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Effect of Oil Price Instability on Financial Sector Fragility in Nigeria

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Abstract

This research empirically seeks to investigate the relationship between oil price instability and financial sector fragility in Nigeria using data from Statistical bulletin of Central Bank of Nigeria from 1982 to 2017. Essentially, the main thrust of the study was to examine how fluctuations in oil prices in the international market transmit to fragility in the financial sector. Regression analysis was used to analyze the impact of oil price instability on financial soundness indicators in the country. The result showed that oil price instability has a significant relationship with financial soundness indicators which in turn can lead to financial fragility. The recommendation based on the findings is that government and other stakeholders should take proactive measures to stem the effect of oil price downward movements on the financial sector and adopt appropriate adjustment mechanism that will counter the adverse effect.

Key Words: Financial Fragility, Oil Price, Economic Diversification, Financial Indicators

Paper Classification: Research Paper

Introduction

Recent happenings as regards major prices of commodities have been outstanding in various ways. Commodity price changes have not only deepened in the past few decades, the frequency of such changes has also become more rapid. The period between 2002 and 2008 witnessed a substantial boom in prices and this was immediately followed by a collapse in most commodity prices as a result of financial crises suffered globally that manifested in mid-2008. Basic understanding of the market suggests that the fundamental factors that drove commodity price movements during the boom period included increase in demand for most commodities from developing countries, decrease in supply from exporting countries and policies encouraging the use of food commodities for other purposes. However, a new and recent development in relation to financial assets has begun to play important roles in this direction. This has also coincided with greater weight being attached to commodity derivatives markets of financial investors which considers commodities as an asset class (UNCTAD, 2011).It affected the processes of financial inclusion and credit supply observed in many African countries few years ago, that experienced solid growth in credit supply with the resultant detrimental effects on economic diversification

and growth (Spatafora & Tytell, 2009). Indeed, such spill over could be much stronger in Nigeria where the oil price fall has been quite phenomenal over the past two years. Another aspect to the scenario of deep fluctuations in oil prices is the associated exchange rate crises which are quite rampant for many African economies, including Nigeria. In a few economies where dollar demand is often high, the currency depreciation that followed may also lead to the escalation of the financial sector susceptibilities. In such circumstances, the existing exchange rate depreciation will make foreign currency denominated loans expensive to maintain, especially for uncovered borrowers and potentially expose banks to huge losses, although banks themselves also do have mismatch in their currency transactions.. High external debt stock may also build up and worsen these adverse effects for these countries, especially where some firms involved in exporting these commodities have been borrowing in foreign currencies (Ilzetzki et al, 2008; Kaminsky & Reinhart, 1999).

Both theoretical and empirical studies demonstrate that commodity price instability can give rise to financial fragility through various channels (Papyrakis & Gerlagh, 2004; Tiago et al, 2012; Kinda, Mlachila & Ouedraogo, 2018). First, following a crash in commodity prices of most commodity exporting countries, their earnings will be reduced drastically and this will lead to adjustment in the fiscal policy to deal with the lower revenue. These can negatively affect the economy and thus making it difficult for government (the agent of the economy) to meet its debt obligations when due thereby giving rise to a weak banks' statement of financial position. Secondly, if the Government fails to bring down public expenditure in the light of decreasing revenues, arrears of salaries and other obligations might start to accumulate. This will put suppliers and other stakeholders in a difficult financial situation that may eventually increase the default or credit risk on their bank loans. Fourth, depending on the degree of shock, it can put a serious burden on the local currency. The fall in value in the exchange rate might graduate to banks reported losses in their foreign exchange position as shown in their statement of financial position. It might also lead to borrowers that are not hedged to be unable to repay their loans. These create challenges to the financial industry in terms of stability and coordinated activities. The recent round of sharp decline in commodity prices (including oil prices) is not actually a one off activity. Oil price has frequently experienced deep fluctuations for a very long time. Indeed, the frequent instability has led to several scholars trying to diagnose the effect of crash in oil prices on the economy (Deaton & Miller 1995; Dehn, 2000) and on domestic / external debt (Arezki & Bruckner, 2012). However, various literatures reviewed lacks a clear cut empirical investigation of the real effect of a particular commodity price instability on the financial industry of each country exporting commodities, especially those of the Sub-Saharan region. This has become a direct challenge to individual countries with different commodity exports. For Nigeria, the financial sector has been developing fairly rapidly over the past few decades, yet the linkage between the sector and the main price of export commodity in Nigeria has not been well defined. This research seeks to find out the effect oil price instability has on financial sector fragility in Nigeria. Recently, Nigeria has suffered dislocation in financial sector following crash in price of oil.

The central purpose of this paper is to investigate the relationship between instability in prices of oil and fragilities in the Nigerian financial sector. In more specific terms, the study aims to:

i. Find out if there is a relationship between oil prices instability and financial sector indicators in Nigeria
ii. Determine whether oil price changes could help forecast financial sector and banking performance in Nigeria

Review of Literature

Financial Fragility

According to the World Bank (2013), a stable financial system is one that maintains normal employment rate, efficiently allocates resources and ensures adequate management of financial risks. It also eliminates comparative movement in prices of real and financial assets that ensures monetary stability. When there is stability, unforeseen shocks in the system will be absorbed while there is also self correction mechanism that will not allow the economy to be disrupted. Since most transactions in an economy pass through financial industry, its stability is very crucial for the growth of economy. The value of stability in financial system is best appreciated when there is instability as the economy will usually be characterized by adverse conditions in form of hyperinflation, stock market crash etc. During this period, banks are not usually willing to lend to critical sectors and asset prices deteriorate significantly (World Bank, 2013).

In assessing financial fragility of any nation, scholars and policy makers have focused on some of quantitative measures. There are the direct measures that show how resilient the financial sector has been over time, especially during shocks from outside the system (World Bank, 2013; Hawkins & Klau, 2000). These measures have been aptly called financial soundness indicators.

There are also alternative indicators since a financial system is made up of a number of important sectors, and how these relate to each other. This is further compounded by the non-linearity nature that can influence the transmission of shocks and its extension among the sectors (ECB, 2015). For example, there exists links between financial and monetary stability due to the fact that asset prices has effect on the monetary conditions and vice versa. For proper assessment of financial stability, it is not always enough to use benchmarks from individual sectors and focus only on deviations there from. Various attempts have been made by different authors to develop alternative assessment criteria that will better predict and signal financial distress at the onset instead of relying on indicators arising from analyzing the individual variables in the financial systems

There are on-going studies to develop leading indicators that would give signal to stress conditions beginning with early warning indicators. It is always better to combine multiple indicators where they are available in such a way that they will best capture the relationship between individual indicators. For the purpose of assessing and checking various aspects of the economy and also serve as key signals when there is crisis, there are composite indicators that combine each factors (e.g. bank credit related to GDP) that are assigned values and are used in measuring economic conditions.

Kaminsky and Reinhart (1999), used the "early warning indicator" techniques developed for balance of payments and currency crisis. This technique or indicator was later introduced to identify crisis in the banking industry. Demirgüç-Kunt and Detragiache (1997) examined how banking distress affects developing countries using multivariate logit approach. These determinants are: weak institutions and explicit deposit insurance, past credit growth, high proportion of loans granted to private sector, low liquidity in banking sector, susceptibility to sudden capital outflows, high inflation and slow GDP growth.

In theory, ECB (2015) noted that financial stability index is better measured in standard aggregate than through individual variables. They are also better suited in measuring the level of stress or crisis in the system even when there are no outstanding signals. Francis (2003) noted that building aggregate measure of financial stability index is a cumbersome process due to the

linkages existing among various sectors of the economy. In absence of aggregate index, simpler measuring tools such as banking stability and market liquidity index may be used as shown in several FSRs. Nevertheless, FSRs would be needed in the examination of important variables in the industrial sector and financial systems as well as other external sector variables whether constructed as a single cumulative financial stability measure or not.

Furthermore, when calculating a single cumulative indicator of financial stability, a different weight is assigned to each variable that makes up such cumulative measure thus reflecting the characteristic of the aggregate. For example, a financial imbalance that might exist between long-term and short-term liabilities may be assigned a lesser weight since conversion of a maturing obligation is a recurring financial business and these risks can be mitigated by banks through derivatives from interest rate. Similarly, failures in the price discovery process and market volatility are considered in the assignment of weights to market volatility, since low volatility implies that there is a stable condition.

Alesandro and Matteo (2008) assert that variations in the prices of commodity can translate into changes in government fiscal performance. Fiscal performance depends significantly on the prices of commodity in countries that export such commodity. A reduction in the prices of commodity globally can worsen the terms of trade and decrease government tax revenue.

In the absence of fiscal adjustment (that is, reduction of unnecessary spending), a negative price shock transmits directly into drastic fall in government revenues as well as escalates fiscal deficits. Conversely, a fiscal adjustment following a sudden change in prices can shrink the income of firms that survive on government patronage, thus weakening the banks' statement of financial position.

Government that implements fragile fiscal policy always carries out disorganized fiscal adjustments via the build-up of contractors and suppliers payment arrears. The combination of the competitiveness and losses of tax revenues in addition to fiscal deficits carry a heavy risk to the financial system. This resulted to the fall in revenue of the Angolan government from 40.4% to 34.2% of GDP in 2013. IMF (2015) shows that the reductions in real government expenditure occurred frequently in the 1990s, but occasionally since 2000 due to downturns in real oil prices. It could also be linked to the build-up of fiscal shields over the last 20 years which permitted government the time to curb economic activities during downturns in price of oil.

Moreover, Omojolaibi and Egwaikhide (2013) empirically examined how oil boom affected developing and developed countries within the "Dutch Disease framework". This model was typically applied in the reallocation of productive factors among different economic activities. IMF (2015) asserts that sectoral variations resulting from boom in resource are frequently affected by movement in relative prices. This model according to IMF(2015) is arrived at on the assumptions that different goods and services are produced in an open economy. The non-tradable comprise of prices adapted to changes in domestic supply and demand conditions, while the tradable is made up of exports and imports with exogenously determined world prices.

The export-competing sector and booming sector are the two forms of tradable sector. The booming sector affects the economy via the resource-movement mechanisms and spending channel. The spending channel analyses a model that reflects the growing sector within a non-existing supply side connection with the entire economy. The sector that is booming enhances received income; hence a change in relative prices based on a high income level is spent on different goods. The output of the non-tradable sectors pose a rising pressure on prices within the sector due to excess demand while an upsurge in demand for the tradable sector is enlarged via rise in imports. The shift in resources influences the growing sector and links the whole economy

through the supply side linkage. A rising swing in the demand curve for non-tradable sectors due to a boom implies a rise in relative prices. The price change leads to a rising shift in wages of tradable sector due to the flow of labor services to other sector since labor is assumed to be the only factor that is mobile.

Oil Prices and the Economy

Majority of work on oil price shocks effects have focused on how it relates to the economy at large or its real aggregates. In this study, the literature in this area is considered drawing inferences from the entire economy and specifically the financial industry.

The crashes in the price of commodity tend to destabilize economic performance. Deaton and Miller (1995) assert that slumps in the global commodity prices triggered a lesser economic development in 35 Sub-Saharan African commodity exporting countries. Similarly, Dehn (2000) investigated 113 emerging economies from 1957 to 1997 and the result shows that high commodity price crash extremely reduced growth rates of capital in the countries examined. They also found out that despite volatile world prices, growth was not affected by the price uncertainty since growth is focused on the real realization of negative shocks.

Honoham and Beck (2010) investigated 39 African countries from 1980 to 2006 and found that the probabilities of an outbreak of civil war as well as growth in GDP were negatively related with commodity price shock during that period. They observed that most of the macro-economic adjustment policy emanating from decline in current spending was a clear reaction to the 2009 reduction in the prices of commodity demonstrated by pro-cyclical fiscal policies.

Dosmagambet Y., Oskenbayev F., Taghizaden-Hesary and Mukam M. (2018) investigated oil price changes, creditworthiness of their financial system and financing of SMEs in Kazakhstan using structural VAR method. The outcome of the investigation is that the credit worthiness of Kazakhstan financial industry wholly depends on oil price movement. The result also revealed that changes in oil price negatively impacted the value of their currency as well as the financial status of their SMEs.

Godswill O., Abiola A., Ochei A., Emeka B., and Pelumi W. (2019) studied the effect of global oil price crash on some selected bank indices in Nigeria. Simple linear regression and descriptive statistics was used to analyze the data from selected deposit money banks. The outcome of the analysis revealed a strong link between oil price crash and bank performance resulting in low profitability, increase in delinquent loans and decrease in deposit liability. The paper recommended that the economy be diversified from oil to resolve the situation.

Methodology

The design applied in this paper is the time series design where the trend in certain variables over a period of time is observed, explained and analyzed. The co-movements of financial/ banking sector activity indicators with oil price over a period of 35 years will be investigated for Nigeria. The analysis involves determination of any form of relationships among the variables, estimation of such relationships and predication of the pattern of such relationships for other periods. The study comprises examining oil price fluctuations in commodity exporting countries with specific reference to Nigeria. This study examined the financial performance in Nigeria in periods of oil boom and downturn. Nigeria was chosen among the commodity exporting countries in Africa, being the largest economy in the continent.

Time series data generated annually covering the period 1982 to 2017 was used in the analysis. The data on financial sector indicators are obtained from statistical bulletin generated from Central Bank of Nigeria (CBN) and the World Bank statistics. The data on oil prices are generated from the IMF World Financial Statistics (IFS) database for 2017.

Model Specification

The objectives of this research was used to generate the model based on oil prices effects on financial sector. In order to get the correct prediction of oil price fluctuation on financial sector fragility, the model were expanded. This was done because financial soundness indicators use continuous variables while that of banking crises use binary variables. Henceforth the equation for financial fragility model is stated thus:

$$FSI_t = \alpha + \beta Priceshock_t + \sum_{m=1}^{m} Y_m X_{m,t-1} + e_t \quad (1)$$

Where FSI represents financial soundness indicator and *Price shock* represents oil price fluctuation, $X_{m,t-1}$ represents control variables of interest at time, t and e_t stands for error term. The measures of financial soundness indicators for Nigeria included in the equation are proportion of bank liabilities to total financial liabilities, ratio of bank credit to total credit extended to private sector, interest rate spread, ratio of non-performing loans, real deposit growth, and total bank credit growth. Each of the measures is obtained based on the empirical and theoretical literature earlier reviewed. The vector of control variables includes interest rate (the monetary policy rate), exchange rate, inflation, m2/reserve ratio, real GDP per capital growth, and the ratio of fiscal deficit to GDP to capture the fiscal stance of government. In its expanded form, six equations are specified for estimation in the relationships as:

$$blr = \alpha_1 + \alpha_2 priceshock + \alpha_3 mpr + \alpha_4 exrt + \alpha_5 infl + \alpha_6 rpci + \alpha_7 fdr + u_1 \quad (2)$$

$$bcr = \beta_1 + \beta_2 priceshock + \beta_3 mpr + \beta_4 exrt + \beta_5 infl + \beta_6 rpci + \beta_7 fdr + u_1 \quad (3)$$

$$spread = \lambda_1 + \lambda_2 priceshock + \lambda_3 mpr + \lambda_4 exrt + \lambda_5 infl + \lambda_6 rpci + \lambda_7 fdr + u_1 \quad (4)$$

$$nplr = \delta_1 + \delta_2 priceshock + \delta_3 mpr + \delta_4 exrt + \delta_5 infl + \delta_6 rpci + \delta_7 fdr + u_1 \quad (5)$$

$$rdg = \gamma_1 + \gamma_2 priceshock + \gamma_3 mpr + \gamma_4 exrt + \gamma_5 infl + \gamma_6 rpci + \gamma_7 fdr + u_1 \quad (6)$$

$$bcrg = \phi 1 + \phi_2 priceshock + \phi_3 mpr + \phi_4 exrt + \phi_5 infl + \phi_6 rpci + \phi_7 fdr + u_1 \quad (7)$$

Where

blr = ratio of bank liabilities to total financial liabilities

bcr = ratio of bank credit to total private sector credit;

spread = interest rate spread (difference between lending and deposit rates);

nplr = ratio of non-performing loans to total bank loans;

rdg = real deposit growth;

bcrg = total bank credit growth;

mpr = interest rate (the monetary policy rate);

exrt = exchange rate;

infl = inflation rate,

mrr = broad money/reserve ratio;

rpci= real GDP per capital growth; and

fdr = fiscal deficit to GDP

The model in equations (2 to 7) therefore explains how an oil shock primarily affects financial soundness in the country in the face of economic policies of the country. In terms of estimation, the equation presented contains variables which are endogenous to each of the models. This is because the variables are primarily financial and nominal in nature. An appropriate estimation technique that takes care of the simultaneity problem is therefore adopted for the estimation of the equations. The method used is the generalized method of moments (GMM).

Data Analysis

The goal here is to estimate and analyze the models using appropriate techniques and also draw valuable outcomes for testing the hypotheses and also to draw valid conclusions. In conducting the empirical analysis, both econometric and statistical methods are employed. The initial characterization of the data is done using the statistical techniques, while the estimation of relationships and other parameters for testing the hypotheses is done using econometric techniques. Moreover, because most macroeconomic and financial sector variables trends overtime indicate time variation, there is the need to find more about the time series features of the data used for the empirical analysis. These would involve testing for stationarity of variables in the model (unit root tests) and whether or not there is any proof that the variables have long run relationship among themselves (ie co-integration tests) Gujarati(2003). In particular, a key additional assumption for the Generalised Method of Moments (GMM) estimator requires the first differences of the variables included in the models to be uncorrelated with the individual effects. This assumption is guaranteed to be valid if the series have constant means over time or are stationary. This is another justification for carrying out time series tests for the dataset.

Summary Statistics of Data

Table 1: Descriptive Statistics

	Mean	Maximum	Minimum	Std. Dev.	Skewness
BLR	52.73	68.01	37.11	10.86	-0.02
BCR	85.36	98.93	51.66	15.93	-0.13
BAGDP	28.14	70.67	11.38	13.04	1.79
SPREAD	9.89	20.70	-0.25	5.75	-0.28
NPLR	20.33	39.37	3.24	9.66	-0.05
NBB	2875.41	5809.0	869.0	1540.21	0.75
MPR	12.92	26.0	6.0	4.19	0.76
CRG	23.23	99.94	-35.63	26.87	1.09
RDG	25.46	59.40	-6.50	16.94	0.44
RGDPG	4.23	11.40	-6.60	3.90	-0.47
FDR	-4.77	1.19	-12.44	3.69	-0.42
EXRT	68.31	168.29	0.61	64.31	0.23
INFL	21.21	72.81	4.67	18.36	1.40
OILP	38.82	106.20	10.1	31.19	1.19
OILPV	4.04	32.01	0.21	4.42	3.12

Source: Authors compilation from regression estimates, Oct 2018

From the table, the fraction of bank liability in the financial system is 52.73 percent over the period of the analysis, which is a high. This reveals that over half of the financial industry liability

in the country is controlled by the banking system. Thus, the banking system is shown to have a full grip of the monetary liability in the country when compared with other financial institutions in the country. The maximum value reached as much as 68 percent of the total financial liabilities in the system. Compared with the mean value, the standard deviation value of 10.86 is low and indicates that much variation did not occur over the period in terms of the liability ratio of banks.

Proportion of bank loans to the private sector was 85.36 percent average for the period. This is also high and reveals that the credit in the Nigerian economy has been mainly financed by the banking industry in the past decades. There were periods in the study when the ratio was almost 100 percent. Thus, the banking sector has played the biggest role in credit supply in Nigeria. This throws a very strong issue up for evaluation, namely, the extent to which the financial sector will be affected when the banking sector encounters crisis. As experience has shown, banking sector crisis has always translated to financial sector crisis in Nigeria at any given time. Bank asset to GDP ratio is 28.3 percent for the sample period, with a maximum value reaching 70 percent.

Average interest rate spread is below 10 percent for the entire sample period, although the maximum value of 20.7 percent reveals that the gap between lending and deposit rates in the country has been very large and unrealistic for adequate participation in the money market in Nigeria. The ratio of non-performing loans averaged at 20.3 percent in the entire period, suggesting that loan operations in the banking sector has not performed quite well over the period. As noted in Obadan & Adegboye (2016), this loan issues have been the perennial root cause of banking and financial sector fragility in Nigeria. Surprisingly, average monetary policy rate for the period is higher than the interest rate spread in the banking industry, while both credit and deposit growth have been almost at the same proportion for the analysis period.

For oil prices, the average level was 38.8 dollars per barrel for the period. The maximum value reached 106.3 dollars while the minimum value just 10.1 percent. This shows wide discrepancies over time as shown by the oil price volatility (OILPV) statistics. Average volatility rate of 4.04 percent shows that the variations in oil prices were over 400 percent over the periods which have been above the expected levels for the period. The standard deviation is higher than the average value, suggesting wide variations in the series over time. The skewness value is also very high, and indicates that values of the volatility variables were below the average value for most of the years.

Unit Root and Co integration Analysis

Unit root test is used in regression analysis to test the stationarity of the data used. The importance of unit root test lies in the fact that if the time series is not stationery; it may be impossible to generalize prediction to cover other periods apart from the present. This will result in such prediction being of intrinsic or no value. Also spurious result may be produced if regression analysis is carried on such data overtime (Gujarati, 2003).

Table 2: Unit Root Test for Variables in Levels

Variable	ADF Test Statistic	95% Critical ADF Value	Remark
bcr	-2.25	-2.96	Non-stationary
spread	-1.48	-2.96	Non-stationary
nplr	-1.21	-2.96	Non-stationary
crg	-3.57	-2.96	**Stationary**
rdg	-3.06	-2.96	**Stationary**

nbb	-0.33	-2.96	Non-stationary
bagdp	-2.18	-2.96	Non-stationary
oilp	0.47	-2.96	Non-stationary
mpr	-2.4	-2.96	Non-stationary
exrt	-0.11	-2.96	Non-stationary
fdr	-2.78	-2.96	Non-stationary
infl	-3.45	-2.96	**Stationary**
rgdpg	-3.39	-2.96	**Stationary**

Source: Result extracted from the Eviews 9 output

To analyze unit roots, the Augmented Dickey Fuller (ADF) test was employed. The results are shown in levels and first difference. It assists to find out if there is unit root in the data and also makes the result more comprehensive. Without considering the trend in variables, Table 2 shows the result in levels. The second column shows the result of ADF test statistic for each of the variables, while the third column shows 95 percent critical ADF value. The result shows that four of the variables have value of ADF that is greater than the 95 percent critical ADF value of -2.96 (in absolute values). This indicates that these variables (*crg, rdg, infl, rgdp*) are stationary in levels. Apparently, most of these variables are transformed variables that represent growth rates and rates have been known to be time invariant. The implication of this is that (apart from the four stationary variables), the time series for other variables are not stationary in their level.

Table 3: Unit Root Test for Variables in First Difference

Variable	ADF Test Statistic	95% Critical ADF Value	Remark
Δblr	-4.72	-2.95	Stationary
Δbcr	-5.24	-2.96	Stationary
Δspread	-6.99	-2.96	Stationary
Δnplr	-4.61	-2.96	Stationary
Δcrg	-5.52	-2.96	Stationary
Δrdg	-4.75	-2.96	Stationary
Δnbb	-3.44	-2.96	Stationary
Δbagdp	-4.11	-2.96	Stationary
Δoilp	-4.22	-2.96	Stationary
Δmpr	-5.95	-2.96	Stationary
Δexrt	-3.65	-2.96	Stationary
Δfdr	-5.05	-2.96	Stationary
Δinfl	-5.94	-2.96	Stationary
Δrgdpg	-7.07	-2.96	Stationary

Source: Result extracted from the Eviews9 output

Going forward, unit root test is carried on each of the other variables taking their first difference. According to Box and Jenkins (1978), if differencing is performed on non-stationary variables it will enable it attain stationarity. Table 3 shows the result of the variables at first difference. Going through the results, it can be seen that all the variables have attained stationarity, the ADF test statistic showing result greater than the 95 percent critical values (in

absolute values). The implication of the result is that all the variables can attain stationarity only after the first difference. Hence, the hypothesis is accepted that the variables have unit roots and are all integrated of order one (i.e. 1[1]).

Table 4:Johansen Multivariate Cointegration Tests Results

Trace Test				Max-Eigen Test			
Hypothesized No. of CE(s)	Statistic	Critical Value	Prob.**	Hypothesized No. of CE(s)	Statistic	Critical Value	Prob.**
None *	178.3	125.6	0.0	None *	69.0	46.2	0.0
At most 1 *	109.3	95.8	0.0	At most 1	34.2	40.1	0.2
At most 2 *	75.1	69.8	0.0	At most 2	26.6	33.9	0.3
At most 3 *	48.5	47.9	0.0	At most 3	18.7	27.6	0.4
At most 4	29.8	29.8	0.1	At most 4	16.3	21.1	0.2
At most 5	13.5	15.5	0.1	At most 5	13.2	14.3	0.1
At most 6	0.3	3.8	0.6	At most 6	0.3	3.8	0.6
None *	249.69	159.53	0.00	None *	74.97	52.36	0.00
At most 1 *	174.72	125.62	0.00	At most 1 *	58.46	46.23	0.00
At most 2 *	116.26	95.75	0.00	At most 2 *	47.17	40.08	0.01
At most 3	69.09	69.82	0.06	At most 3	27.04	33.88	0.26
At most 4	42.05	47.86	0.16	At most 4	22.99	27.58	0.17
At most 5	19.06	29.80	0.49	At most 5	11.98	21.13	0.55
At most 6	7.08	15.49	0.57	At most 6	5.20	14.26	0.72
At most 7	1.88	3.84	0.17	At most 7	1.88	3.84	0.17
None *	133.98	125.62	0.01	None	43.58	46.23	0.09
At most 1	90.40	95.75	0.11	At most 1	30.89	40.08	0.37
At most 2	59.51	69.82	0.25	At most 2	16.92	33.88	0.93
At most 3	42.59	47.86	0.14	At most 3	16.19	27.58	0.65
At most 4	26.40	29.80	0.12	At most 4	13.29	21.13	0.43
At most 5	13.12	15.49	0.11	At most 5	12.31	14.26	0.10
At most 6	0.81	3.84	0.37	At most 6	0.81	3.84	0.37
None	86.65	95.75	0.18	None	32.34	40.08	0.29
At most 1	54.31	69.82	0.45	At most 1	23.04	33.88	0.53
At most 2	31.28	47.86	0.65	At most 2	11.98	27.58	0.93
At most 3	19.30	29.80	0.47	At most 3	11.43	21.13	0.60
At most 4	7.86	15.49	0.48	At most 4	7.84	14.26	0.40
At most 5	0.03	3.84	0.87	At most 5	0.03	3.84	0.87
None *	134.17	95.75	0.00	None *	52.03	40.08	0.00
At most 1 *	82.15	69.82	0.00	At most 1 *	41.00	33.88	0.01
At most 2	41.14	47.86	0.18	At most 2	17.95	27.58	0.50

At most 3	23.19	29.80	0.24	At most 3	13.44	21.13	0.41
At most 4	9.76	15.49	0.30	At most 4	9.72	14.26	0.23
At most 5	0.04	3.84	0.85	At most 5	0.04	3.84	0.85

**(**) denotes rejection of the hypothesis at 5% (1%) significance level.*

Source: Authors compilation from regression estimates, Oct 2018.

To determine if they are cointegrated, we shall go ahead to establish that the series in the analysis are all I(1) variables, possessing unit roots. The outcome from the multivariate test for cointegration is shown in Table 4. Note that the results are for each of the equations estimated under the hypotheses of the study. As shown in the tables since the hypothesis of no cointegrating vector (r=0) is to be rejected, both the λ-max and the trace test statistics reveal that there is one significant cointegrating vector among the variables. Arguably, the number of cointegrating vectors (indicated by r) is at least one. This shows that the variables has a long run relationship.

In order to provide broader outlines for the analysis, the correlation matrix, which shows the relationship among all the variables, is presented in Table 5. The probability values for the significance of each of the correlation coefficient are also reported in the results. The result shows that bank liquidity ratio (*blr*) has a significant positive correlation with bank lending activities, suggesting that the liability of the banking sector moves in the same direction with bank credit provision. The more lending the banking sector does, the more the liability accrued in the sector. Interest rate spread does not have any significant correlation with any of the other banking sector fragility (or development) measures. This shows a rather strong disconnection between banking sector interest rates and actual banking sector activates in Nigeria. Interest rate application may not be tied to any fundamental operational factor in the banking sector. Interest rate spread is positively correlated with bank branches and the banking sector asset ratio. Nonperforming loan is negatively correlated with banking sector liability ratio (in actual fact non-performing loan ratio has negative correlation with each of the financial sector indicator variables), but positively correlated with bank asset ratio. This suggests that bank assets and liabilities move together over time.

Table 5: Pair-Wise Correlation Matrix

Prob.	BLR	BCR	SPREAD	NPLR	CRG	RDG	BAGDP	MPR	NBB	EXRT	FDR	INFL	RGDPG
BCR	0.36												
Prob.	0.04	-----											
SPREAD	-0.05	0.03											
Prob.	0.78	0.86	-----										
NPLR	-0.49	-0.16	-0.37										
Prob.	0.00	0.38	0.03	-----									
CRG	-0.16	0.47	0.10	-0.06									
Prob.	0.37	0.00	0.58	0.73	-----								
RDG	-0.46	0.05	0.18	0.12	0.56								
Prob.	0.01	0.79	0.30	0.48	0.00	-----							
BAGDP	0.46	0.32	0.42	-0.41	0.34	0.24							
Prob.	0.01	0.07	0.01	0.02	0.05	0.18	-----						
MPR	-0.65	-0.36	0.13	0.48	0.08	0.34	-0.37						

Prob.	0.00	0.04	0.48	0.00	0.66	0.05	0.03	-----					
NBB	0.18	-0.21	0.70	-0.58	0.08	0.04	0.59	-0.20					
Prob.	0.30	0.23	0.00	0.00	0.65	0.83	0.00	0.26	-----				
EXRT	0.24	0.02	0.83	-0.63	0.15	0.14	0.61	-0.13	0.88				
Prob.	0.17	0.89	0.00	0.00	0.39	0.42	0.00	0.45	0.00	-----			
FDR	0.02	0.25	0.52	-0.45	0.33	0.14	0.31	-0.17	0.53	0.56			
Prob.	0.93	0.16	0.00	0.01	0.06	0.42	0.07	0.33	0.00	0.00	-----		
INFL	-0.42	-0.45	-0.28	0.48	-0.05	-0.07	-0.38	0.34	-0.22	-0.38	-0.10		
Prob.	0.01	0.01	0.11	0.00	0.77	0.71	0.03	0.05	0.20	0.03	0.56	-----	
RGDPG	-0.02	-0.05	0.43	-0.33	0.05	0.02	0.27	0.09	0.50	0.49	0.39	-0.21	
Prob.	0.90	0.79	0.01	0.06	0.80	0.93	0.12	0.63	0.00	0.00	0.02	0.24	-----
OILP	0.38	-0.19	0.49	-0.75	-0.05	-0.12	0.49	-0.44	0.86	0.78	0.40	-0.33	0.37
Prob.	0.03	0.29	0.00	0.00	0.79	0.50	0.00	0.01	0.00	0.00	0.02	0.06	0.03

Source: Authors compilation from regression estimates, Oct 2018.

Results and Interpretations

Here, the estimated model results are presented and analyzed. The estimations are done regarding the hypotheses of the research which informs the basis for reporting the results and performing the analysis.

Oil Price Instability and Financial Sector Indicators Stability in Nigeria

Table 6: Oil prices and financial sector.

Dep. Variable is Bank liabilities to total financial liabilities

Variable	GMM				2SLS		
	Coefficient	t-Statistic	Prob.		Coefficient	t-Statistic	Prob.
C	91.5**	6.36	0.00		93.7**	5.92	0.00
OILPV	**-0.11**	**-0.70**	**0.49**		**-0.15**	**-0.90**	**0.38**
MPR	-2.96**	-3.67	0.00		-3.17*	-2.89	0.01
EXRT	0.08	0.82	0.42		0.09	1.00	0.33
INFL	0.09	0.44	0.67		0.11	0.44	0.66
RGDPG	-0.89	-0.92	0.37		-0.67	-0.54	0.59
FDR	0.11	0.11	0.91		0.01	0.21	0.98
R-squared	0.472						
Adj R	0.363						
J-stat	1.09						
F		-			2.68		

Source: Authors compilation from regression estimates, Oct 2016.

The results for the empirical analysis are presented based on the different estimation of financial sector indicators . For robustness checks, the results shown in this section include the output of the Two Stage Least Squares estimates. This helps to provide a strong comparison in terms of the effectiveness of the GMM estimates reported. In Table 6, the result of oil price

instability effect on banking industry liability ratio is reported. The diagnostic statistics for the results are rather low with adjusted R squared value of 0.363 (note that the value for the 2SLS estimates are even lower). This indicates that just above 36 percent of the systematic variations in bank liability ratio was explained in the specified model. The J-statistic value measures the appropriateness (or validity) of the instruments used for the estimation of the GMM models. The J-statistic value of 1.09 fails the test of significance at the 5 percent level, suggesting that the null hypotheses of regularity or validity of instruments is accepted. The F-value for the 2SLS passes the test of significance at the 5 percent level and estimates is also high.. This points to the fact that there is a significant relationship between banking sector liability ratio and all the independent variables joined together..

In terms of the relevance of the explanatory variables in the equation, we look at individual coefficients in terms of significance and signs. Apparently, the significance of the coefficients reveals how relevant and effective the particular variable is in explaining the dependent variable. We also focus on the results of the GMM for the analysis. Looking closely at the individual coefficients in the model, ir shows that the coefficient of oil price volatility has the expected negative sign which suggest that instability in oil prices tends to reduce banking sector liability. The coefficient is however not significant at the 5 percent level (the probability value for the t-statistic is greater than 0.05). Hence, we can deduce that frequent movements in oil price does not have high influence on the proportion of banking sector liability in overall financial liabilities in the economy. Considered in a more general sense, we can say that creation of money by the banking sector has no linkage with oil prices.

Indeed of all variables, only the coefficient of monetary policy rate (MPR) was outstanding (at the 1 percent level). The coefficient of MPR is negative, which is in line with apriori theoretical expectations; when the policy rate rises, banking sector liabilities are likely to fall since the rise in the rate will reduce the capacity of banks to create more financial liabilities in the system. This shows that monetary policy rate is an effective means of controlling liability expansion by the banking sector in Nigeria. As mentioned earlier, the variables fail the significance test and imply that they do not have sound effects on banking sector liability ratio in Nigeria.

Table 7: Oil prices and financial sector. Dep. Variable is Ratio of bank credit to total private sector credit

Variable	GMM				2SLS		
	Coefficient	t-Statistic	Prob.		Coefficient	t-Statistic	Prob.
C	148.7**	13.90	0.00		144.6**	9.52	0.00
OILPV	**-0.63****	**-6.44**	**0.00**		**-0.60****	**-3.79**	**0.00**
MPR	-1.85**	-3.15	0.00		-2.11*	-2.01	0.06
EXRT	0.13	1.82	0.08		0.12	1.36	0.19
INFL	-0.56**	-4.27	0.00		-0.47*	-2.04	0.05
RGDPG	-0.50	-0.46	0.65		0.14	0.12	0.91
FDR	2.09*	2.55	0.02		1.70	1.48	0.15
R-squared	0.549				0.606		
Adj R	0.441				0.512		
J-stat	1.49				0.67		
F		-			6.27		

Source: Authors compilation from regression estimates, Oct 2018.

The second financial sector indicator variable considered is the extent of loans by banks to private sector or the economy. It is a major indicator of financial sector stability since credit provision is a core macroeconomic function of the banks. The results in Table 7 show the estimates from the models specified. Focusing of the GMM outcome, it can be seen that the overall performance of the model is generally impressive. The adjusted R-squared value shows that over 44 percent of variations in credit was reported in the equation. Moreover, the F-value passed the significance test for the 2SLS result, while the J-statistic value shows that the instruments used in the estimation of the GMM model are valid.

Having completed the analysis, we will now focus on the importance of each of the explanatory variables. The outcome is that the coefficient of oil price changes is adverse and significant at the 1 percent level. The shows that frequent changes in oil price have adverse impact on bank lending in Nigeria. The higher the instability in oil prices, the lesser the amount of loans advanced by the banks in the country. Thus, oil price instability tends to shrink banking sector loan availability in the country. MPR in the model also has a negative coefficient and scales through the test of significance at the 5 percent level, indicating that rising policy rate tends to reduce credit supply by the banking sector (as expected). This result, when combined with the initial result, provides string basis for demonstrating that in terms of credit supply or liability expansion by banks, the Central bank seems to have a very effective tool to coordinate the banking sector in Nigeria.

The model reveals that coefficient of inflation is also significant and satisfies test at the 1 percent level which shows that rising price level has a negative impact on loan supply by the commercial banks. When prices rise, loans tend to shrink, perhaps due to reduction in loan demand. The coefficient of fiscal deficit ratio also scaled through the test at the 5 percent As the coefficient is positive, the result indicates that fiscal deficits positively impacts on bank credit supply. The more the government spends, the higher the level of loan supply by the banking sector.

Table 8: Oil prices and financial sector.

Dep. Variable is Interest rate spread

Variable	GMM				2SLS		
	Coefficient	t-Stat.	Prob.		Coefficient	t-Stat.	Prob.
C	5.31	1.31	0.20		3.66	0.80	0.43
OILPV	**-0.07**	**-2.78**	**0.01**		**-0.07**	**-1.44**	**0.16**
MPR	0.20	0.84	0.41		0.20	0.65	0.52
EXRT	0.09	3.67	0.00		0.10	3.71	0.00
INFL	-0.03	-0.61	0.55		-0.01	-0.09	0.93
RGDPG	0.03	0.11	0.91		0.07	0.20	0.84
FDR	0.18	1.01	0.32		0.10	0.30	0.77
R-squared	0.741				0.746		
Adj. R-squared	0.679				0.685		
J-stat	0.43				0.3		
F stat					11.25		

Source: Authors compilation from regression estimates, Oct 2018.

Another financial sector indicator used is the spread of interest rate, which is the gap between the deposit and the loan rate in the banking sector. Table 8 shows the result of the model. The outcome has high investigative statistics, with the adjusted R-squared value of 0.679. Thus, over 67 percent of the changes in interest rate spread is reflected in the model. The J-statistic value for the GMM equation also proves that the instrument used in the model is valid.

Looking at the explanatory variable coefficients, it is seen that oil price changes have negative value at the 5 percent level. This reveals that oil price changes have a significant negative impact on interest rate spread in Nigeria. The interpretation of this result is rather ambiguous since it directly shows that frequent changes in oil prices tend to close the gap between lending and deposit rates. Apparently, minimizing this difference is a positive goal for financial sector development in any country. Thus, it appears from the result that oil price instability tends to have positive effect on the financial sector as regards interest rate position in Nigeria. The only other significant coefficient in the model is that of exchange rate. The coefficient is positive, revealing that exchange rate depreciation tends to increase the interest rate spread in Nigeria. This result is interesting to note because it shows a positive relationship between exchange rate and interest rates in Nigeria. Oil prices may not have the direct impact expected to be shown on interest rates, but exchange rate does. Indeed, since oil prices have been known to distort exchange rate, the study shows that oil prices may only have indirect impact on the interest rate spread in Nigeria. All the other coefficients in the model fail the test of significance at the 5 percent level.

Table 9: Oil prices and financial sector.

Dep. Variable is Ratio of non-performing loans

Variable	GMM				2SLS		
	Coefficient	t-Statistic	Prob.		Coefficient	t-Statistic	Prob.
C	14.27	1.19	0.25		14.10	1.01	0.32
OILPV	**0.32**	**2.88**	**0.01**		**0.33**	**2.35**	**0.03**
MPR	-0.55	-0.68	0.50		-0.58	-0.62	0.54
EXRT	0.06	0.72	0.48		0.07	0.85	0.40
INFL	0.36	2.68	0.01		0.37	1.86	0.07
RGDPG	1.45	1.53	0.14		1.45	1.33	0.19
FDR	-1.66	-1.67	0.11		-1.66	-1.70	0.10
R-squared	0.277				0.263		
Adj. R-sq	0.104				0.086		
J-stat	0.03				0.021		
F stat					4.75		

Source: Authors compilation from regression estimates, Oct 2018.

The ratio of delinquent loans is also among the indicators of the financial sector fragility which may be observed in the face of oil price variations. The results shown in Table 9 indicate the effect of the oil price instability on the ratio of non-performing loans in Nigeria. The diagnostic indicators of the results are generally low, with adjusted R squared value of 0.104. Only 10 percent of the behavior of non-performing loans was explained by the selected explanatory variables in the model.

Table 9 shows that oil price volatility coefficient passed the significance test at the 5 percent level with a positive value. The implication from this result is that oil price instability has a

positive impact on the ratio of non-performing loans. Thus the more intensive the instability of oil prices, the more are the delinquent loans in the banking industry in Nigeria. More loans run into redundancy when oil prices become highly volatile in Nigeria. The table also reveals that inflation rate has high impact on delinquent loans. Loans fail either with oil price vagaries or when price levels are on the rise over time. The other variables in the model failed the test of significance at the 5 percent level.

Table 10: Oil prices and financial sector.

Dep. Variable is Real deposit growth

Variable	GMM				**2SLS**		
	Coefficient	*t-Statistic*	*Prob.*		*Coefficient*	*t-Statistic*	*Prob.*
C	30.52	0.50	0.62		28.97	0.35	0.73
OILPV	**-0.94***	**-2.61**	**0.02**		**-0.81**	**-1.22**	**0.23**
EXRT	0.32	0.34	0.74		0.26	0.22	0.83
RGDPG	-3.67	-0.83	0.42		-2.98	-0.51	0.62
NBB	0.02	0.71	0.48		0.01	0.49	0.63
SPREAD	-1.89	-0.22	0.82		-1.34	-0.12	0.91
	0.478				0.246		
	0.320				0.204		
	1.96				1.65		
	-				0.58		

Source: Authors compilation from regression estimates, Oct 2018.

The fifth financial sector indicator variable considered is the growth of real deposits in the banking system. For a developing economy like Nigeria, the growth of real deposits is a strong indicator of how well the financial sector has penetrated the economy in terms of savings coordination and overall financial participation. The results in Table 10 show the estimates from the models specified. Focusing on the GMM outcome, the overall performance of the model is generally impressive. The adjusted R-squared value shows that over 44 percent of the variations in credit were reflected in the model. Moreover, the F-value passed the significance test for the 2SLS result, while the J-statistic value shows that the instruments used in the estimation of the GMM model are valid.

From the result, only the coefficient of oil price volatility passed the test of significance at the 5 percent level. This coefficient is negative; suggesting negative growth in real deposit as a result of oil price changes. The coefficient shows that rising instability tends to limit the growth of deposits in the financial industry in Nigeria. Thus, the outcome of the analysis shows that oil price volatility not only has debilitating impact on the supply side of the financial system but also on demand. Rise in instability invariably limits the capacity to make deposits in the financial system in Nigeria, thereby hurting the growth of the system and posing serious challenges for stability in the system. All the other coefficients in the model however failed the test of significance at the 5 percent level.

Test of Hypothesis

Oil price instability does not have a significant relationship with financial sector indicators stability in Nigeria

To test this hypothesis, the results from Tables 6 to 10 are employed. In the results, the coefficient of oil prices possessed the expected signs for most of the estimates and passed the test of significance at the 5 percent level. The highlighted oil price volatility coefficients in Table 10 show that it strongly contributed in the behavior of the financial industry variables in Nigeria. Therefore, the null hypothesis is rejected implying that there is a positive relationship between oil price instability and financial sector indicators stability in Nigeria. This confirms the empirical work carried out by Amidu & Wilson (1990) that worked on the effect oil price instability had on financial sector growth.

Summary of Findings

The linkage between oil price instability and financial industry fragility in Nigeria was empirically investigated. Essentially, the main thrust of the study was to examine how fluctuations in oil price internationally can transmit to fragility in the financial sector in country. As was noted in the study; oil prices, while being one of the most fickle commodity prices in the international market has had wide-ranging effects on the Nigerian economy. The continued and intensified linkages of the financial sector to international commodity price movements around the world have also motivated the present study. Though most of the studies have concentrated on the linkages between capital markets and international oil price variations, this study slightly deviates from extant literature and focuses on how the oil prices movements affects other components in the financial sector.

To carry out the main tenets of the study, a theoretical foundation was provided for the empirical analyses while the pattern of movements of the main variables in the study were initially characterized. The nature of the study entails that both economy-wide and firm-level analysis is carried out. The data used for the study therefore included macroeconomic-based variables that capture the entire financial industry as well as the banking sector in Nigeria. In this regard, macroeconomic data used in the study covered the period 1982 to 2017. Also, the main econometric techniques applied in the study were the Generalized Method of Moments (GMM) for the main estimates; the Probit technique for the estimation of banking sector crisis; and the fixed-effect panel data analysis technique for the bank-specific data. The overall results obtained from the study are generally in line with previous studies like Kinda et al. (2016), IMF (2015), Amidu & Wilson (2012) and Fanizza (2009) which showed that on a broad level oil price instability either limits financial sector growth, weakens the ability of the sector to withstand external shocks, increases the likelihood for banking sector crisis or reduces the level of integration of the financial industry with the international markets. To be more specific, the outcome of the research revealed several issues.

1. In Nigeria, a positive relationship between oil price instability and most of the financial sector indicators can be established. The effect is adverse leading to weakening of lending capacity, intensification of delinquent loans in banks, and reduction of deposits in banking industry. The impact on interest rates is however desirable since it reduces the rate spread in the banking. Also, the effect on liquidity or financial deepening is not significant and suggests that growth of liquidity does not immediately fall following oil price crash.
2. Thus, oil prices instability was shown to have extensive capacity to weaken the financial sector in Nigeria and cause fragility in the system, especially with respect to the money market.
3. Fragility in the financial system tends to negatively affect banking sector performance in Nigeria. When financial sector indicators drop, the study reveals that banking sector performance indicators also tend to fall.

Conclusion

Since oil remains the major foreign exchange for the country, the negative effect oil price crash has on the nation's economy remains real. In a globalized world economy with highly interlinked market patterns, the need to devise appropriate policies to shield the economy as much as possible from the external shocks is becoming more and more relevant. This study has placed in perspective how the financial system may become weakened by oil price movements over time and the roles that policy could play in ensuring domestic stabilization of the financial industry in the economy. Although the outline of the study is not exhaustive, it has shown the extensive effect of instability of oil prices on the financial industry in Nigeria. In this study, this poor performance is attributed to the nature of linkages between the financial and banking industry as well as the amplified impact of supply shocks (arising from volatile oil revenues) that persistently deride the use of overall economic performance in Nigeria.

However, other factors may have also contributed to the low financial industry performance in Nigeria over the years. Obadan & Adegboye, 2016), James (1999) and Kaminsky & Reinhart (1999) have considered the place of weak institutional setups, poor policy applications and unstable regulatory frameworks as major ingredients that lead to financial industry problems in the African region, including Nigeria. Indeed, poor financial structure planning and execution, as well as pure financial corruption may have bedeviled the financial landscape in Nigeria, leading to easy susceptibility to financial crisis. Moreover, the increasing rate of financial development in the country calls for more considerations towards the use of monetary policy (even if combined with fiscal policy) as a tool for macroeconomic adjustment. This has brought to bare a lot of academic and policy evaluation over the years and provides a formidable alternative to an ever increasing size of government in macroeconomic stabilization.

Finally, the world currently is moving in search for greener energy, thereby cutting the inflows of oil revenue into the country. Apparently, the diversification of the economy is essential to provide a strong macroeconomic background for financial system development and adequate linkage with the external sector. As suggested by Izetzki et al (2008), there is therefore need for other foreign exchange management measures which ensure that the high demand for foreign currency is met as the overall economic performance and trade balance in Nigeria largely depended on it.

Recommendations

The overall results in this research have positive implications for policy formulation that is a useful tool for government. Firstly, the results showed the debilitating effects on the financial industry due to volatility of oil price in Nigeria. Thus, there is need for the financial system to adopt measures to at least, limit the impact of oil price movements over time. Such measures would have to include exchange rate management techniques that will ensure sustainability of international financial transactions even when oil prices are down (or rising rapidly).

Moreover, the effectiveness of the role of the monetary policy authority in Nigeria has been quite highlighted in the study. It was shown that proper use of policy instrument can effectively shield the financial sector from excessive oil price volatility transmission into the system. Hence the Central Bank should be proactive in its monetary policy conduct by ensuring the policy actions do not directly relate with oil price variations. One way of doing this is to de-couple policy instruments from fiscal entanglements such that monetary policy does not become subservient to fiscal operations. The situation where the Central Bank always acts as a back-up factor for fiscal policy activities will not augur well for the economy.

Finally, the role of income levels and fiscal activities on the financial sector in the country was also revealed. Thus, government priority should be implementation of fiscal policies having its objective of reducing long term direct responses of spending to oil price movements. This will amount to removing spending patterns that are expansionary during output (and oil) growth, and placing more emphasis on fiscal balances over time. The study showed that rising income levels is inimical to banking sector stability, suggesting that spending spree during oil booms could hurt the financial system. A prudent fiscal policy would create savings that will be readily available if needed when an output cycle dips, give government enough room to deal with oil price instability, and create ability to absorb temporary oil price slack without impacting on short-run fiscal and financial sector adjustments.

Limitations and Recommendations for Further Studies

The data and techniques used in this study presuppose that oil prices transmit directly to the financial sector without any particular channel of such transmission. Apparently as theory and experience has shown in Nigeria, there actually exists some channels of effects in these relationships, of which is not the naira exchange rate and foreign reserves. Future studies could incorporate this into their models to observe whether these channels mitigate or exacerbate the negative impacts of the oil instabilities on the financial system in Nigeria. This may also require the application of a different modeling technique such as Structural VAR.

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Author's Profile

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