Table 3 presents the lag length selection criteria and the result at 5% level of significant indicates that; three (3) out of five criterions selected lag 3 while two criterions selected lag 1. Based on the result the paper used lag three (3) for the whole estimations.

**Table 3. Lag Selection Criteria**

<table>
<thead>
<tr>
<th>Lag</th>
<th>LogL</th>
<th>LR</th>
<th>FPE</th>
<th>AIC</th>
<th>SC</th>
<th>HQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>-4624.1</td>
<td>NA</td>
<td>1.78e+25</td>
<td>72.32965</td>
<td>72.44105</td>
<td>72.37491</td>
</tr>
<tr>
<td>1</td>
<td>-3799.09</td>
<td>1572.667</td>
<td>6.63e+19</td>
<td>59.82956</td>
<td>60.49801*</td>
<td>60.10115*</td>
</tr>
<tr>
<td>2</td>
<td>-3763.11</td>
<td>65.77914</td>
<td>5.59e+19</td>
<td>59.65797</td>
<td>60.88345</td>
<td>60.15589</td>
</tr>
<tr>
<td>3</td>
<td>-3731.64</td>
<td>55.07858</td>
<td>5.08e+19</td>
<td>59.55682</td>
<td>61.33934</td>
<td>60.28107</td>
</tr>
<tr>
<td>4</td>
<td>-3716.85</td>
<td>24.72845</td>
<td>6.01e+19</td>
<td>59.71634</td>
<td>62.05590</td>
<td>60.66692</td>
</tr>
</tbody>
</table>

Source: Authors’ computation 2022

Note: * indicates the agreed lag by each criterion
VAR Stability Conditional Check

Before estimation of the impulse response and variance decomposition the stability of the VAR model has to be checked to avoid bias estimation. Table 4 and figure 1 present the VAR stability results and the results indicated that the VAR model is stable as no root lies outside the unit circle which paved way to further estimate the impulse response function and variance decomposition.

![Inverse Roots of AR Characteristic Polynomial](image)

Source: Authors’ computation 2022

Note: No root lies outside the unit circle. VAR satisfies the stability condition.

Table 4. VAR Stability

<table>
<thead>
<tr>
<th>Root</th>
<th>Modulus</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.998715</td>
<td>0.998715</td>
</tr>
<tr>
<td>0.958605</td>
<td>0.958605</td>
</tr>
<tr>
<td>0.943250</td>
<td>0.943250</td>
</tr>
<tr>
<td>0.891213</td>
<td>0.891213</td>
</tr>
<tr>
<td>-0.018580 - 0.659294i</td>
<td>0.659555</td>
</tr>
<tr>
<td>-0.018580 + 0.659294i</td>
<td>0.659555</td>
</tr>
<tr>
<td>0.584314 - 0.225404i</td>
<td>0.626282</td>
</tr>
<tr>
<td>0.584314 + 0.225404i</td>
<td>0.626282</td>
</tr>
<tr>
<td>0.622326</td>
<td>0.622326</td>
</tr>
<tr>
<td>-0.552668</td>
<td>0.552668</td>
</tr>
<tr>
<td>0.108645 - 0.453948i</td>
<td>0.466768</td>
</tr>
</tbody>
</table>
0.108645 + 0.453948i
-0.034362 - 0.230010i
-0.034362 + 0.230010i
0.117159

No root lies outside the unit circle.
VAR satisfies the stability condition.

Source: Authors’ computation 2022

Impulse Response Function

Since the VAR is stable, the next is to estimate the impulse response function as it examines the response of the dependant variable in the VAR to shocks in the error terms. Impulse responses trace out the responsiveness of the dependent variables in the VAR to shocks to each of the variables (Brooks 2008). Figure 2 presents the impulse response function based on the results cryptocurrency; money supply and exchange rate have positive shocks on inflation in Nigeria, while MPR has a negative shock on inflation throughout the period.

Figure 2: Response to Cholesky One S.D (d.f. adjusted) Innovations

Source: Author’s computation 2022
Variance Decomposition

The impulse response functions trace the effects of a shock to one endogenous variable on the other variables in the VAR; while, the variance decomposition provides information about the relative importance of each random innovation in affecting the variables in the VAR. The analysis is employed in order to give more detailed information regarding the variance relations between the selected variables. Based on the objective of this paper, the paper seeks to see the relative importance of the cryptocurrency, money supply, exchange rate and monetary policy rate in affecting inflation within the context of VAR.

Table 5 revealed that exchange rate is the major causes of variation of inflation followed by money supply then MPR while cryptocurrency has little evidence of variation of inflation in Nigeria over the sample period.

<table>
<thead>
<tr>
<th>Period</th>
<th>S.E.</th>
<th>INF</th>
<th>BP</th>
<th>MS</th>
<th>EXR</th>
<th>MPR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.5793</td>
<td>100.00</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>2</td>
<td>0.8685</td>
<td>96.400</td>
<td>0.0001</td>
<td>2.7722</td>
<td>0.0171</td>
<td>0.8098</td>
</tr>
<tr>
<td>3</td>
<td>1.2103</td>
<td>94.878</td>
<td>0.0897</td>
<td>2.6648</td>
<td>0.4594</td>
<td>1.9070</td>
</tr>
<tr>
<td>4</td>
<td>1.4805</td>
<td>93.751</td>
<td>0.2160</td>
<td>2.9713</td>
<td>1.10216</td>
<td>1.9589</td>
</tr>
<tr>
<td>5</td>
<td>1.7243</td>
<td>92.993</td>
<td>0.2234</td>
<td>2.8919</td>
<td>1.9074</td>
<td>1.98317</td>
</tr>
<tr>
<td>6</td>
<td>1.9249</td>
<td>92.097</td>
<td>0.1954</td>
<td>2.9673</td>
<td>2.8593</td>
<td>1.8804</td>
</tr>
<tr>
<td>7</td>
<td>2.0953</td>
<td>91.218</td>
<td>0.1661</td>
<td>2.9812</td>
<td>3.9285</td>
<td>1.7053</td>
</tr>
<tr>
<td>8</td>
<td>2.2360</td>
<td>90.313</td>
<td>0.1491</td>
<td>2.9924</td>
<td>5.0169</td>
<td>1.5282</td>
</tr>
<tr>
<td>9</td>
<td>2.3545</td>
<td>89.421</td>
<td>0.1574</td>
<td>3.0027</td>
<td>6.0330</td>
<td>1.3854</td>
</tr>
<tr>
<td>10</td>
<td>2.4539</td>
<td>88.564</td>
<td>0.1981</td>
<td>3.0389</td>
<td>6.9224</td>
<td>1.2758</td>
</tr>
</tbody>
</table>

Source: Authors’ computation 2022
CONCLUSION AND RECOMMENDATIONS

The paper had examined the effect of cryptocurrency on inflation in Nigeria by using Vector Auto-regression (VAR) model for the period of 2011M1 to 2021M12. The finding from impulse response shows that, cryptocurrency, Money Supply and exchange rate account for a positive response to inflation throughout the periods, while monetary policy rate account a negative response throughout the periods. However, the results from variance decomposition show that cryptocurrency account for little variation in the inflation throughout the periods but exchange rate and money supply account for high variations of the inflation.

Based on the findings, the paper recommends that, in order to reduce the level of inflation in the country, money supply should be curtailed. While Monetary policy rate should be increased by the monetary authority.

REFERENCES


