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MACROECONOMIC VARIABLES RESPONSE TO OIL PRICE SHOCKS IN NIGERIA

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Abstract

The Nigerian economy is highly vulnerable to fluctuations in the international price of crude oil. This is due to the fact that the economy depends majorly (80%) on the income from crude oil for its foreign earnings because oil as a commodity plays a central role in the economic activities of the nation. This study analyzed the dynamic response of macroeconomic variables to oil price shocks in Nigeria from 1985Q1-2018Q4. The data were analyzed using Structural Vector Autoregressive (SVAR) technique to estimate the response of macroeconomic variables to oil price shocks. The result of the impulse response function and variance decomposition analysis showed that output, inflation rate, exchange rate, interest rate, stock prices and unemployment rate significantly respond to oil price shocks in Nigeria. The implication of this is that the Nigerian economy is significantly affected by external shocks. The study, therefore, recommends that effective management of oil wealth such as investment in productive economic activities that would provide employment, drive economic growth is essential in the bid to maintain macroeconomic stability in an oil rich economy like Nigeria.

Introduction

Economists have viewed changes in the price of oil as a significant source of economic fluctuations as well as a paradigm for global shock. This has led to successions of empirical studies that attempt to find the relationship between oil price shocks and macroeconomic activities. Earlier empirical studies found a significant negative relationship between oil price shocks and growth in an economy and this was used as an evidence that oil shocks were responsible for economic recession which was characterized by two episodes of low growth, high inflation and high unemployment in the USA and some of

European countries in the 1970s (Hamilton, 1983; Mork, 1989).

Over the years, and around the world, the increasing spate of variations in oil prices remains a source of challenge to policy makers. Since the major oil price shock of 1973, there have been marked fluctuations in the world price of oil and the Nigerian economy has relied heavily on export of crude oil for foreign exchange earnings and unprecedented revenues. The return accrued from the sales of exported crude oil accounts for over 95% of export earnings and about 85% of government revenues (Oladipo 2014). This expectedly would boost the purchasing power of the economy, promote industrial growth and investment. Consequently, it is expected that this would boost the earnings of corporate firms, dividend payment to investors, while simultaneously increasing stock prices and reducing unemployment rate. Despite this, the oil sector only contributed about 10.85% to GDP in the year 2016, while unemployment rate increased to 13.3 per cent and the Nigerian economy recorded a negative growth in the same year. The Nigerian National Petroleum Corporation (2015) reports that the country imports almost 85% of refined products for local consumption. The inference from the report is that in case of a small oil price change, it could have a large impact on the Nigerian economy.

Different scholars have studied the response of macroeconomic variables to oil price shocks and employed broad array of macroeconomic variables such as output, inflation, exchange rate, and money supply, different methods of analyses have yielded different results. Studies such as Hamilton (1988) and Berument, Ceylan, and Dogan (2010) and Omojoilaibi (2013) provide evidences that intensify the assertion that oil prices reduce output and inflation, while Blanchard and Gali (2007) reported that the impact of oil price on economic growth and inflation are not the same as at the 1970s due to the massive usefulness of oil. The impact of oil price shocks on stock prices in developing countries has not been sufficiently covered in the literature unlike studies in developed economies where Papapetrou (2001) and Basher and Sadorsky (2006) found a significant relationship between oil price shocks and stock markets in Greece and United States respectively. Since the Nigerian economy is dynamic, there is the need to explore the dynamic impact of oil price shocks on stock prices. Unemployment is a more fundamental macro problem for an oil dependent economy like Nigeria and negative shock affect negatively outputs and demand in other sectors causing lay off of labor or aggravating unemployment.

However, the outcome of these studies have been mixed resulting in lack of consensus in the literature.Therefore, a need for constant update of literature using recent data set and a different tool of analysis.

Review of Literature

Several pieces of empirical evidence on the relationship between oil price shock and Nigeria's macroeconomic variables show this topic remains on the front burner of policy discussion, debate, and academic research.

Akin and Babajide (2010) studied how oil price shocks will impact selected macroeconomic variables using data from 1970 to 2010. The granger-causality test, impulse response function, and variance decomposition were used in this study, and the results reveal that oil price shocks do not have a major impact on some important macroeconomic variables in Nigeria. The earlier mentioned approaches also show

that oil price shocks do not cause output, government expenditure, inflation, and the real exchange rate.

Simeon and Stephen (2013) also contributed to how oil price shocks and Nigeria's macroeconomic relate in both the short run and long run. The popular Vector Autoregressive model(VAR) was adopted for the study. It was found out that the existence of response by real government expenditure to both positive and negative oil price shocks is more significant in the long run than in the short run. It was also observed that a positive oil price shock has a greater impact on GDP in the short and long run as against a negative shock, which will, in turn, trigger inflation rate and currency depreciation due to a rise in import expenses.

Yusuf(2015) analyses the impact of oil price shocks on the growth of the Nigeran economy by applying the Augmented Dicky Fuller Test (ADF), Johansen and Juselius, Maximum eigenvalue tests as well as Structural Vector Autoregression (SVAR). The result shows that there exists a significant impact of oil price shock on economic growth.

Similalry, Obi, Awujola, and Ogwuche (2016) contribute to the study on oil price shocks and macroeconomic performance in Nigeria with a major focus on exchange rate fluctuations. Unit root test, Johansen-Co-integration technique, Variance decomposition, Granger causality test, and Vector Auto Regression Mechanism (VAR) were employed. It was established that changes in oil price affect the real exchange rate, interest rate, and Gross Domestic Product (GDP).

Furthermore, Lukman (2017) studies the effect of oil price movement on Nigerian macroeconomic variables using both linear and non-linear Autoregressive Distributed Lagged Model (ARDL). The result alludes to the significant impact of oil price movement on macroeconomic variables like output, price, and exchange rate in both the short and long run. However, the effect on output and exchange rate seems asymmetry.

Ama (2019) uses the Vector Autoregressive model to examine the effect of oil price shocks on monetary policy in Nigeria. From the result of the impulse response function, positive oil price shocks have no significant impact on monetary policy (interest rate), real exchange rate, and real GDP. Both the impulse response function and variance decomposition analysis reveal that oil price shocks only explain a small fraction of factor variance in interest rate, real exchange, and real GDP.

Harbor and Oleka (2019) examine the impact of oil price Changes on selected macroeconomic variables in Nigeria through the ex-post facto research design and the Autoregressive Distributed Lag (ARDL) model. These researchers observe that oil price fluctuation has a positive and significant influence on government revenue and expenditure. Conversely, its impact on domestic commodity prices was not statistically significant.

Arinze (2020) adopts Vector Autoregression Model (VAR) to analyze the relationship between oil prices and three essentials macroeconomic in Nigeria with data spanning 1960 and 2018. Keynesian aggregate demand was used to provide the theoretical underpinning for this research. Thus, the empirical results show that oil price shock has a negative impact on inflation and its coefficient is statistically significant, but at the sixth lag. Hence, oil price shocks do not have a near-term impact on inflation.

Ologbenla(2020) investigates the macroeconomic impact of oil price shocks on

the Nigerian economy using the Vector Autoregression Model(VAR) by making exchange rate, inflation rate, and GDP endogenous variables while the oil price is the major exogenous factor. The outcome, however, negated Yusuf's (2015) study that oil prices' direct impact on GDP is significant. It was observed that the responsiveness of GDP to oil price fluctuation is through the exchange rate shocks.

Okunoye and Sabuur (2020) establish the relationship between oil price shocks and fiscal-monetary variables in Nigeria by applying a structural VAR approach for data between 1981 and 2019. The study observes that oil price shock is responsible for a significant variation in monetary policy, exchange rate, and money supply. In addition, it was noted that oil price shocks have a significant impact on commodity prices, oil revenue, and government expenditure.

Onakoya and Agunbiade (2020) examine oil sector performance and Nigerian macroeconomic variables for data between 1980 and 2017. The Augmented Dickey-Fuller and Phillip Perron tests were used to establish the stationarity of the variables. Against this backdrop, an error correction mechanism was employed to determine the short-run equilibrium for the model. For the causality test, the Toda Yamamoto modified Wald's test was applied. The result shows the presence of unidirectional causality with oil revenue, GDP, and employment.

Methodology

This research employed secondary data since the data utilized were not obtained by the researcher. Quarterly time series data were obtained from CBN statistical bulletin (various issues), National Bureau of Statistic (NBS), and World Bank Commodity Price Data (Pink Sheet). The variables used to capture macroeconomic variables include: output, exchange rate, inflation, interest rate, stock prices, and unemployment.

This study adapted the model used by Korhonen and Mehrotra (2009) but extended the model by including variables such as the unemployment rate and All – Share Index to the model. This study utilized the Structural autoregressive model to examine the response of macroeconomic variables to oil price shocks. The recursive SVAR model is written as:

$Y_t = C_0 + \sum_{i=1}^{k} \Phi_i Y_{t-1} + \varepsilon_t$

Where Yt = Vector of Endogenous variables in the system at time t, the current period.

C0 = vector of constant term.

Yt-1 = Lagged endogenous variables. This captures the effect of the variables in the system

Φ_i = The matrix of the coefficients of the variables in the system.

εt = The vector of random disturbance error term, which are assume to be independently and identically distributed error term with zero mean and finite variance.

The residuals are uncorrelated white noise series. Hence, the reduced form VAR in lag operator can be rewritten as:

A (L) Yi = μt (3.2)

Similarly, the SVAR model in lag operator form is:

CA (L)Yt = C μt = εt (3.3)

Instructively, this study employed a seven variables SVAR model comprising of Real oil price (ROILP), Norminal effective exchange rate (NEXRT), Interest rate (RIR), the growth rate of the GDP (GDPGR), inflation rate (INFL), all share index and unemployment..

Yt = (ROILP, RGDP, CPI, UEMR, ASI, INTR, NEXRT)′ (3.4)

The method of analysis used for this inquiry hinges on the Blanchard and Quah (1989)

long-run restriction approach. In the moving average representation, the sequences RGDP, CPI, UNEM, ASI, INTR, and NEEXR AND ROILP can be expressed as a linear combination of current and past structural shocks.

Data Analysis and Results

Unit Root Test Results for Macroeconomic Variables and Oil Price

The first step taken to determine the underlying properties of the process that generate our time series variables whether our model is stationary or non-stationary is the unit root test. For this purpose, the null hypothesis of non – stationarity variables was tested against the alternative hypothesis of stationarity variables using the Augumented Dickey Fuller(ADF) and Phillips – Perron test (PP, 1988) with the inclusion of a constant and time trend in the regression.

Table 4.1 presents the summary of the Unit Roots results for each of the variables.

Table 4.1 Summary of Unit Root results

Variables	Augumented Dickey Fuller				Phillips – Perron			
	ADF	5% Critical Value	Included in the equation	Remarks	PP	5% Critical Value	Included in the equation	Remarks
LRGDP	-11.01	-3.45	Trend & Intercept	I(1)	-11.13	-3.45	Trend & Intercept	I(1)
CPI	-9.08	-3.45	Trend & Intercept	I(1)	-8.38	-3.45	Trend & Intercept	I(1)
UNEM	-5.72	-3.45	Trend & Intercept	I(1)	-5.89	-3.45	Trend & Intercept	I(1)
LASI	-7.14	-3.45	Trend & Intercept	I(1)	-7.14	-3.45	Trend & Intercept	I(1)
INTR	-9.46	-3.45	Trend & Intercept	I(1)	-9.32	-3.45	Trend & Intercept	I(1)
NEEXR	-10.40	-3.45	Trend & Intercept	I(1)	-10.38	-3.45	Trend & Intercept	I(1)
ROILP	-9.08	-3.45	Trend & Intercept	I(1)	-8.38	-3.45	Trend & Intercept	I(1)

Source: Author's Computation, 2019

For variables that characterized the macroeconomic variables and the real oil price – the null hypothesis of unit root was rejected at levels but all variables were stationary at first difference I(1).

Cointegration

A vector of variables integrated of order one is cointegration if there exists linear combination of the variables, which are stationary. The maximal Eigen value and trace statistic were utilized to determine the number of cointegrating vectors, following the Johansen and Juselius (1990) two likelihood ratio test statistics approach was employed. This test was employed allowing for the presence and absence of linear trends.

Table 4.2

Maximum EigenValue Statistic			Trace Statistic		
Rank	H+	H	Rank	H+	H
R = 0	54.81***	46.23***	R = 0	163.43***	125.62***
r = 1	37.10	40.08	r = 1	108.62***	95.75***
r = 2	34.13**	33.88**	r = 2	71.51	69.82
r = 3	15.03	27.58	r = 3	37.38	47.86
r = 4	11.01	21.13	r = 4	22.35	29.80
r = 5	8.31	14.26	r = 5	11.34	15.49
r = 6	3.03	3.84	r = 6	3.03	3.84

Note: critical values appear in Mackinnon – Haug – Michelis (1999).
***indicate 1% level of confidence
** indicate 5% level of confidence
Author's Computation, 2018.

The test statistics indicated that the hypothesis of no cointegration among the variables can be rejected for Nigeria. The results reveal that at least two cointegrating vectors exist among the variables of interest for both the minimum Eigenvalue statistic and trace statistic.

Estimation of Lag length Selection for SVAR

The addition of sufficient number of lags helps avoid spurious result in the SVAR model. It has been established in literature that VAR depends on lag order as the selection of different lag orders can affect the interpretation of VAR estimates adversely especially when the difference is large (Hamilton and Harrera 2004).

Therefore, incorrect specification of the lag of SVAR model can lead to inconsistency in impulse response and variance decomposition (Braun and Mittink 1993).This study used various lag length identifiers such as Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Information Criterion (SC), and Hannan – Quinn Information Criterion. In estimating the SVAR model, a maximum lag order of 2 with constant and linear deterministic terms was allowed and considered most appropriate.

Table 4.3 VAR Order Selected Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1755.948	NA	22366.74	29.88047	30.04483	29.94720
1	-479.5021	2379.814	2.07e-05	9.076307	10.39121	9.610195
2	-358.2221	211.7261*	6.12e-06*	7.851222*	10.31666*	8.852263*
3	-320.7432	60.98251	7.60e-06	8.046496	11.66247	9.514689

4	-288.0050	49.38476	1.04e-05	8.322119	13.08864	10.25747
5	-254.1486	47.05465	1.44e-05	8.578790	14.49585	10.98129
6	-203.0902	64.90480	1.55e-05	8.543901	15.61150	11.41355

* indicates lag order selected by the criterion. LR: sequential modified LR test statistic (each test at 5% level).

Source: Author's computation, 2019

Impulse Response

The impulse response function (IRF) traces out the dynamic response of each macroeconomic variable to oil price shocks. It enables an individual to analyze the response of one variable to a random shock in another variable while maintaining the original units of the data as well as providing an estimate of uncertainty. Table Figure 4.4 shows the response of gross domestic product, consumer price index, unemployment rate, stock prices, interest rate, and exchange rate to oil price. Each figure traces the effect of a one – time shock to the measures of oil shocks on the current and future values of each of the macroeconomic variables.

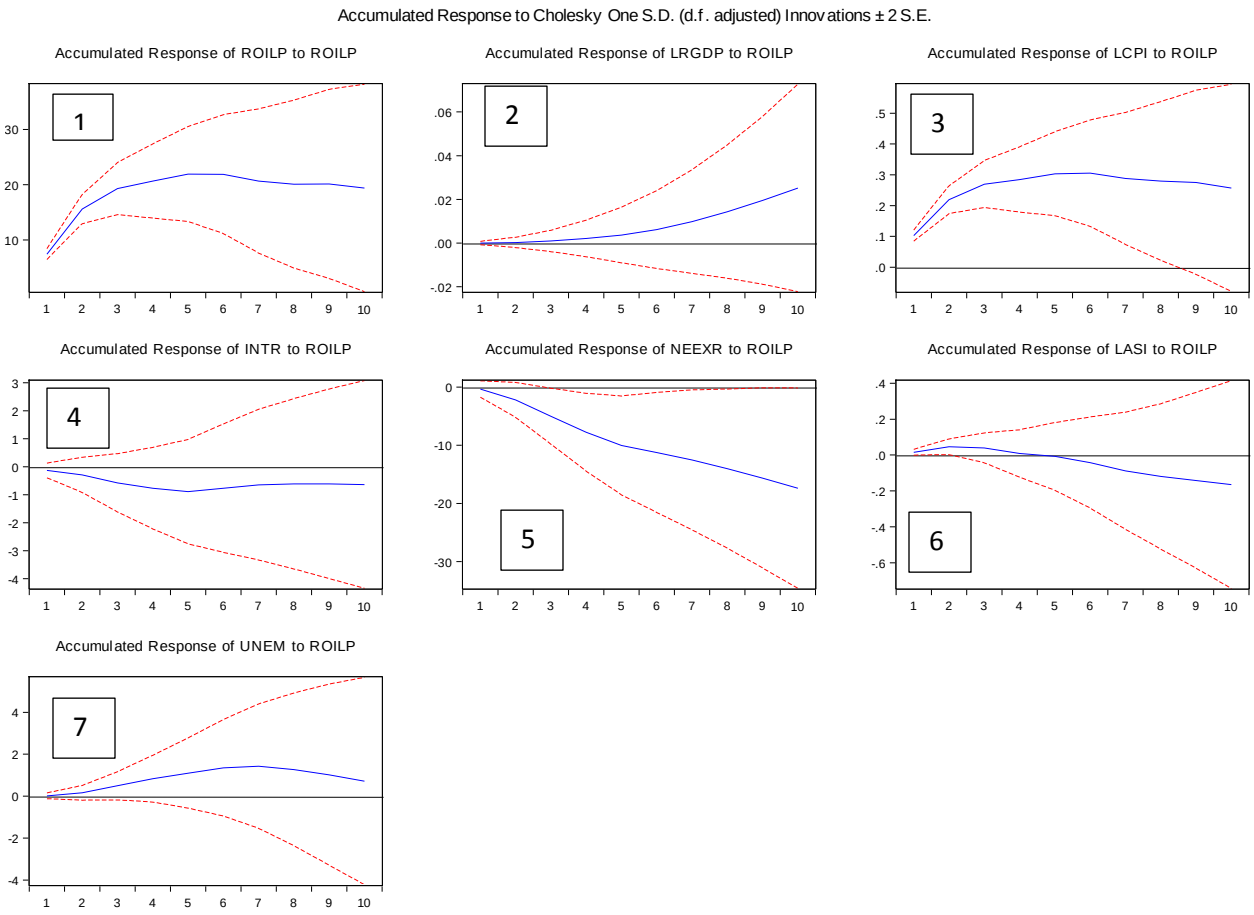

Fig. 4.2.6 Accumulated impulse responses of macroeconomic Variables to Oil Price Shocks

The impulse response of the SVAR estimate suggest a one standard shock in oil price will cause a slow but steady increase in output throughout the horizon. This implies that an increase in oil price will lead to an increase in output through an increase in oil revenue. Plane 3 suggests a clear positive response in inflation rate, this suggests that an increase in oil prices can be inflationary with an increase in output for the Nigerian case . This study is contrary to that of Omojolaibi (2013) but consistent with Iklaga and Evboomwan (2012). Unemployment responded positively to a one standard shock in oil price which implies that an increase in oil price would invariably increase unemployment. The implication of this study is that increase in oil price which is expected to increase government revenue has not translated its revenue to bring about reduction in the rising unemployment in the country. The negative response of unemployment to oil price shocks could be associated to increased population, misappropriation of funds or bad governance.

Similar to Mordi and Adebiyi (2010) and Akinlo (2004), Stock prices responded positively during the first 3 quarters before declining to the negative till the end of the period. This suggests that when oil price increases, stock prices responds negatively; this can be associated to the underdevelopment of the Nigerian capital market. While interest rate and exchange rate had a negative response to one standard shock in oil price indicating an appreciation on exchange rate.

Variance Decomposition

The decomposition of forecast variance was used to examine how much the fitted SVAR deviates from the actual values of the vector of endogenous variables. What percentage of a variable's deviation from its forecasted value was attributable to another variable provided additional insight into historical relationships (Oseni 2014). Table 4.2.7 report the result of the forecast error variance decomposition for the SVAR model of the relationship between oil price and macroeconomic variable.

Table 4.2.7.1 Variance Decomposition Result on Output Growth

Variance Decomposition of LRGDP								
Period	S.E.	ROILP	LRGDP	LCPI	LASI	INTR	NEEXR	UNEM
1qtr	0.0067	0.0000	100.00	0.0000	0.0000	0.0000	0.0000	0.0000
4qtr	0.0154	8.5599	82.082	0.1044	0.2854	0.4600	0.6039	7.9037
8qtr	0.0260	11.585	57.459	0.4919	0.1643	1.3480	0.5249	28.426
10qtr	0.0316	10.290	46.915	0.8932	0.3767	1.4621	0.3906	39.671

Output

The largest source of shocks for output is unemployment which contributed about 7.9% in the fourth quarter, rising to about 28.4% in the eight quarter and 39.7% in the tenth quarter after its own innovation. The contribution of oil price shocks to output contributed about 8.6% in the fourth quarter, 11.6% in the eight quarter and

dropped to 10.3% in the tenth quarter. Interest rate contributed about 0.46% in the fourth quarter and increased to 1.34% in the eight quarter with a little rise in tune of 1.46% in the tenth quarter. The contribution of inflation was not so significant with 0.1% impact in the fourth quarter, 0.4% in the eight quarter and about 0.9% in the tenth quarter. Stock prices and exchange rate shocks were not significant in determining output, there contribution in the tenth quarter amount to 0.39% and 0.38% respectively.

Table 4.2.7.2 Variance Decomposition Result of inflation Rate

Variance Decomposition of LCPI:								
Period	S.E.	ROILP	LRGDP	LCPI	LASI	INTR	NEEXR	UNEM
1qtr	0.1523	0.0000	0.0993	99.900	0.0000	0.0000	0.0000	0.0000
4qtr	0.2420	0.1701	0.3670	97.291	0.0541	0.3955	0.1474	1.5742
8qtr	0.2792	0.2466	0.5081	89.291	0.0640	0.7327	0.5589	8.5977
10qtr	0.2928	0.2262	0.4754	83.984	0.0928	0.6948	0.7496	13.776

Unemployment changed account for the largest share of shock in inflation, while oil price shock explained relatively little. The unemployment changes contributed 1.6% in the fourth quarter, rose to 8.5% in the eight quarter and 13.8% in the tenth quarter. Exchange rate contributed 0.1% in the fourth quarter, 0.6% in the eight quarter and 0.7% in the tenth quarter. Oil price shocks which are our target variable only accounted for about 0.17% in the fourth quarter, 0.24% in the eight quarter and dropped to 0.22% in the tenth quarter. The contribution of exchange rate rose from 0.1% in the fourth quarter to 0.6% in the eight quarter and then 0.7% in the tenth quarter. Output contributed insignificantly with the tune of 0.09% in the first quarter, 0.4% in the second quarter. 0.5% in the eight quarter and dropped to 0.48% in the tenth quarter. Stock price changes did not contribute significantly to inflation, this can be seen in its contribution as at the tenth quarter amounting to 0.09%.

Variance *Decomposition Result of Exchange Rate*

Table 4.2.7.3 Variance Decomposition of NEEXR

Variance Decomposition of NEEXR								
Period	S.E.	ROILP	LRGDP	LCPI	LASI	INTR	NEEXR	UNEM
1qtr	8.4235	0.0000	0.0329	3.0186	0.0041	1.2364	95.707	0.0000
4qtr	14.458	4.8458	0.0292	9.2931	0.0802	0.9089	84.407	0.4348
8qtr	18.264	10.795	0.0194	15.036	0.0757	2.3725	70.435	1.2644

10qtr	19.438	12.516	0.0183	16.619	0.1676	2.8662	66.166	1.6465

The variance decomposition revealed that inflation changes and oil price shocks significantly contribute to exchange rate with inflation contributing to the largest source of shocks. Inflation contributed 3% in the first quarter, 9.3% in the fourth quarter, 15% in the eight quarter and about 17% in the tenth quarter. Oil price shocks contributed 4.8% in the fourth quarter, 10.8% in the eight quarter and 12.5% in the tenth quarter. Our result output did not contribute significantly to shocks in exchange rate as it was less than 1% over a ten month period. Unemployment contributed about 0.43% in the fourth quarter, 1.26% in the eight quarter and about 1.65% in the third quarter. Another insignificant variable is stock price which contributed 0.08% in the fourth quarter, dropped to 0.07% in the eight quarter and increased to 0.17% in the tenth quarter.

Variance Decomposition Result of Interest Rate

Table 4.2.7.4 Variance Decomposition of INTR

Variance Decomposition of INTR								
Period	S.E.	ROILP	LRGDP	LCPI	LASI	INTR	NEEXR	UNEM
1qtr	1.3894	0.0000	6.7536	0.2775	0.6417	92.327	0.0000	0.0000
4qtr	2.2405	0.4431	6.3800	0.1309	0.9530	91.719	0.2273	0.1463
8qtr	2.5211	2.2664	5.8398	0.1275	1.3951	88.958	0.9300	0.4818
10qtr	2.5746	3.4867	5.6310	0.1403	1.6307	87.161	1.3207	0.6284

The variance decomposition of interest rate showed that interest rate divergences are more responsible to their own shock, but output changes and oil price shocks still contribute significantly to changes in interest rate. Output contributed 6.8% in the first quarter, dropped to 6.4% in the fourth quarter and a further drop of (5.8%) was evident in the eight quarter and in the tenth quarter it contributed about 5.6%. However, oil price shocks contributed 0.4%, 2.3%, and 3.5% in the fourth, eight and tenth quarter respectively. Therefore, the contribution of exchange rate, unemployment and stock prices do not significantly contribute to interest rate as evidenced by the table. Unemployment contributed 0.1% in the fourth quarter, 0.5% in the eighth quarter and 0.6% in the tenth quarter. Stock prices contributed 0.2%, 1.40% and 1.63% respectively in the fourth, eighth and tenth quarter respectively, while exchange rate contributed 0.2%, 0.9% and 1.3% to changes respectively in interest rate.

Variance Decomposition Result of Unemployment

Table 4.2.7.5 Variance Decomposition of UNEM

Variance Decomposition of UNEM:								
Period	S.E.	ROILP	LRGDP	LCPI	LASI	INTR	NEEXR	UNEM

1qtr	0.8520	0.0000	0.2305	0.4209	2.9092	0.2871	0.0804	96.071
4qtr	1.7989	1.6340	0.2299	2.0427	0.9540	1.9635	0.2907	92.884
8qtr	2.7974	3.5403	1.0608	4.9859	1.0764	4.1546	0.4130	84.768
10qtr	3.2756	4.0256	1.5350	6.4053	1.6932	4.7948	0.4431	81.102

Inflation contributes the largest shock after the innovation of unemployment. It contributes about 0.4% in the first quarter, 2% in the fourth quarter, about 5% in the eight quarter and 6.4% in the tenth quarter. Following the changes in inflation the interest rate, which contributed 0.29% in the first quarter, 1.96% in the fourth quarter, 4.2% in the eighth quarter and 4.8% in the tenth quarter. The contribution of oil price shocks was about 1.6 in the fourth quarter, 3.5% in the eighth quarter and 4.0 in the tenth quarter. Stock prices contributed 2.9% in the first quarter, dropped to 0.95 in the fourth quarter, increased to 1.08% in the eighth quarter and rose to 1.69%. Output contributed 0.23%, 0.23%, 1.06% and 1.54% in the first quarter, fourth quarter, eighth quarter and tenth quarter respectively. Interest rates do not significantly contribute to changes in unemployment, as it was less than 1% over the ten month period.

Variance Decomposition Result of Stock Prices

Table 4.2.7.6 Variance Decomposition of LASI

Variance Decomposition of LASI:								
Period	S.E.	ROILP	LRGDP	LCPI	LASI	INTR	NEEXR	UNEM
1	0.1056	0.0000	0.2147	7.1951	92.590	0.0000	0.0000	0.0000
4	0.2063	2.2179	0.1728	7.0366	86.759	3.3805	0.1054	0.3269
8	0.2977	4.2829	0.5645	5.7106	76.369	11.182	0.1884	1.7018
10	0.3377	4.4586	0.6814	5.1626	72.273	14.469	0.2105	2.7438

Interest rate changes contributed the largest shocks to stock prices with share of 3.4%, 11.2% and 14.5% in the fourth, eighth and tenth quarter. This was followed by inflation which accounted for 7.2% in the first quarter, dropped to 7% in the fourth quarter, had a further drop to 5.7% and finally dropped to 5.1% in the tenth quarter. The oil price shocks contributed 2.2% in the fourth quarter, 4.3% in the eighth quarter and 4.5% in the tenth quarter. The rest of the variable contributed insignificantly to the changes in stock prices. Their contribution was less than 1% in the ten – month period.

Conclusion

The result of the impulse response and variance decomposition indicates that all the variables of interest are highly sensitive to oil price shocks. This study therefore concludes that oil price shocks do impact the macroeconomic of Nigeria.

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