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Transmission mechanisms of oil price shock to inflation in Nigeria

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ABSTRACT

This study focused on analyzing the transmission mechanism of oil price shocks to inflation in Nigeria, using data from 1990 to 2024. It employed both the dynamic ordinary least squares (DOLS) estimation and the vector autoregression (VAR) model. The findings from the DOLS confirmed that oil price shocks directly influenced inflation in Nigeria. Additionally, the results indicated that exchange rate volatility, money supply, and fiscal balance also directly affected inflation. The impulse response function from the VAR model showed that inflation responded positively to shocks in oil prices. Furthermore, fiscal balance and money supply responded positively to oil price shocks, although the effects were decomposed over the long term. It was observed that inflation responded positively to shocks in broad money supply and fiscal balance during the study period. These findings reflect the presence of petro-monetary and petro-fiscal transmission mechanisms of oil price shocks to inflation in Nigeria. The study concludes that oil price shocks impact both the monetary and fiscal sectors of the economy, making them essential considerations in monetary and fiscal policy formulation aimed at addressing inflation in Nigeria.

Contribution/ Originality: This paper integrates both the DOLS and VAR techniques to examine how oil price shocks affect the general price level in Nigeria from 1990 to 2024. The study utilizes recent data, and its originality stems from exploring both petro-monetary and petro-fiscal transmission mechanisms of oil price shocks to inflation in Nigeria.

1. INTRODUCTION

Inflation is regarded as a crucial variable in the determination of the macroeconomic stability of a nation; hence, it is taken as a critical factor to be considered in the formulation of sound macroeconomic policies. Consequently, monetary policy decisions are often geared towards achieving price stability since it is believed in the monetarist perspective that inflation is a monetary issue. It follows that growth in the quantity of money in circulation, with output not exceeding the money supply growth, will tend to raise the price level. Therefore, policies to control the quantity of money, such as raising the monetary policy rate, are often deployed by the monetary authorities to forestall stability in domestic prices. In the case of an oil-producing economy, international oil price fluctuations are believed to affect both the monetary and fiscal aggregates, which in turn affect the domestic price level.

Since the oil-producing economy, especially when oil-dependent, relies on oil revenue, shocks in international oil prices will affect government revenue and the money supply, consequently impacting the domestic price level (Effiong, Okijie, & Udofia, 2025). This argument can be supported from two broad perspectives. In a period of rising

oil prices, government oil revenue tends to increase. This upsurge in revenue prompts the government to spend more, which therefore increases the volume of money within the economy. Hence, we see that oil price fluctuations can therefore affect inflation through changes in the level of money supply. This therefore becomes the petro-monetary transmission mechanism (Evans, 2021). Likewise, a decline in oil prices reduces government revenue. This prompts the government to borrow to finance its budget, given that the revenue expected from oil falls below the budget benchmark. Since it is believed that deficit financing is inflationary, the rise in the primary balance will therefore prompt a rise in the general price level. This channel, which this study has developed, is regarded as the petro-fiscal transmission mechanism.

The ongoing reliance of the Nigerian economy on oil is concerning since fluctuations in the price of oil globally will affect other macroeconomic variables, making the macroeconomy susceptible to shocks from the oil price. An economy is vulnerable to shocks from the global oil market if it depends heavily on the export of crude oil, a commodity with highly volatile prices, as its main source of income and foreign exchange. One of the best examples of this was the 2014 oil price shocks, which occurred due to both a decrease in demand and excess supply. The increase in non-OPEC oil production and the surge in US shale oil production were the culprits on the supply side (Okeke, Nwoha, & Duru, 2024). According to Hugo (2015), the decline in oil demand was mostly caused by the slow development of developing nations, particularly China, India, and Brazil. As a result, the price of oil fell by more than half between June 2014 and March 2015. Between May 2014 and March 2015, the price of oil dropped from US$110.9 per barrel to $56.69 per barrel, and in January 2016, it dropped as low as $30.66 per barrel.

Both supply and demand shocks contributed to the oil price shock that occurred in March and April 2020. The oil price war between Saudi Arabia and Russia caused the supply shock, while the COVID-19 pandemic, which led to industrial closures, disruptions in the global supply chain, and the closure of air, sea, and road transportation, caused the demand shock. Brent crude prices dropped from $63.65 and $55.66 per barrel in January and February 2020, respectively, to $32.01 in March and as low as $18.38 in April. As a result, the Nigerian government was forced to review its budget for the fiscal year 2020 and modify the official exchange rate from ₦307/$1 to ₦360/$1 in March 2020.

Oil has a crucial role in determining the value of the Nigerian Naira's foreign exchange rate because it provides the bulk of the country's foreign exchange revenues. Both theory and experience have shown that changes in oil prices are transmitted to exchange rates, particularly for economies that import and export oil. This is especially true considering that oil is a significant export for many nations and a vital energy source for many others. Economists and policymakers have debated the impact and form of oil price pass-through to national currency rates due to recent developments in the global oil market caused by the rise and fall in oil prices (Abubakar, 2019). Additionally, changes in the price of consumer goods as well as the Nigerian currency rate are affected by changes in the price of oil. However, because of fuel subsidies, Nigeria's economy has been largely protected from the direct effects of changes in oil prices. Recently, the removal of fuel subsidies and the floating of the exchange rate are likely to render Nigeria more vulnerable to shocks in crude oil prices. When oil prices rise on the global market, Nigeria is vulnerable to inflationary pressures brought on by increases in the cost of producing imported commodities (Bawa, Abdullahi, Tukur, Barda, & Adams, 2020).

Diverse scholars have explored the link between oil price shocks and inflation in oil-producing economies. We have the case of Anwar, Khan, and Khan (2017) for Pakistan; Al-Eitan and Al-Zeaud (2017) for Jodan; Castro, Jiménez-Rodríguez, Poncela, and Senra (2017) for European economies; Conflitti and Luciani (2017) for US and Euro area; Živkov, Đurašković, and Manić (2019) for Central and Eastern European countries; Bala and Chin (2018) for Algeria, Angola, Libya, and Nigeria; Abatcha (2021) for Nigeria; Evans (2021); Ihugba and Adefabi (2025) for Nigeria; and Effiong, Udonwa, and Udofia (2025) for Nigeria;. These studies were more concerned about how oil prices affect inflation through the money supply and exchange rate channels. Our study considers the money supply channel as

well as the fiscal channel using the fiscal balance. This, therefore, facilitates the analysis of how oil prices can affect inflation through the monetary and fiscal channels.

The objective of this study is therefore to investigate the influence of oil price shocks on inflation in Nigeria from 1990 to 2024, and to ascertain how money supply, fiscal balance, and inflation respond to crude oil price shocks. This research is divided into five main components. The first section provides background issues concerning the nexus between oil prices and inflation, while the literature review is reflected in the second section. The third section presents the research methodology, while the fourth section captures the empirical findings. The last section presents the conclusion and policy recommendations arising from the findings.

2. LITERATURE REVIEW

Oil price shocks involve unpredictable fluctuations in global oil prices caused by geopolitical tensions, supply disruptions, speculative trading, and macroeconomic shocks. In oil-dependent economies, such swings create macroeconomic instability by affecting revenue, foreign exchange earnings, and money supply. These shocks can significantly impact economic stability and growth. Figure 1 displays how the oil price shock transmits to affect the domestic price level.

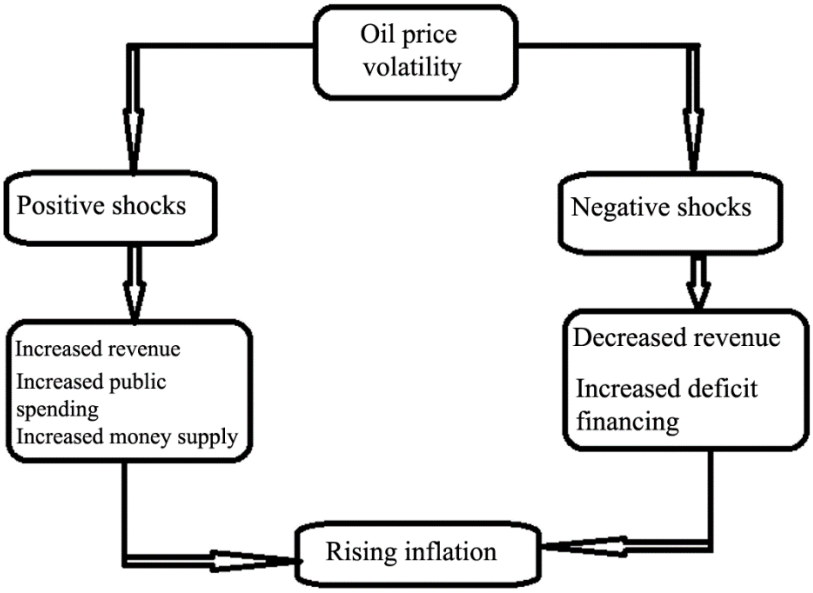

Figure 1. Petro-monetary and petro-fiscal transmission of oil price shock to inflation.

In a period of positive oil price shocks, the government's revenue increases due to the inflow of foreign exchange earnings from oil sales. With more revenue available, public expenditure rises, and the amount of money in circulation increases, thereby exerting inflationary pressure within the economy. This forms the petro-monetary transmission mechanism. During negative shocks, government revenue declines, prompting the government to resort to deficit financing. Since deficit financing is inflationary (see (Aragaw, 2024; Banerjee, Boctor, Mehrotra, & Zampolli, 2022; Beach, 2024)), the economy experiences a rise in the general price level due to the increase in the primary balance. This constitutes the petro-fiscal transmission of monetary policy to inflation.

Empirical studies on the nexus between oil price shocks and inflation have been conducted by diverse scholars across different economies. In Nigeria, Effiong et al. (2025) explored how oil price shocks and exchange rate volatility interact to affect inflation. Using monthly data from January 2010 to December 2023 within the VAR system, the study observed that oil price shocks affect inflation in Nigeria through the exchange rate channel. Consequently, the exchange rate responds to shocks in oil prices, while inflation responds to shocks in the exchange rate. The study recommended boosting non-oil exports to strengthen the domestic exchange rate.

Using the nonlinear ARDL model, Ihugba and Adefabi (2025) investigated the nonlinear connection between oil prices and inflation in Nigeria from 1981 to 2024. While considering reserves, money supply, GDP growth, and monetary policy rates, it examines the asymmetric impacts of both positive and negative oil price shocks on inflation. The findings demonstrate that positive oil price shocks initially have a negative impact on inflation in the short term but eventually produce a significant positive association, especially when lagged periods are included. Conversely, shocks to negative oil prices initially cause inflation to rise but eventually have a deflationary effect.

In their study, Usman and Ugwuoke (2024) sought to understand how the price of oil affected Nigeria's domestic pricing level. The study, which employed quarterly data, was conducted between 1999 and 2023. The study used the non-linear ARDL in data analysis because of oil price asymmetry. According to the study, when crude oil prices are high, so are the costs of manufactured goods, petroleum products, and staple foods. However, because the marginal cost of production decreased, a drop in crude oil prices was accompanied by a sharp drop in domestic prices.

Okeke et al. (2024) examined how Nigeria's inflation and exchange rate were affected by crude oil price shocks from 1990 to 2022. The study employed a multiple regression approach to evaluate the hypotheses. Results indicated a significant negative impact of oil price shocks on Nigeria's inflation rate, with a probability value of 0.0180. Additionally, a probability value of 0.047 showed that oil price shocks negatively and significantly affected Nigerian exchange rates. The persistent depreciation of the Naira against the US dollar in response to sudden, especially negative, fluctuations in oil prices explains the detrimental impact of oil price shocks on the exchange rate.

Muhammad, Shuaibu, Alam, and Salisu (2023) examined how Nigerian inflation is asymmetrically affected by changes in oil prices. The study employed the nonlinear ARDL model and yearly time series data from 1980 to 2020. The empirical evidence from the asymmetric analysis indicates that rising oil prices, interest rates, and the real effective exchange rate tend to reduce inflationary pressures in the nation. However, the decline in interest rates, real effective exchange rates, and oil prices has a larger influence on worsening Nigeria's inflationary pressures. Nonetheless, it was shown that shocks to the oil price that are negative have a greater and more substantial effect on inflation than positive shocks.

To gain a better understanding of how inflation in Nigeria is affected by shocks to projected crude oil prices, Agu and Nyatanga (2021) examined how predicted oil prices influence inflation rates. The study assessed the short- and long-term effects of the variables using a cointegration approach based on ARDL and Bound testing. Results indicate that both in the short and long term, Nigerian inflation is significantly and positively affected by anticipated oil prices.

Evans (2021) investigated the relationship between oil prices and inflation in Nigeria under both higher and lower inflation regimes using a Markov state-switching model. The estimations, which use data from 1970 to 2016, show that the price of oil significantly influences inflation in both the upper and lower regimes. Evidence from the VAR-generated impulse response function shows that shocks to the price of oil cause a significant increase in inflation in the Nigerian economy. Therefore, these findings create a new channel (petro-monetary transmission) that the state's monetary authority must consider when making policy decisions. Despite establishing petro-monetary transmission, the study does not demonstrate how monetary policy may be influenced in the current situation.

Abatcha (2021) used monthly time series data from January 1991 to April 2019 to examine how variations in oil prices affected Nigerian inflation. After the unit root test results showed a combination of the integrated order of the variables' stationarity level, the study used the ARDL model. According to the ARDL results, the price of oil has a long-term positive impact on Nigeria's inflation rate, meaning that when the price of oil rises, so does the country's inflation rate. In line with the long-term outcome, the oil price also exhibits a positive correlation with the rate of inflation in the near term.

Bouchouev (2021) investigates how the link between inflation and oil prices is complicated by frequent government transitions. His research shows that while long-term market expectations impact the financial demand for petroleum futures, short-term price fluctuations impact inflation estimates. This emphasizes how complex the link between inflation and oil prices is. Kilian and Zhou (2020) on the other hand, contest the conventional wisdom that

the price of gasoline or oil has a direct impact on inflation predictions. They demonstrate that shocks to gasoline prices have a major impact on one-year household inflation predictions, especially from 2009 to 2013. The idea that price changes alone are what drive inflation expectations is called into doubt, though, as these shocks only explain 39% of the variation in inflation expectations since 1981.

Bawa et al. (2020) empirical study used data from the first quarter of 1991 to the fourth quarter of 2018 in order to investigate the relationship between Nigeria's oil price and inflation. The study used the NARDL for analysis, and the report showed that while an increase in oil prices leads to higher headline, core, and food inflation measures, a decrease in oil prices results in a decrease in the marginal cost of production, which lowers inflation in the economy. The study's conclusion is that during times of high oil prices, monetary policy should be used to control core inflation while agricultural production-boosting measures are implemented.

The potential of oil price volatility to increase inflation in economies that export oil was also investigated by Ogede, George, and Adekunle (2020). Data from 1995 to 2017 was examined using the Pool Mean Group estimate approach, with a focus on African nations. The outcome thus far showed that fluctuations in oil prices have a substantial detrimental effect on inflation. Accordingly, the study concludes that fluctuations in oil prices will have a significant effect on inflation in African nations that export oil. Because inflation reacts differently to various oil price shocks, African nations that export oil must take precautionary measures to reduce the likelihood of inflation.

The empirical studies showcase how oil prices affect inflation but do not explore the transmission channels through which this effect arises. Our study therefore bridges this gap by not only exploring the effect of oil price shocks on inflation but also establishing the monetary and fiscal channels through which oil prices influence inflation in Nigeria. Our study utilizes recent data from 1990 to 2024, and the analysis is conducted using both the fully modified OLS and the vector autoregression model.

3. METHODOLOGY

3.1. Model Specification

The model for this study is specified on two bases. At first, we specified our model based on the need to ascertain the parameter estimates in order to ascertain the direction and magnitude of the effect of key variables on inflation in Nigeria. Consequently, the model is specified by adapting from Ogede et al. (2020) as follows:

$$INFR_t = f(OILPS_t, BMSS_t, RGDP_t, EXCRV_t, FISB_t, CBIN_t, UNPL_t) \quad (1)$$

Where INFR is inflation rate, OILPS is oil price shock, BMSS is broad money supply, RGDP is the real output growth rate, EXCRV is exchange rate volatility, FISB is the fiscal balance, CBIN is central bank independence, and UNPL is the unemployment rate. for the purpose of estimation, Equation 1 is presented in an econometric postulation as follows:

$$INFR_t = \varphi_0 + \varphi_1 OILPS_t + \varphi_2 BMSS_t + \varphi_3 RGDP_t + \varphi_4 EXCRV_t + \varphi_5 FISB_t + \varphi_6 CBIN_t + \varphi_7 UNPL_t + \mu_t \quad (2)$$

Whereby μ_t is the stochastic term in the model, φ_0 is the intercept of the model assumed to be non-zero, and φ_1 *to* φ_7 are the partial slope coefficients of the model to be estimated. It is expected that while $\varphi_1, \varphi_2, \varphi_4$ *and* φ_5 are expected to be positive, φ_3, φ_6 *and* φ_7 are all expected to be negative.

On the second basis, which is to ascertain how inflation responds to oil price shocks, the Vector Autoregressive Model (VAR) is specified. In the model, we introduce broad money supply and fiscal balance along with the inflation rate and oil price shock to determine the prevalence of the petro-monetary transmission mechanism (Evans, 2021) and petro-fiscal transmission mechanism of oil price shocks on inflation in Nigeria. We therefore specify the VAR(1) model as follows:

$$INFR_t = \beta_{01} + \beta_{11} INFR_{t-1} + \beta_{12} OILPS_{t-1} + \beta_{13} BMSS_{t-1} + \beta_{14} FISB_{t-1} + \mu_{1t} \quad (3)$$

$$OILPS_t = \beta_{02} + \beta_{21} INFR_{t-1} + \beta_{22} OILPS_{t-1} + \beta_{23} BMSS_{t-1} + \beta_{24} FISB_{t-1} + \mu_{2t} \quad (4)$$

$$BMSS_t = \beta_{03} + \beta_{31} INFR_{t-1} + \beta_{32} OILPS_{t-1} + \beta_{33} BMSS_{t-1} + \beta_{34} FISB_{t-1} + \mu_{3t} \quad (5)$$

$$FISB_t = \beta_{04} + \beta_{41} INFR_{t-1} + \beta_{42} OILPS_{t-1} + \beta_{43} BMSS_{t-1} + \beta_{44} FISB_{t-1} + \mu_{4t} \quad (6)$$

The VAR (1) model is represented in matrix form as follows:

$$\begin{bmatrix} INFR_t \\ OILPS_t \\ BMSS_t \\ FISB_t \end{bmatrix} = \begin{bmatrix} \beta_{01} \\ \beta_{02} \\ \beta_{03} \\ \beta_{04} \end{bmatrix} + \begin{bmatrix} \beta_{11} & \beta_{12} & \beta_{13} & \beta_{14} \\ \beta_{21} & \beta_{22} & \beta_{23} & \beta_{24} \\ \beta_{31} & \beta_{32} & \beta_{33} & \beta_{34} \\ \beta_{41} & \beta_{42} & \beta_{43} & \beta_{44} \end{bmatrix} \begin{bmatrix} INFR_{t-1} \\ OILPS_{t-1} \\ BMSS_{t-1} \\ FISB_{t-1} \end{bmatrix} + \begin{bmatrix} \mu_{1t} \\ \mu_{2t} \\ \mu_{3t} \\ \mu_{4t} \end{bmatrix} \quad (7)$$

In Equation 7, the VAR (1) model is represented where we have a vector of the current values of the variables, a vector of constant, a 4×4 coefficient matrix, a vector of autoregressive variables of lag 1, and a vector of the error terms assumed to be white noise.

3.2. Nature and Sources of Data

For this study, our data are primarily time series, covering the period from 1990 to 2024, totaling thirty-five (35) observations, which is sufficient to capture changes in the variables of interest over the years. Data on exchange rate volatility and oil price shocks were calculated using the changes in the values of the variables (in this case, exchange rate and oil price). Our data being secondary in nature were obtained from reputable sources like the Central Bank of Nigeria for inflation rate, exchange rate, broad money supply, and output growth); Romelli (2024) for central bank independence; Kose, Kurlat, Ohnsorge, and Sugawara (2022) for fiscal balance; Federal Reserve Bank of St. Louis for oil price; and World bank for unemployment rate.

3.3. Analytical Technique

The basis of the estimation is centered around first ascertaining the stationarity condition of the variables using the Augmented Dickey-Fuller (ADF) technique. The dynamic ordinary least squares (DOLS) technique was employed in estimating the parameter estimates of the model given the integrating order of the variables. Then, the VAR technique was deployed to ascertain how inflation responds to oil price shocks in Nigeria by checking the various transmission mechanisms. The VAR technique therefore aided in generating the impulse response functions and the variance decomposition to see how the variables within the VAR system predict themselves.

4. EMPIRICAL FINDINGS

4.1. Descriptive Statistics

The result of the descriptive check for each variable is presented in Table 1. We observed that the inflation rate averaged 18.61% during the period under review, with the highest and lowest values of 72.84% and 5.39%, respectively. The standard deviation of the inflation rate is reported as 16.03, and its distribution is positively skewed (coefficient of skewness 2.14) and leptokurtic (coefficient of kurtosis 6.66, greater than 3). With the significance of the JB statistic at 1%, we conclude that the variable is not normally distributed.

Table 1. Descriptive properties of the series.

Statistics	INFR	OILP	BMSS	RGDP	EXCH	FISB	CBIN	UNPL
Mean	18.61	52.96	24.57	4.02	165.86	1.05	0.63	4.07
Maximum	72.84	111.63	87.76	15.33	645.19	9.44	0.64	5.74
Minimum	5.39	12.76	-0.79	-2.04	9.91	-4.68	0.61	3.07
Std. Dev.	16.03	32.44	18.64	3.73	142.80	4.26	0.02	0.57
Skewness	2.14	0.42	1.47	0.52	1.4245	0.48	-0.08	1.49
Kurtosis	6.66	1.88	5.50	3.90	5.175	1.86	1.02	4.74
Jarque-Bera (JB)	43.73	2.73	20.43	2.59	17.668	3.02	5.40	16.39
Probability	0.00	0.25	0.00	0.27	0.000	0.22	0.07	0.00
Observations	35	35	35	35	35	35	35	35

The crude oil price recorded a mean value of $52.57 per barrel (pb) with the highest and lowest price being $111.63 and $12.76 pb, respectively. The variable recorded a standard deviation of 32.44 with a positively skewed and platykurtic distribution. Meanwhile, the variable possesses a normal distribution since the JB statistic is insignificant. The mean value of broad money supply growth was observed to be 24.57% with an 87.76% and -0.79% maximum and minimum value, respectively recorded during the study period. The variable possesses a standard deviation of 18.64 with a distribution that is positively skewed and leptokurtic. With the JB statistic being significant at the 1%, the distribution is not normally distributed. The growth rate of aggregate output (RGDP) recorded an average value of 4.02% with a 15.33% maximum and -2.04% minimum value being recorded. With its standard deviation of 3.73, the variable is positively skewed and leptokurtic in nature. Further, the variable is normally distributed, given that the JB statistic is statistically insignificant.

For exchange rate, it is observed that its mean value was ₦165.86/$1 during the study period with a maximum and minimum value of ₦645.19 and ₦9.91/$1, respectively. Its standard deviation was given as 142.80, and the variable exhibits a positively skewed and leptokurtic distribution that is not normally distributed. The fiscal balance averaged 1.05% with a standard deviation of 4.262, possessing a positively skewed and platykurtic distribution; it is normally distributed. The variable's maximum and minimum values were 9.44% and -4.68%, respectively. Central bank independence and unemployment rates averaged 0.63 and 4.07%, respectively, with standard deviations of 0.02 and 0.57. While central bank independence is negatively skewed and platykurtic, unemployment is positively skewed and leptokurtic. However, the two variables are not normally distributed given that their JB statistics are significant.

4.2. Correlation Analysis

To check the degree of correlation between variables in the model, the Pearson correlation analysis was deployed and Table 2 presents the findings.

Table 2. Correlation matrix for the variables.

Variables	INFR	OILP	BMSS	RGDP	EXCH	FISB	CBIN	UNPL
INFR	1							
OILP	0.408	1						
BMSS	0.785	-0.213	1					
RGDP	-0.408	0.257	-0.047	1				
EXCH	0.845	0.511	-0.398	-0.098	1			
FISB	0.144	-0.296	0.385	0.275	-0.476	1		
CBIN	-0.401	0.813	-0.301	-0.003	0.682	-0.651	1	
UNPL	-0.016	-0.072	-0.246	-0.482	0.300	-0.401	0.303	1

An inspection of Table 2 indicates that oil price, broad money supply growth, exchange rate, and fiscal balance exhibit positive correlation with the inflation rate. Based on the strength of the correlation, broad money supply growth and the exchange rate show a strong correlation with the inflation rate, while oil prices have a fairly strong correlation. However, the fiscal balance exhibits a weak positive correlation with the inflation rate. Real output growth (RGDP), central bank independence, and the unemployment rate all show negative correlations with the inflation rate, though these tend to be weak. Checking the correlation between regressors, none of the coefficients exceed 0.80; thus, there is no possibility of multicollinearity in the model.

4.3. Stationarity Test

With the time series variables utilized in the study, it is pertinent to ascertain their unit root properties. This is done using the augmented Dickey-Fuller (ADF) technique, with Table 3 presenting the test results.

Table 3. Unit root test result.

Variables	ADF Statistics			Order of Integration
	t-statistic	5% critical value	p-value	
INFR	-5.464	-3.588	0.001	I(1)
OILP	-5.117	-3.568	0.001	I(1)
BMSS	-3.662	-3.558	0.040	I(0)
RGDP	-7.886	-3.563	0.000	I(1)
EXCH	-4.398	-3.574	0.008	I(2)
FISB	-4.827	-3.558	0.003	I(0)
CBIN	-5.518	-3.563	0.001	I(1)
UNPL	-6.368	-3.574	0.000	I(2)

Our result in Table 3 specifies the order of stationarity of the series, with I(0) indicating stationarity at level, I(1) at first difference, and I(2) at second difference. We observed that broad money supply growth and fiscal balance were stationary at level. The exchange rate and unemployment rate were stationary at second difference, while the rest of the variables were stationary at first difference. The unit root test results provide evidence of a higher order of stationarity among the series. Consequently, it is appropriate to use a cointegrating regression analysis with the dynamic ordinary least squares (DOLS) technique instead of conventional ordinary least squares. This method allows for the estimation of reliable and stable model estimates, which can inform sound policy recommendations.

4.4. Dynamic Ordinary Least Squares (DOLS) Estimation

The model on the effect of oil price shocks on inflation is estimated, and Table 4 offers the results from the analysis.

Table 4. The DOLS estimates.

Dependent Variable: INFR				
Method: Dynamic Least Squares (DOLS)				
Cointegrating equation deterministic: C				
Fixed leads and lags specification (lead=1, lag=1)				
Long-run variance estimate (Bartlett kernel, Newey-West fixed bandwidth = 4.0000				
Variables	**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**
OILPS	2.4664	0.3665	6.7294	0.0002
BMSS	0.8567	0.1323	6.4775	0.0004
RGDP	-8.5626	0.625	-13.7005	0.000
EXCRV	1.7191	0.1799	9.5554	0.000
FISB	2.9719	1.1303	2.6294	0.0412
CBIN	-10.082	1.2282	-8.2088	0.0001
UNPL	-5.4900	1.3508	-4.0643	0.0021
C	97.9441	16.7865	5.8347	0.0003
R-squared	0.9587	Mean dependent var		17.7278
Adjusted R-squared	0.9231	S.D. dependent var		16.0343
S.E. of regression	3.0801	Sum squared resid		9.4868
Long-run variance	2.3038			

Sequel to the DOLS estimates, our result in Table 4 indicated that oil price shocks (OILPS) are directly related to inflation significantly, reflecting that persistent shocks in crude oil prices tend to accelerate inflationary tendencies within the Nigerian economy. From the estimate, a 1% increase in oil price shocks initiates approximately a 2.466% increase in inflation in Nigeria. The observed finding aligns with the earlier studies such as Bawa et al. (2020), Evans (2021), Usman and Ugwuoke (2024), and Effiong et al. (2025).

Also, our findings show that broad money supply directly influences inflation significantly. This connotes that the postulation of the quantity theory of money is valid in the Nigerian case; thus, a rise in the volume of money in circulation will substantially spur inflationary tendencies in Nigeria. The estimated coefficient signals that inflation

will rise by approximately 0.8567% for every 1% surge in the money supply. The established finding aligns with studies like Kiganda (2014), Adodo, Akindutire, and Ogunyemi (2018), Okotori (2019), and Effiong et al. (2025).

A direct relationship with inflation was noted to arise from exchange rate volatility and fiscal balance. This indicates that continued exchange rate depreciation and deficit financing tend to spur inflationary tendencies in Nigeria. The estimate shows that a 1% increase in exchange rate volatility and fiscal balance will cause inflation to increase by 1.7191% and 2.9719%, respectively. The findings suggest that inflation is not only a monetary issue but can also be driven by fiscal policy actions by the government. Our findings support earlier studies like Okotori (2019), Okotori and Eze (2022), Effiong et al. (2025), and Effiong et al. (2025).

On the inverse relationship, output growth, central bank independence, and the unemployment rate were all negatively related to the rate of inflation. This denotes that when these variables rise, unemployment tends to decline. In the case of output growth, a rise in output counters the direct effect of an increase in the money supply, thereby eradicating demand-pull inflation. In the case of the unemployment rate, the Phillips Curve has established the existence of a trade-off between inflation and unemployment. Thus, to achieve a lower unemployment rate, such will be achieved at the cost of a higher inflation rate. Central bank independence has also been noted in the literature to be crucial in the management of inflation by the monetary authority (see (Baumann, 2021; Posso & Tawadros, 2013; Yahaya, Saidu, & Sadi, 2022)). The estimated result indicates that a 1% increase in output and central bank independence will suppress inflationary pressure in Nigeria by about 8.5626% and 10.082%, respectively. Similarly, a 1% increase in the unemployment rate will reduce inflation by approximately 5.49% on average.

The constant term in the model, 97.9441, is statistically significant and indicates that the inflation rate will be approximately 97.94% when holding the regressors constant. This highlights the importance of the regressors in explaining changes in Nigeria's inflation rate. The estimated model demonstrates a good fit, with regressors accounting for about 95.87% of the total variation in inflation. When considering degrees of freedom, this explanatory power remains high at 92.31%, underscoring the model's robustness.

4.5. Vector Autoregressive Model Estimation

4.5.1. Lag Order Selection

To determine the optimal lag duration to be incorporated in the VAR system, the lag order selection test is conducted, with the result provided in Table 5.

Table 5. The VAR lag order selection criteria.

Endogenous variables: INFR OILPS BMSS FISB						
Exogenous variables: C						
Lag	**LogL**	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	-457.74	NA	2.75e+08	30.78	30.96	30.84
1	-427.32	50.69*	1.06e+08*	29.82*	30.75*	30.12*
2	-419.07	11.55	1.90e+08	30.33	32.01	30.87
3	-404.25	16.80	2.43e+08	30.41	32.84	31.19
LR: Sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						
HQ: Hannan-Quinn information criterion						

Note: * indicates lag order selected by the criterion.

Given the result in Table 5, at lag 0, we observe a high FPE, accompanied by high values for AIC (30.78292), SC (30.96975), and HQ (30.84269). At lag 1, these values decline to 29.82198, 30.75611, and 30.12082 for AIC, SC, and HQ, respectively. After lag 1, the values of these criteria increase at lag 2 and lag 3 for all selection criteria. Therefore,

the lag length with the minimum value for the various criteria (lag 1) is considered the optimal lag length to incorporate in the VAR system.

4.5.2. The VAR Model Estimation

With the VAR(1) model being estimated given the optimal lag length, Table 6 presents the empirical results, where it is observed that inflation is strongly endogenous in predicting itself. This is because the previous year's inflation rate exerts a strong positive effect on the current inflation rate. We can therefore state that expectations about the future inflation rate can be formed using information about the current rate of inflation (adaptive expectation). The estimates, therefore, show that the previous year's inflation rate increases the current inflation rate by about 0.6989%.

Table 6. The VAR estimates.

Included observations: 32 after adjustments				
Standard errors in ( ) & t-statistics in [ ]				
	INFR	**OILPS**	**BMSS**	**FISB**
INFR(-1)	0.6989	0.0181	-0.1606	0.0395
	(0.1176)	(0.2040)	(0.1753)	(0.0465)
	[5.9400]	[0.0889]	[-0.916]	[0.8489]
OILPS(-1)	0.07561	0.0577	0.7158	0.1208
	(0.1156)	(0.2006)	(0.1723)	(0.0458)
	[0.6540]	[0.2876]	[4.1543]	[2.6376]
BMSS(-1)	0.28258	0.1546	0.3921	0.1872
	(0.1088)	(0.1887)	(0.1621)	(0.0430)
	[2.5968]	[0.8196]	[2.4188]	[0.4344]
FISB(-1)	0.52802	-0.8551	1.8246	0.3288
	(0.1822)	(0.8364)	(0.7185)	(0.1909)
	[2.8966]	[-1.022]	[2.5394]	[1.7221]
C	-0.38010	-1.4451	15.6262	-0.6497
	(3.5622)	(6.1782)	(5.3070)	(1.4105)
	[-0.1067]	[-0.2339]	[2.9444]	[-0.4606]
R-squared	0.6446	0.0468	0.5097	0.5123
Adj. R-squared	0.5919	-0.0943	0.4622	0.4841
F-statistic	12.2445	0.3320	4.6855	1.7120
Log likelihood	-117.5708	-135.191	-130.327	-87.9261
Akaike AIC	7.66067	8.76194	8.4579	5.8078
Schwarz SC	7.8896	8.9909	8.6869	6.0369

It also observed that while oil price shocks do not exhibit a strong influence on the inflation rate (though such an effect is positive), they exert a direct strong positive effect on broad money supply and fiscal balance. Hence, oil price shocks are strongly exogenous in predicting broad money supply and fiscal balance in Nigeria. A 1% increase in oil price shocks increased broad money supply and fiscal balance by approximately 0.71588% and 0.1208%, respectively. This shows that oil prices do not directly affect inflation but do so through broad money supply and fiscal balance. This is because broad money supply and fiscal balance exerted strong direct influence on inflation within the VAR system. This supports the prevalence of the petro-monetary and petro-fiscal transmission mechanisms of oil price shocks to inflation in Nigeria. From the estimates, broad money supply and fiscal balance are strongly exogenous in predicting the inflation rate; thus, a 1% increase in broad money supply and fiscal balance prompts inflation to increase by about 0.2826% and 0.5280%, respectively.

The estimated result shows that about 64.46% of the total distortions in the inflation rate are accounted for by the lag of inflation itself, lag of oil price shock, lag of money supply, and lag of fiscal balance. Meanwhile, the system accounts for about 50.97% of the distortions in money supply, 51.23% of the distortion in fiscal balance, and just 4.69%

of the distortion in oil price shocks. This low predictive power in the case of oil prices is due to the fact that international oil prices are not determined by Nigeria's domestic economic conditions.

4.5.3. Impulse Response Functions (IRFs)

The IRFs are utilized to showcase how variables of interest (broad money supply, fiscal balance, and inflation rate) respond to shocks in the crude oil price.

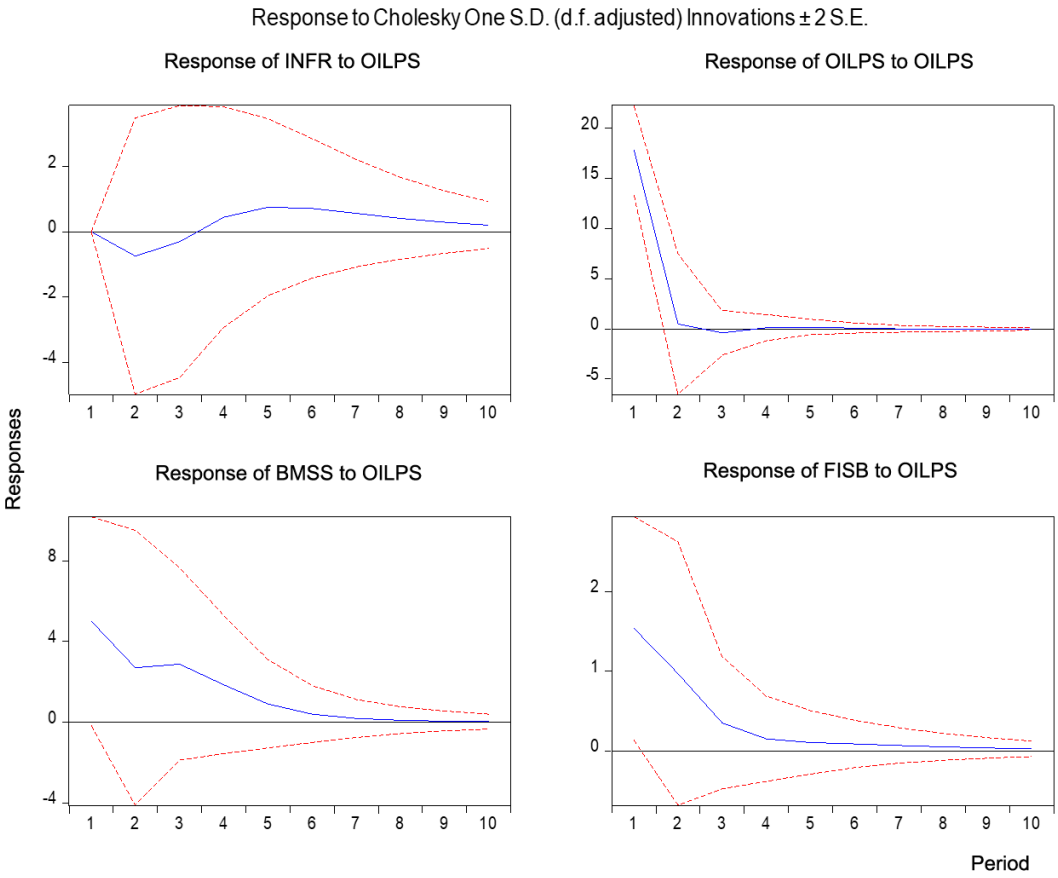

Figure 2. Responses of variables to oil price shocks.

Observing from Figure 2, we observe that the inflation rate responded negatively to shocks in oil prices in the short run (up to the third period), after which such response became positive from the 4th period until the 10th period. This indicates that over time, crude oil price shocks tend to accelerate inflationary pressure in Nigeria. It can also be observed that both broad money supply and fiscal balance responded positively to shocks in crude oil prices. This reflects that oil price shocks tend to propel a rise in the money supply and fiscal balance; however, the effect of the shock diminishes in the long run.

In Figure 3, we observed how the variables within the VAR system respond to shocks in broad money supply. It is noted that inflation responds positively to shocks in money supply, indicating that positive innovations in money supply will prompt a rise in the level of inflation in the economy. Also, oil price shocks responded positively to shocks in money supply, but the effect of the shock decomposes after the 4th period.

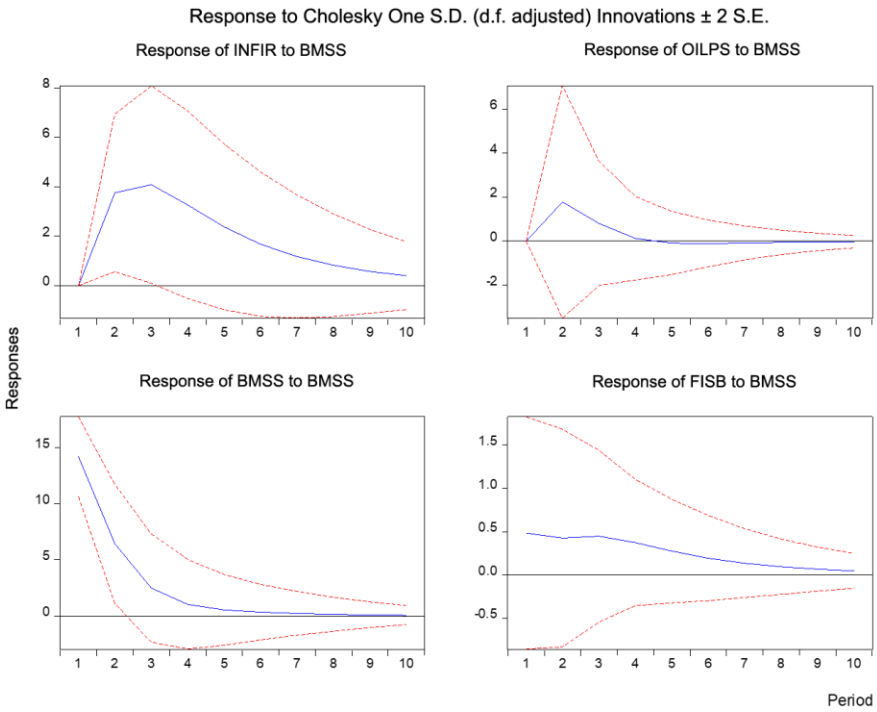

Figure 3. Responses of variables to money supply shocks.

The IRFs further demonstrate that the fiscal balance responded positively to shocks in broad money supply. This indicates that positive innovations in money supply will lead to an expansion of the fiscal balance within the Nigerian economy.

The IRFs in Figure 4 show that inflation responded negatively to shocks in the fiscal balance in the short run, but this became positive from the 3rd period. This clearly indicates that shocks in the fiscal balance can temporarily reduce inflation, but they will generate a long-term positive shock afterward.

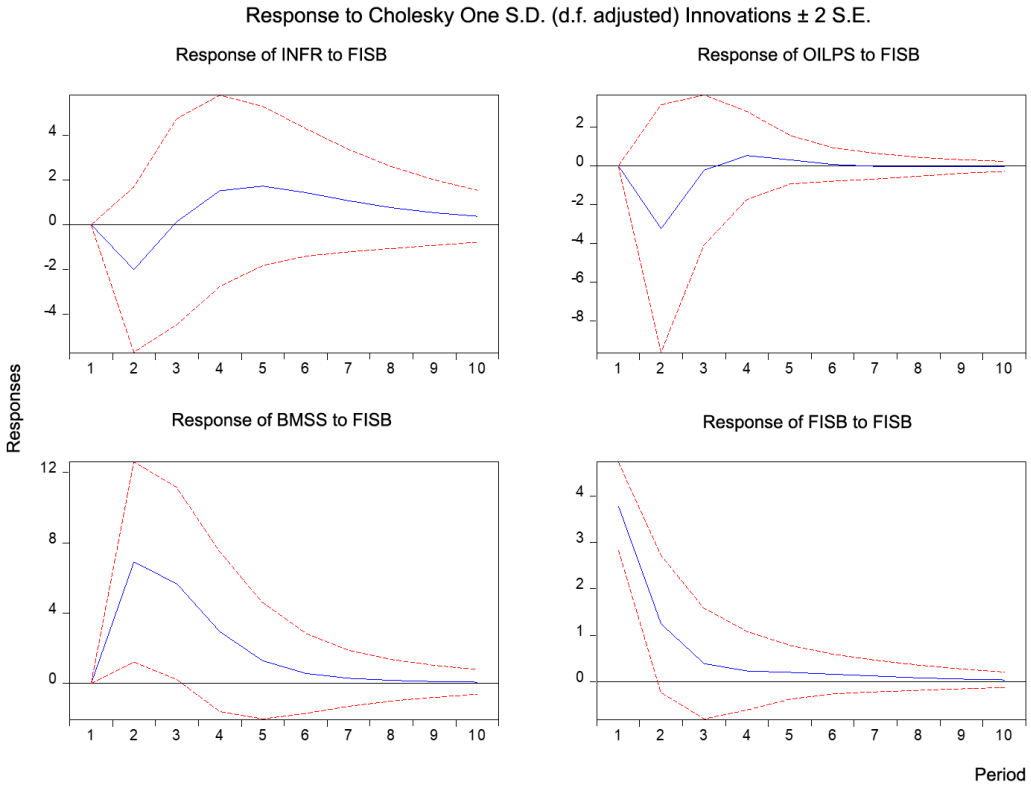

Figure 4. Responses of variables to shocks in fiscal balance.

Broad money supply responds positively to shocks from fiscal balance, but the impact tends to decompose over the long term. This indicates that fiscal balance does not have a persistent shock on money supply. Consequently, a high level of fiscal balance will tend to increase the volume of money in circulation, which in turn raises the general price level.

4.5.4. Variance Decomposition (VD)

The VD shows the proportion of the forecasted error variance (FEV) of a variable that is being explained by other variables within the VAR system.

Table 7. Variance decomposition of inflation rate.

Period	S.E.	INFR	OILPS	BMSS	FISB
1	10.382	100.000	0.000	0.000	0.000
2	14.100	90.631	0.275	7.086	2.006
3	15.745	85.709	0.257	12.415	1.617
4	16.538	82.244	0.307	15.145	2.301
5	16.959	79.932	0.490	16.355	3.221
6	17.179	78.621	0.653	16.887	3.837
7	17.290	77.944	0.752	17.132	4.170
8	17.344	77.608	0.805	17.248	4.337
9	17.371	77.443	0.831	17.304	4.420
10	17.384	77.362	0.844	17.331	4.460

In Table 7, we observed that the inflation rate is strongly endogenous in the short run, accounting for about 90.63% of its total FEV in the second period.

However, this declines over time, with broad money supply exhibiting a growing influence on the level of inflation. It can be observed that in the 10th period, broad money supply accounted for about 17.33% of the total FEV in inflation.

This portrays that broad money supply has some predictive power on the inflation rate in Nigeria.

Table 8. Variance decomposition of oil price shock.

Period	S.E.	INFR	OILPS	BMSS	FISB
1	18.006	2.442	97.557	0.000	0.000
2	18.398	2.452	93.51	0.937	3.091
3	18.422	2.453	93.322	1.126	3.097
4	18.435	2.503	93.190	1.129	3.176
5	18.441	2.531	93.134	1.130	3.202
6	18.443	2.541	93.120	1.134	3.203
7	18.444	2.544	93.115	1.136	3.203
8	18.444	2.545	93.112	1.137	3.204
9	18.444	2.545	93.111	1.138	3.204
10	18.444	2.545	93.110	1.138	3.205

In Table 8, we observed the variance decomposition (VD) of oil price shock. The results show the strong endogeneity of oil price shock in predicting itself, as it accounts for 97.56% of its FEV in the first period, remaining high at 93.11% in the tenth period.

International crude oil prices are not determined by Nigeria's domestic factors, which explains the persistent endogeneity of crude oil price shocks even in the long run.

Table 9. Variance decomposition of broad money supply.

Period	S.E.	INFR	OILPS	BMSS	FISB
1	15.467	5.404	10.493	84.101	0.000
2	18.322	3.851	9.657	72.298	14.191
3	19.568	3.505	10.648	65.001	20.844
4	19.905	3.409	11.169	63.091	22.328
5	19.975	3.386	11.302	62.727	22.584
6	19.991	3.3859	11.327	62.659	22.627
7	19.995	3.389	11.330	62.642	22.637
8	19.997	3.391	11.331	62.637	22.639
9	19.998	3.392	11.331	62.634	22.640
10	19.998	3.393	11.331	62.633	22.641

The result in Table 9 presents the VD of broad money supply, where it is observed that broad money supply is strongly endogenous in predicting itself in the short run, accounting for approximately 84.10% of its total FEV. This, however, declined to 62.63% in the long run, displaying declining strong endogeneity. Consequently, we observed that both oil price shock and fiscal balance exhibited greater influence on broad money supply, accounting for about 11.33% and 22.64% of the total FEV in broad money supply in the 10th period, indicating a 33.97% joint contribution. This shows that oil price shock and fiscal balance have some predictive power on money supply.

Table 10. Variance decomposition of fiscal balance.

Period	S.E.	INFR	OILPS	BMSS	FISB
1	4.111	0.011	13.943	1.377	84.668
2	4.442	0.841	16.698	2.091	80.368
3	4.521	1.951	16.720	2.990	78.337
4	4.559	2.566	16.544	3.604	77.284
5	4.580	2.831	16.448	3.928	76.791
6	4.590	2.944	16.406	4.084	76.563
7	4.596	2.995	16.388	4.159	76.456
8	4.598	3.019	16.380	4.195	76.404
9	4.600	3.030	16.376	4.212	76.379
10	4.600	3.036	16.374	4.221	76.367

The result displayed in Table 10 offers the VD of fiscal balance, where it is observed that the variable itself contributed about 84.67% of its total FEV in the 1st period, and then declines to about 76.37% in the 10th period, exhibiting strong endogeneity. Also, it can be observed that, compared to other variables within the system, oil price shock accounted for about 13.94% of the total FEV in fiscal balance in the 1st period, and this rose to 16.37% in the 10th period. This shows that oil price has some predictive power over fiscal balance.

4.6. Discussion of Major Findings

The major findings of this study are that oil price shocks positively affect inflation in Nigeria, and that inflation, broad money supply, and fiscal balance respond positively to shocks in oil prices. In the same vein, inflation responded positively to shocks in broad money supply and fiscal balance. Our findings have shown that shocks in crude oil prices can be transmitted to affect the domestic inflation rate through broad money supply and fiscal balance. A rise in oil price shocks will cause government revenue to increase through the inflow of foreign exchange earnings from oil. This will increase government spending, with the transmission effect of increasing the money supply, which therefore translates to raising the domestic price level. The channel through which oil price shocks affect inflation through money supply is the petro-monetary transmission mechanism (PMTM), while the pathway through which oil price shocks affect inflation through public spending (and hence affecting the fiscal balance) is the petro-fiscal transmission mechanism (PFTM). Our findings have shown that both the PMTM and the PFTM are prevalent in the Nigerian

case. The implication here is that, in the management of inflation in Nigeria, oil prices must be considered as a key variable of concern since their fluctuation impacts both the monetary and fiscal sides of the economy.

5. CONCLUSION AND RECOMMENDATIONS

Our study focused on exploring the influence of oil price shocks on inflation in Nigeria by examining both the monetary and fiscal pathways through which oil price shocks translate to affect inflation in Nigeria. We utilized time series data from 1990 to 2024, analyzed using both FMOLS and VAR techniques. Our findings from FMOLS showed that oil price shocks, broad money supply, and fiscal balance exerted positive and significant effects on inflation in Nigeria, indicating that these variables drive inflationary pressure within the Nigerian economy. Additionally, we attempted to ascertain the pathway through which oil price shocks affect inflation in Nigeria. Results from the VAR model, with the accompanying impulse response function and variance decomposition, validated that oil price shocks influence inflation through broad money supply and fiscal balance. These variables responded positively to shocks in oil prices, and the inflation rate itself responded to shocks in broad money supply and fiscal balance. Oil-producing countries' money supply is often increased by positive oil price shocks (Omolade, Ngalawa, & Kutu, 2019), which significantly impacts consumer prices. Reduced foreign income for oil-producing countries also leads to currency depreciation and increased inflation as a result of falling oil prices (Bala & Chin, 2018). Hence, in oil-producing countries like Nigeria, consumer prices and exchange rates are greatly impacted by oil price shocks, whether such shocks are positive or negative. The study therefore concludes that oil price shocks are a key driver of inflation in an oil-dependent economy, especially when the economy is heavily reliant on oil.

Our findings showcase that oil price shocks have a positive effect on inflation in Nigeria through their impact on money supply and fiscal balance. It is therefore recommended that the continuous reliance on the monetary policy rate adjustment as a tool for stabilizing the price level should be reconsidered. The Central Bank of Nigeria should strongly complement this strategy with open market operations, which will aid in targeting excess liquidity that may arise from windfalls from oil revenue. Furthermore, the Federal Government of Nigeria must effectively employ countercyclical stabilization mechanisms such as the Sovereign Wealth Fund. This will help in smoothing cycles in oil revenue in Nigeria.

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REFERENCES

Abatcha, M. (2021). Empirical analysis of oil price changes on inflation in Nigeria. *Journal of Management and Economic Studies, 3*(3), 84-101.

Abubakar, A. B. (2019). Oil price and exchange rate nexus in Nigeria: Are there asymmetries. *CBN Journal of Applied Statistics, 10*(1), 1-28.

Adodo, F. L., Akindutire, O. R., & Ogunyemi, J. K. (2018). Monetary policy and control of inflation in Nigeria. *International Journal of Management IT and Engineering, 8*(12), 154-170.

Agu, O. C., & Nyatanga, P. (2021). Does the expected crude oil price influence inflation in Nigeria? *African Journal of Business & Economic Research, 16*(4), 117-135.

Al-Eitan, G., & Al-Zeaud, H. (2017). Impact of fluctuations in the prices of crude oil on inflation: Evidence from Jordanian economy. *International Journal of Academic Research in Economics and Management Sciences, 6*(1), 134-145.

Anwar, M. M., Khan, G. Y., & Khan, S. J. I. (2017). Effect of increase in oil price on inflation in Pakistan. *International Review of Humanities and Scientific Research*, *2*(2), 216-223.

Aragaw, A. (2024). The inflationary effect of the budget deficit: does financial sector development matter? *Journal of Innovation and Entrepreneurship*, *13*(1), 35. https://doi.org/10.1186/s13731-024-00394-4

Bala, U., & Chin, L. (2018). Asymmetric impacts of oil price on inflation: An empirical study of African OPEC member countries. *Energies*, *11*(11), 3017. https://doi.org/10.3390/en11113017

Banerjee, R. N., Boctor, V., Mehrotra, A., & Zampolli, F. (2022). *Fiscal deficits and inflation risks: The role of fiscal and monetary policy regimes*. BIS Working Papers No. 1028.

Baumann, P. (2021). *Estimating the effect of central bank independence on inflation using longitudinal targeted maximum likelihood estimation*. Paper presented at the IFC-Bank of Italy Workshop on "Machine Learning in Central Banking" 19-22 October 2021, Rome.

Bawa, S., Abdullahi, I. S., Tukur, D. S., Barda, S. I., & Adams, Y. J. (2020). Asymmetric impact of oil price on inflation in Nigeria. *CBN Journal of Applied Statistics*, *12*(1), 85-113.

Beach, W. W. (2024). *Is inflation the result of excessive deficit spending?* Economic Policy Innovation Centre Report No. 1234, Economic Policy Innovation Centre.

Bouchouev, I. (2021). *Is the oil price-inflation relationship transitory? OIES Energy Comment*. United Kingdom: Oxford Institute for Energy Studies.

Castro, C., Jiménez-Rodríguez, R., Poncela, P., & Senra, E. (2017). A new look at oil price pass-through into inflation: evidence from disaggregated European data. *Economia Politica*, *34*(1), 55-82. https://doi.org/10.1007/s40888-016-0048-9

Conflitti, C., & Luciani, M. (2017). *Oil price pass-through into core inflation*. Bank of Italy Occasional Paper, No. 405.

Effiong, U. E., Okijie, S. R., & Udofia, L. E. (2025). The interaction of oil price shocks, exchange rate volatility and inflation in Nigeria. *SSR Journal of Arts, Humanities and Social Sciences*, *2*(7), 103-115.

Effiong, U. E., Udonwa, U. E., & Udofia, L. E. (2025). Impact of monetary policy on selected macroeconomic variables in Nigeria. *International Journal of Finance, Accounting and Management Studies*, *1*(5), 112-121.

Evans, O. (2021). *The curious case of petro-monetary transmission mechanism in oil-producing countries: an analysis of the effect of oil price on inflation in Nigeria*. MPRA Paper No. 118198.

Hugo, Z. K. (2015). *The oil price shock of 2014: Drivers, impacts and policy implications*. London, UK: Working Paper, Overseas Development Institute.

Ihugba, O. A., & Adefabi, R. A. (2025). Oil prices and inflation in Nigeria: An empirical analysis of nonlinear responses to oil price changes. *Journal of Economics and Allied Research*, *10*(1), 131-148.

Kiganda, E. O. (2014). Relationship between inflation and money supply in Kenya. *Journal of Social Economics*, *2*(2), 63-83.

Kilian, L., & Zhou, X. (2020). The impact of gasoline price shocks on household inflation expectations: Evidence from 2009 to 2013. *Journal of Economic Analysis*, *55*(4), 1234-1250.

Kose, M. A., Kurlat, S., Ohnsorge, F., & Sugawara, N. (2022). A cross-country database of fiscal space. *Journal of International Money and Finance*, *128*, 102682. https://doi.org/10.1016/j.jimonfin.2022.102682

Muhammad, B. A., Shuaibu, M. S., Alam, M. J., & Salisu, L. N. (2023). The asymmetric impact of oil price volatility on Nigeria's inflation. *Annals of the University Dunarea de Jos of Galati: Fascicle: I, Economics & Applied Informatics*, *29*(3), 45-56.

Ogede, S. J., George, E. O., & Adekunle, I. A. (2020). *Exploring the inflationary effect of oil price volatility in Africa's oil exporting countries*. AGDI Working Paper, No. WP/20/020, African Governance and Development Institute (AGDI), Yaoundé.

Okeke, S. O., Nwoha, C. E., & Duru, A. N. (2024). Effect of crude oil price shock on inflation and exchange rate in Nigeria. *European Journal of Business and Innovation Research*, *12*(2), 56-66.

Okotori, T. W. (2019). The Dynamics of monetary policy and inflation in Nigeria. *IOSR Journal of Economics and Finance*, *10*(2), 37-49.

Okotori, T. W., & Eze, G. (2022). *CBN monetary policy and inflation nexus in Nigeria: An empirical approach*. MPRA Paper No. 110523.

Omolade, A., Ngalawa, H., & Kutu, A. (2019). Crude oil price shocks and macroeconomic performance in Africa's oil-producing countries. *Cogent Economics & Finance*, *7*(1), 1607431. https://doi.org/10.1080/23322039.2019.1607431

Posso, A., & Tawadros, G. B. (2013). Does greater central bank independence really lead to lower inflation? Evidence from panel data. *Economic Modelling*, *33*, 244-247. https://doi.org/10.1016/j.econmod.2013.04.005

Romelli, D. (2024). *Trends in central bank independence: A de-jure perspective*. BAFFI CAREFIN Centre Research Paper No. 217.

Usman, M., & Ugwuoke, O. (2024). Asymmetric impact of crude oil price on domestic price of goods in Nigeria. *UNIZIK Journal of Agricultural Economics and Extension*, *1*(1), 172-180.

Yahaya, A., Saidu, M. T., & Sadi, A. (2022). Effects of central bank independence and financial stability on inflation in selected African countries. *CBN Journal of Applied Statistics*, *13*(2), 155-184. https://doi.org/10.33429/Cjas.13222.5/7

Živkov, D., Đurašković, J., & Manić, S. (2019). How do oil price changes affect inflation in Central and Eastern European countries? A wavelet-based Markov switching approach. *Baltic Journal of Economics*, *19*(1), 84-104. https://doi.org/10.1080/1406099X.2018.1562011