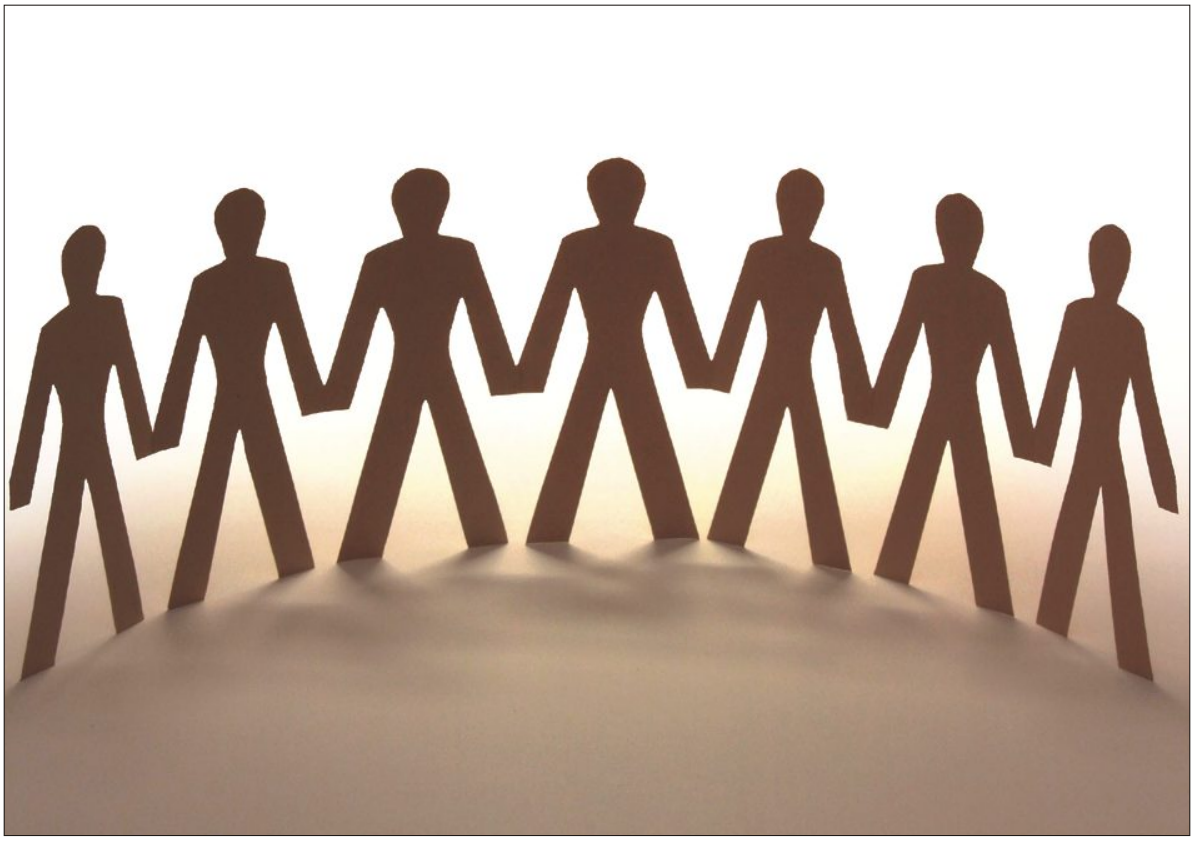

Australasian Journal of

Social Science

ISSN: 2251-3205

science alert

http://scialert.net/ajss

OPEN ACCESS Australasian Journal of Social Science

ISSN 2251-3205
DOI: 10.3923/aujss.2017.1.16

Research Article
Oil Price Fluctuations and Economic Growth in Nigeria (Evidence From Granger Causality Test)

Umar Muhammad Gummi, Aliyu Isah Buhari and Ahmad Muhammad

Department of Economics, Sokoto State University, Sototo, PMB 2134, Nigeria

Abstract

Objective: This study examined the relationship between oil price and economic growth in Nigeria using annual time series data for the period 1974-2014 sourced from Central Bank of Nigeria (CBN) statistical bulletin, OPEC and world bank for the year 2014. **Methodology:** Non-probability sampling method in the form of availability sampling technique has been applied in selecting the number of years covering this study. Dickey-fuller generalised least squares unit roots test has been applied in testing for stationarity of the variables and granger causality test adopted for testing the direction of causality. **Results:** The findings indicate that, there is no long-run relationship among the variables. However, granger causality test indicate a significant unidirectional causality running from oil price to economic growth in the short run. In addition, there is a significant positive unidirectional causality running from human capital to economic growth in Nigeria. Also, the findings indicate a significant positive unidirectional causality running from oil price to total exports in Nigeria. **Conclusion:** The study therefore, recommends stability of oil price in order to achieve high economic growth in the short run, substantial amount of government budgetary allocation should be directed towards educational sector in order to strengthen economic growth through human capital in the short run. Finally, measures to maintain higher oil price and stability in the world market should be adopted so as to increase the volume of oil export which will eventually lead to increase in total exports.

Key words: Oil price, economic growth, granger causality test, real GDP, human capital

Received: November 13, 2015 Accepted: March 01, 2016 Published: December 15, 2016

Citation: Umar Muhammad Gummi, Aliyu Isah Buhari and Ahmad Muhammad, 2017. Oil price fluctuations and economic growth in Nigeria (Evidence from granger causality test). Australasian J. Social Sci., 3: 1-16.

Corresponding Author: Umar Muhammad Gummi, Department of Economics, Sokoto State University, Sototo, PMB 2134, Nigeria

Competing Interest: The authors have declared that no competing interest exists.

Data Availability: All relevant data are within the paper and its supporting information files.

INTRODUCTION

The trends and dwindling of oil price in the global market has become a source of concern for oil producing countries. The price of crude oil had dropped precariously from a peak of $104 per barrel by the third quarter of 2014. Specifically, the OPEC average monthly basket price of oil peaked at $107.89 per barrel in June, 2014 dwindled very sharply to $59 per barrel at end-December, 2014. It further decelerated to $54.4 by end-March, 2015, resulting in Nigeria experiencing a sudden and significant drop in revenue inflow from oil sales[1]. Nigeria, a mono-cultural and a hydrocarbon economy depends largely on revenue realized from oil to sustain her teeming population and the economy in order to foster physical, political and socio-economic development. Despite the fact that Nigeria is the 6th largest oil producer, the country also imports oil from other countries. The surplus of exporting value over the importing value makes Nigeria a net oil exporting country[2].

Oil prices have witnessed profound fluctuations and this has implications for the performance of macroeconomic variables, posing great challenges for policy making. The transmission mechanisms through which oil prices have impacted on real economic activity include both supply and demand channels. The supply side effects are related to the fact that crude oil is a basic input to production and consequently an increase in oil price leads to a rise in production costs that induce firms to lower output. Oil price changes also entail demand side effects on consumption and investment[3-4]. Thus the impact (positive or negative) which oil price volatility could have on any economy, depends on what part of the divide such economy falls into and of course the nature of such price change (rise or fall). However, the Nigerian economy uniquely qualifies as both an oil exporting and importing economy by reason of the fact that she exports crude oil, but imports refined petroleum products[5].

However, most of the empirical studies carried out have focused on the oil importing economies, particularly the developed economies[6-9]. Few studies exist yet on the effect of oil price on key macroeconomic variables for an oil exporting country like Nigeria. Alley *et al.*[10] study empirically the impact of oil price shock on economic growth in Nigeria using aggregate denand model and applied Generalized Method of Moment (GMM). Despite the robustness of the study by Alley *et al.*[10], it is flawed by the sample size used (1981-2012) concentrates more on price shock and does not show clearly the direction of relationship among the variables studied. This study intends to fill this gap that the oil-macroeconomics literature lacks by examining empirically the impact of oil price on economic growth as well as show how changes in oil price affect key macroeconomic variables in Nigeria within the framework of policy objectives.

Deducting from the above, the study seek to answer the following questions:

- Does oil price have any significant impact on economic growth in Nigeria?
- What other factors influence economic growth in Nigeria?
- What is the direction of relationship between oil price and economic growth?
- What are the policy implications?

The following hypotheses have been tested in order to achieve the objectives of the study:

- H_o : Oil price has no significant impact on the economic growth of Nigeria
- H_1 : Other factors do not have any significant influence on the economic growth of Nigeria

A significant number of studies have been reviewed to support and complement the efficacy of this study. Oil, the most internationally contributing factor of production in modern-economy, its price tends to be volatile, at least due to business cycle. Hamilton[11] using granger causality test showed that oil price changes are the cause of GDP fluctuation in US. Burbidge and Harrison[12] conduct a study using vector autoregression (VAR) on monthly data from January, 1961 to June, 1982 they found that, the effect of oil price rise on inflation in US and Canada is more than in Japan, Germany and England. Cunado and de Gracia[13] also investigate oil price impact on fifteen European countries and find mixed results. They conclude that, the use of either world oil price index or a national real price index is part of the explanation to the difference between oil prices and outputs. Moreover, they could not find any long-run relationship between oil prices and economic activity except for the United Kingdom and Ireland. Therefore, they suggest that the impact of oil price shocks on economic activity is limited to the short-run.

However, Berument and Ceylan[14] studied the effect of oil price shocks on economic growth in MENA region covering 1960-2003, they applied dynamic vector autoregressive (DVAR) model to investigate this relationship, the results show a positive effect on Iran, Iraq, Algeria, Jordan, Kuwait, Oman, Syria, Tunisia and United Arab Emirate, while

on other case including Bahrain, Djibouti, Egypt, Morocco and Yemen, there was no significant relation statistically. In the same vein[15-18], investigate on the impact of oil price on economic growth and other macroeconomic variables, the studies established significant relationship among the variables using econometric analyses based on long-run and short-run frameworks.

Ayadi *et al.*[19] examine the effect of oil production shocks on the net-exporting country (Nigeria) using a standard VAR which includes oil production, output, real exchange rate and inflation over 1975-1995 period. The impact response show that a positive oil shock (high oil price) is followed by rise in output, reduction in inflation and a depreciation of the domestic currency. This tallies with the findings of Olomola and Adejumo[6]. Olusegun[20] investigate the impact of oil price shocks on the macroeconomic performance in Nigeria using seven key Nigeria's macroeconomic variables, which are: Real GDP, CPI, real oil revenue, real money supply, real government recurrent expenditure, real government capital expenditure and real oil price. An annual data set between the periods 1970 and 2005 has been employed, johansen cointegration test indicates at least four cointegrating vectors among the variables, the forecast error variance decomposition estimated from the VAR model shows that oil price shocks significantly contributes to the variability of oil revenue and output. The study also reveals that the variability in the price level apart from its own shock is explained substantially by output and money supply shocks. Also, the variability in money supply is equally explained by price level and output. These findings confirm, thus, that oil price shock may not be necessarily inflationary especially, in the case of an open developing country like Nigeria, the policy implication of this is that, fiscal policy may be used more effectively to stabilize the economy after oil shock. In their quest[2,21-23], establishes a positive relationship between oil price and real GDP in Nigeria using different methodology and econometric analysis.

MATERIALS AND METHODS

Sources of data, sampling technique and sample size: The data for this research work were obtained mainly from secondary sources, particularly from Central Bank of Nigeria's[24] statistical bulletin from 1974-2014 covering the period of 41 years of OPEC and the world bank data banks. Given the time series nature of the data set for this study, non-probability sampling method in the form of availability sampling techniques has been applied in selecting the number of years that constitute the sample size for this study. This sampling technique has been applied because selection of a given year depends on the availability of the data on all the variables required for this study.

Variable measurement

Oil price: The real oil price is measured by annual average price of oil in US dollars per barrel. Therefore, this study made use of the annual average price of oil in US dollars per barrel as a proxy for oil price.

Economic growth: The real GDP has been used as a measure of economic growth as measured by Olomola and Adejumo[6], Farzanegan and Markwardt[15], Aliyu[21], Omoniyi and Omobitan[25] and Adelakun[26]. Thus, this study will make use of real GDP as a proxy for economic growth.

Total export: Total export is proxy by the total value of goods and services exported. Therefore, this study will make use of total value of export as a proxy for export.

Economic openness: Economic Openness is proxy by the ratio of the sum of exports and imports to GDP [100×(export+imports)/GDP] as measured by Obida and Abu[27], Anyanwu *et al.*[28] and Babalola *et al.*[29]. Thus, this study will make use of the ratio of the sum of exports and imports to the GDP as a proxy for economic openness.

Foreign Direct Investment (FDI): The FDI is measured as the total inflows of FDI into Nigeria as a percentage of GDP as measured by Anyanwu *et al.*[28] and Obida and Abu[27]. Therefore, this study will make use of total inflows of FDI as a percentage of GDP as a proxy for Foreign Direct Investment (FDI).

Human capital: Human capital is proxy by annual total expenditure on education following the works by Adelakun[26]. Therefore, this study will make use of the annual total expenditure on education as a proxy for human capital (annual total expenditure on education).

Method of data analysis: Both descriptive and inferential methods of data analysis were used for this study. Descriptive method will be used in the form of mean, frequency, minimum and maximum in order to describe the nature of the data set. For the inferential method, unit root test will be

conducted to establish the stationarity of all the variables. Vector autoregressive (VAR) model will be used to establish the short-run relationship and the direction of causality on the impact of oil price on economic growth using the above listed key macroeconomic variables, if there is no evidence of cointegration. If cointegration exists among the variables, Vector Error Correction (VEC) will be applied.

Model specification: The model for this study is specified thus in Eq. 1 as:

$$RGDP_t = f(OILPRICD_t, FDI_t, TOEXP_t, ECOOPEN_t, HUMANCAP_t) \quad (1)$$

Where:

RGDP = Real Gross Domestic Product
OILPRICD = Oil Price as measured by annual average price of oil in US dollars per barrel
FDI = Foreign Direct Investment (FDI/% of GDP)
TOEXP = Total Exports
ECOOPEN = Economic Openness (100 × (Exports+imports)/ GDP)
HUMANCAP = Human Capital (annual total expenditure on education)
t = Time period

where, real GDP is the dependent variable, $OILPRICD_t$, FDI_t, $TOEXP_t$, $ECOOPEN_t$ and $HUMANCAP_t$ are the independent variables.

The vector autoregressive (VAR) model is specified as follows in Eq. 2:

$$y_t = A_0 + \sum_{k=1}^{p} A_k + y_{t-k} + e_t \quad (2)$$

Where:

y_t = An n × 1 vector of non-stationary I (1) variable
n = Number of variables in the system, in this study eight in each case
A_0 = n × 1 vector of constant terms
A_k = n × n matrix of coefficients
e_t = n × 1 vector of error terms, which is independent and identically distributed
p = The order of autoregression or number of lags

RESULTS

Descriptive analysis and interpretation of results: Obviously, aggregate output (real GDP) and the price of oil have been increasing over the years in Nigeria. Thus, a summary of the descriptive statistics for real GDP, oil price, total exports, human capital, foreign direct investment and economic openness in the form of mean, minimum and maximum for forty one observations covering the period 1970-2010 is presented in Table 1.

The results in Table 1 show that, for the period 1970-2010, average real GDP for Nigeria was 268,168.8 in millions of naira, with 42.19 being the minimum and 776,332.2 as the maximum. Similarly, on the average, the oil price stood at 26.2 per barrel in US$ while 1.21 was the minimum and 94.10 was the maximum. The mean value of total exports was 1,767,411.2 in millions of naira, while 885.67 and 11,035,794.53 were the minimum and maximum, respectively. Furthermore, the average value of expenditure on education (human capital) was 28,022.1 in millions of naira, while the minimum stood at 0.90511 and the maximum was 6.300677879. In addition, the mean value of FDI stood at 2.68412 as a percentage of GDP while 3.94 and 164,00.0 were the minimum and maximum values respectively. Also, the average ratio of total trade to real GDP trade share was 58.0 while the minimum was 42.1 and the maximum was 97.3.

Inferential analysis and interpretation of results: In order to find the impact relationship between oil price and economic growth and between other control variables and economic growth, this study, thus, uses unit roots, cointegration and granger causality tests. However, to know the presence of unit root, two hypotheses are tested: Null hypothesis which states the presence of unit root, that is a series variable is not stationary and which is rejected when the calculated test statistic is greater in absolute value than the critical absolute value. However, the null hypothesis should be accepted when the calculated test statistic is less in absolute value than critical absolute value. Also, stationarity exists when the test statistic is greater in absolute value than the critical absolute value.

The results in Table 2 show that all the series variables are not stationary at level value at 1 and 5% level of significance with exception of human capital which is significant at 1% level of significance, suggesting the acceptance null hypothesis which states that series variables are not stationary. Though, the variables total export and foreign direct investment were stationary at 10% level of significance, but they are weak stationarity.

Table 1: Descriptive statistics

Variables	Observation	Mean	Minimum	Maximum
Real GDP	41	268168.8	42.19	7766332.2
Oil price	41	26.2	1.21	94.10
Total exports	41	1767411.2	885.67	11035794.53
Human capital	41	28022.1	0.90511	6.300677879
FDI	41	2.68412	3.94	16400.0
Economic openness	41	57.95437	42.13809	97.32115

Stata software version 9.1, GDP: Gross domestic product and FDI: Foreign direct investment

Table 2: Results of dickey-fuller generalized least square (DF-GLS) unit root tests with trend

Variables	Level value test statistic	Test statistic difference value
Natural log of real GDP	-1.809 (9)	-4.644 (1)***
Oil price	-1.953 (3)	-3.613 (1)**
Natural log of total exports	-2.585 (8)*	-4.460 (1)***
Foreign direct investment	-2.678 (8)*	-5.431 (1)***
Human capital	-4.582 (9)***	-4.601 (1)***
Economic openness	-2.306 (8)	-4.392 (1)***

STATA software, version 9.1, *,** and ***Indicate levels of significance at 10, 5 and 1%, respectively, the numbers of lags are in parentheses

Table 3: Results of cointegration test for real GDP, oil price, total export, foreign direct investment, human capital and economic openness

Maximum rank	Parms	LL	Eigenvalue	Trace statistic	Critical value
0	6	-817.11036	.	84.5671*	94.15
1	17	-800.25172	0.56955	50.8498	68.52
2	26	-789.14045	0.42625	28.6273	47.21
3	33	-781.73571	0.30943	13.8178	29.68
4	38	-777.79048	0.17902	5.9274	15.41
5	41	-775.26958	0.11843	0.8856	3.76
6	42	-774.8268	0.02190		

STATA software, version 9.1, *Indicates that the trace statistic value is not significant at 5% level, suggesting that there is no cointegration

However, by taking the variables in their first difference, results show that all the variables are stationary at either 1 or 5% level of significance. For consistency, thus, the entire series variables were considered as I (1). This is because to conduct cointegration analysis, all variables must be integrated of the same order so as to test for cointegration.

From the aforementioned, the stationarity of the variables is at I (1) which may lead to the examining the presence or otherwise of cointegration relationship among the variables. When there is the presence of cointegration relationship, it means that the variables share a common trend and long run equilibrium. Therefore, Johansen[30] tests for the number of cointegration ranks have been conducted and one lag has been included in the cointegration regression.

Table 3 presents the results of Johansen tests for the number of cointegrating ranks. The results of the test indicate the rejection of the alternative hypothesis which states that there is cointegrating vector and accept the null hypothesis which states that there is no cointegrating vector. This is because the value of the trace statistic at zero rank is 84.5671, which is less than its critical value of 94.15 at 5% level of significance.

This implies, Vector Error Correction (VEC) model cannot be applied. In view of this, Granger[31] causality test will be conducted using vector autoregressive (VAR) model to get the direction of causality in the short run. Also, since no cointegrating among the variables but they are integrated of the same order, their first difference values will be used in running the VAR model for causality test. Thus, zero lag has been included in the VAR model because majority of the criteria indicated zero lag to be included in the model.

Results of the VAR model: The results indicate a significant and positive unidirectional causality running from oil price to real GDP, suggesting that an increase in oil price promotes economic growth in the short run. Furthermore, the results show a significant and positive causality running from human capital to real GDP. This indicates that, in the short run, human capital facilitates economic growth in Nigeria. Similarly the results of Granger causality test indicate a significant and positive causal relationship running from oil price to total exports in Nigeria. However, all other variables captured in the model do not have causal relationship with economic growth and oil price.

Properties of the VAR model: Basically, the following tests were carried out in order to test for the properties of the model of oil price and economic growth: Langrange-multiplier test for autocorrelation, Jarque-bera test, skewness test, kurtosis test and eigenvalue stability condition. Thus, the results of robustness of the VAR model for granger causality test indicate that there is no autocorrelation problem. But hetroscedasticity exist and residuals are not normally distributed. The model satisfies the stability condition since the eigenvalues are less than one, suggesting that the model is statistically adequate.

DISCUSSION

The results obtained from the Johansen[30] cointegration test by show the non-existence of long-run relationship among the variables used in this study. Consequently, granger causality test has been applied to test for the causal relationship among the variables in the short run. The findings show that causality runs from oil price to economic growth. Results show that the coefficient related to economic growth in the VAR model results (not reported) is, positively and statistically significant. It means that an increase in oil price increases economic growth in the short run which coincides with the finding of Olusegun[20] and contradicts that of Berument and Ceylan[14]. Moreover, a positive causal relation is observed from human capital to real GDP and from oil price to total exports in the short run. The results show that the coefficients related to human capital and oil price are positive and statistically significant. The findings conforms that of Jafiya[32] and Adelakun[26]. This means that the increase in human capital leads to increase in real GDP. Furthermore, an increase in oil price leads to increase in total exports in Nigeria. This is because oil export constitutes the largest proportion of Nigeria's total exports. Thus, the

finding goes along with conventional law of supply which states that "the higher the price, the higher the quantity supplied".

From the aforementioned, these findings go along with a priori expectation that there is a positive relationship between human capital and real GDP and between oil price and exports. The findings are not in conformity with the findings of Amir *et al.*[33] whose findings show a long run positive relationship between human capital and economic growth. Finally, the result is in conformity with the findings of Ayadi *et al.*[19], Cunado and de Gracia[13], Burbidge and Harrison[12], Lescaroux and Mignon[16], Aliyu[21], Umar and Kilishi[23], Oyeyemi[3] and Okeke[1] whose findings indicate strong and positive relationship between oil price and real GDP (economic growth). However, the findings contradict those of Bernanke *et al.*[7], Olomola and Adejumo[6], Chuku *et al.*[9], Mordi and Adebiyi[34] and Iklaga and Evbuomwan[8].

CONCLUSION AND POLICY RECOMMENDATIONS

The empirical findings of this study guide our conclusions on the direction of relationship among the variables studieed. With no significant long run relationship between oil price and economic growth in Nigeria, a significant short-run relationship exist between them (oil price and economic growth) thus, fluctuations in oil price distorts economic growth. Also, there is no significant long run relationship between human capital and real GDP, but short run relation is observed from human capital to real GDP thus, human capital hampers real GDP. In the short run, oil price contributed positively to rise in total exports in Nigeria through increased in oil export.

Based on the findings of this study, the following recommendations are made:

- All measures to be taken by the government and other stakeholders in the oil sector should be on short-run basis because the study cannot establish any long-run relationship between oil price and other macroeconomic variables Nigeria
- With a significant positive effect between human capital and real GDP in the short run, substantial amount of government budgetary allocation should be directed towards the education sector which in turn supply the necessary man power with skills and capacity to produce more output for economic growth
- Also, there is the need to maintain a stable oil price in the world market so as to achieve sustain economic growth through foreign exchange. This is paramount as fluctuations in oil price (especially decrease in oil price) negatively affect Nigeria's earnings from the international market and cause severe economic hardships as witnessed in the early 2014
- Finally, the government need to diversify the economy by freeing it from the shackles of mono-cultural economy that depends solely on oil. The dwindling oil revenue is a signal that oil can no longer sustain the national economy, exploiting other potentials especially agriculture, mining and manufacturing is an "Urgency of now"

APPENDIX

```
log:  C:\Stata 9.1\Ahmad_M_Abdullahi.log
log type:  text
opened on:  24 Sept. 2015, 16:43:15
.
end of do-file
. do "C:\Users\DRTUKU~1\AppData\Local\Temp\STD0i000000.tmp"
. dfgls l RGDP, trend maxlag (9)
```

DF-GLS for l RGDP Number of obs = 31

[lags]	DF-GLS tau test statistic	1% Critical value	5% Critical value	10% Critical value
9	-1.803	-3.770	-2.711	-2.380
8	-1.585	-3.770	-2.759	-2.443
7	-1.515	-3.770	-2.825	-2.517
6	-0.838	-3.770	-2.903	-2.600
5	-0.708	-3.770	-2.989	-2.686
4	-0.766	-3.770	-3.079	-2.773
3	-0.767	-3.770	-3.166	-2.856
2	-0.916	-3.770	-3.246	-2.931
1	-1.035	-3.770	-3.314	-2.993

Opt Lag (Ng-perron seq t) = 7 with RMSE .2698345
Min SC = -2.052145 at lag 1 with RMSE .3208292
Min MAIC = -2.130194 at lag 1 with RMSE .3208292
. dfgls OILPRICD, trend maxlag (9)

DF-GLS for OILPRICD Number of obs = 31

[lags]	DF-GLS tau test statistic	1% Critical value	5% Critical value	10% Critical value
9	-1.639	-3.770	-2.711	-2.380
8	-1.924	-3.770	-2.759	-2.443
7	-1.495	-3.770	-2.825	-2.517
6	-1.886	-3.770	-2.903	-2.600
5	-1.813	-3.770	-2.989	-2.686
4	-1.709	-3.770	-3.079	-2.773
3	-1.953	-3.770	-3.166	-2.856
2	-1.709	-3.770	-3.246	-2.931
1	-1.110	-3.770	-3.314	-2.993

Opt Lag (Ng-perron seq t) = 0 [use maxlag (0)]
Min SC = 4.638196 at lag 1 with RMSE 9.100454
Min MAIC = 4.574649 at lag 1 with RMSE 9.100454
. dfgls l TOEXP, trend maxlag (9)

DF-GLS for l TOEXP Number of obs = 31

[lags]	DF-GLS tau test statistic	1% Critical value	5% Critical value	10% Critical value
9	-1.939	-3.770	-2.711	-2.380
8	-2.585	-3.770	-2.759	-2.443
7	-1.864	-3.770	-2.825	-2.517
6	-2.256	-3.770	-2.903	-2.600
5	-2.390	-3.770	-2.989	-2.686
4	-1.929	-3.770	-3.079	-2.773
3	-1.820	-3.770	-3.166	-2.856
2	-1.813	-3.770	-3.246	-2.931
1	-2.014	-3.770	-3.314	-2.993

Opt Lag (Ng-perron seq t) = 8 with RMSE .3354974
Min SC = -1.650638 at lag 1 with RMSE .3921571
Min MAIC = -1.485057 at lag 1 with RMSE .3921571
. dfgls FDI, trend maxlag (9)

DF-GLS for FDI Number of obs = 31

[lags]	DF-GLS tau test statistic	1% Critical value	5% Critical value	10% Critical value
9	-2.569	-3.770	-2.711	-2.380
8	-2.678	-3.770	-2.759	-2.443
7	-1.947	-3.770	-2.825	-2.517
6	-1.911	-3.770	-2.903	-2.600
5	-1.803	-3.770	-2.989	-2.686
4	-1.532	-3.770	-3.079	-2.773
3	-1.696	-3.770	-3.166	-2.856
2	-2.356	-3.770	-3.246	-2.931
1	-2.616	-3.770	-3.314	-2.993

Opt Lag (Ng-perron seq t) = 8 with RMSE 1.421005
Min SC = 1.245925 at lag 1 with RMSE 1.66894
Min MAIC = 1.610603 at lag 3 with RMSE 1.616414
. dfgls HUMANCAP, trend maxlag (9)

DF-GLS for HUMANCAP Number of obs = 31

[lags]	DF-GLS tau test statistic	1% Critical value	5% Critical value	10% Critical value
9	-4.582	-3.770	-2.711	-2.380
8	-3.274	-3.770	-2.759	-2.443
7	-1.584	-3.770	-2.825	-2.517
6	-1.385	-3.770	-2.903	-2.600
5	-0.990	-3.770	-2.989	-2.686
4	-0.869	-3.770	-3.079	-2.773
3	-0.690	-3.770	-3.166	-2.856
2	-0.583	-3.770	-3.246	-2.931
1	-0.366	-3.770	-3.314	-2.993

Opt Lag (Ng-perron seq t) = 9 with RMSE 8472.104
Min SC = 19.19681 at lag 9 with RMSE 8472.104
Min MAIC = 19.21503 at lag 1 with RMSE 14332.42

. dfgls ECOOPEN, trend maxlag (9)

DF-GLS for ECOOPEN Number of obs = 31

[lags]	DF-GLS tau test statistic	1% Critical value	5% Critical value	10% Critical value
9	-1.060	-3.770	-2.711	-2.380
8	-2.306	-3.770	-2.759	-2.443
7	-2.002	-3.770	-2.825	-2.517
6	-2.048	-3.770	-2.903	-2.600
5	-1.909	-3.770	-2.989	-2.686
4	-2.038	-3.770	-3.079	-2.773
3	-1.856	-3.770	-3.166	-2.856
2	-1.354	-3.770	-3.246	-2.931
1	-1.395	-3.770	-3.314	-2.993

Opt Lag (Ng-perron seq t) = 9 with RMSE 6.847145
Min SC = 4.611479 at lag 1 with RMSE 8.979692
Min MAIC = 4.610293 at lag 1 with RMSE 8.979692

.
end of do-file
. do "C:\Users\DRTUKU~1\AppData\Local\Temp\STD0i000000.tmp"
. dfgls D.l RGDP, trend maxlag (9)

DF-GLS for D.l RGDP Number of obs = 30

[lags]	DF-GLS tau test statistic	1% Critical value	5% Critical value	10% Critical value
9	-1.102	-3.770	-2.714	-2.376
8	-1.188	-3.770	-2.757	-2.435
7	-1.346	-3.770	-2.821	-2.509
6	-1.425	-3.770	-2.900	-2.593
5	-2.519	-3.770	-2.988	-2.683
4	-3.339	-3.770	-3.080	-2.772
3	-3.580	-3.770	3.170	-2.859
2	-4.258	-3.770	-3.254	-2.937
1	-4.644	-3.770	-3.325	-3.002

Opt Lag (Ng-perron seq t) = 6 with RMSE .2797403
Min SC = -2.058189 at lag 1 with RMSE .3190308
Min MAIC = .3471078 at lag 9 with RMSE .2789962

. dfgls D.OILPRICD, trend maxlag (9)

DF-GLS for D.OILPRICD Number of obs = 30

[lags]	DF-GLS tau test statistic	1% Critical value	5% Critical value	10% Critical value
9	-1.799	-3.770	-2.714	-2.376
8	-1.869	-3.770	-2.757	-2.435
7	-1.771	-3.770	-2.821	-2.509

Continue

6	-2.314	-3.770	-2.900	-2.593
5	-2.229	-3.770	-2.988	-2.683
4	-2.445	-3.770	-3.080	-2.772
3	-2.942	-3.770	-3.170	-2.859
2	-2.841	-3.770	-3.254	-2.937
1	-3.613	-3.770	-3.325	-3.002

Opt Lag (Ng-perron seq t) = 0 [use maxlag (0)]
Min SC = 4.648989 at lag 1 with RMSE 9.125943
Min MAIC = 7.774645 at lag 2 with RMSE 9.101472
. dfgls D.l TOEXP, trend maxlag (9)

DF-GLS for D.l TOEXP Number of obs = 30

[lags]	DF-GLS tau test statistic	1% Critical value	5% Critical value	10% Critical value
9	-1.756	-3.770	-2.714	-2.376
8	-2.049	-3.770	-2.757	-2.435
7	-1.589	-3.770	-2.821	-2.509
6	-2.249	-3.770	-2.900	-2.593
5	-1.941	-3.770	-2.988	-2.683
4	-1.861	-3.770	-3.080	-2.772
3	-2.664	-3.770	-3.170	-2.859
2	-3.389	-3.770	-3.254	-2.937
1	-4.460	-3.770	-3.325	-3.002

Opt Lag (Ng-perron seq t) = 0 [use maxlag (0)]
Min SC = -1.494131 at lag 1 with RMSE .4229765
Min MAIC = .467849 at lag 4 with RMSE .4138442
. dfgls D.FDI, trend maxlag (9)

DF-GLS for D.FDI Number of obs = 30

[lags]	DF-GLS tau test statistic	1% Critical value	5% Critical value	10% Critical value
9	-2.293	-3.770	-2.714	-2.376
8	-2.020	-3.770	-2.757	-2.435
7	-1.943	-3.770	-2.821	-2.509
6	-2.283	-3.770	-2.900	-2.593
5	-2.412	-3.770	-2.988	-2.683
4	-2.735	-3.770	-3.080	-2.772
3	-4.052	-3.770	-3.170	-2.859
2	-5.318	-3.770	-3.254	-2.937
1	-5.431	-3.770	-3.325	-3.002

Opt Lag (Ng-perron seq t) = 2 with RMSE 1.740398
Min SC = 1.448348 at lag 2 with RMSE 1.740398
Min MAIC = 8.905767 at lag 1 with RMSE 1.843267
. dfgls D.HUMANCAP, trend maxlag (9)

DF-GLS for D.HUMANCAP Number of obs = 30

[lags]	DF-GLS tau test statistic	1% Critical value	5% Critical value	10% Critical value
9	-1.319	-3.770	-2.714	-2.376
8	-0.611	-3.770	-2.757	-2.435
7	-0.758	-3.770	-2.821	-2.509
6	-1.296	-3.770	-2.900	-2.593
5	-1.611	-3.770	-2.988	-2.683
4	-2.747	-3.770	-3.080	-2.772
3	-3.482	-3.770	-3.170	-2.859
2	-4.144	-3.770	-3.254	-2.937
1	-4.601	-3.770	-3.325	-3.002

Opt Lag (Ng-perron seq t) = 9 with RMSE 7686.855
Min SC = 19.02827 at lag 9 with RMSE 7686.855
Min MAIC = 20.3305 at lag 8 with RMSE 11027.48
. dfgls D.ECOOPEN, trend maxlag (9)

DF-GLS for D.ECOOPEN Number of obs = 30

[lags]	DF-GLS tau test statistic	1% Critical value	5% Critical value	10% Critical value
9	-2.513	-3.770	-2.714	-2.376
8	-3.584	-3.770	-2.757	-2.435
7	-1.857	-3.770	-2.821	-2.509
6	-2.075	-3.770	-2.900	-2.593
5	-2.116	-3.770	-2.988	-2.683
4	-2.366	-3.770	-3.080	-2.772
3	-2.361	-3.770	-3.170	-2.859
2	-2.750	-3.770	-3.254	-2.937
1	-4.392	-3.770	-3.325	-3.002

Opt Lag (Ng-perron seq t) = 8 with RMSE 6.968239
Min SC = 4.689581 at lag 11 with RMSE 9.313056
Min MAIC = 6.988217 at lag 2 with RMSE 9.139661

.
end of do-file
. do "C:\Users\DRTUKU~1\AppData\Local\Temp\STD0i000000.tmp"
. varsoc l RGDP OILPRICD l TOEXP FDI HUMANCAP ECOOPEN, maxlag (4) lutstats

Selection order criteria (lutstats)
Sample: 1976 2014 Number of obs = 37

lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-880.092			2.5e+13	30.5453	30.5453	30.5453	30.5453
1	-717.434	325.32	36	0.000	2.8e+10*	23.6989*	24.2515*	25.2663*
2	-692.072	50.723	36	0.053	5.8e+10	24.2739	25.3791	27.4087
3	-660.768	62.609	36	0.004	1.2e+11	24.5278	26.1855	29.2299
4	-610.372	100.79*	36	0.000	1.6e+11	23.7496	25.9599	30.0191

Endogenous: l RGDP OILPRICD l TOEXP FDI HUMANCAP ECOOPEN
Exogenous: _cons
.
end of do-file
. do "C:\Users\DRTUKU~1\AppData\Local\Temp\STD0i000000.tmp"
. vecrank l RGDP OILPRICD l TOEXP FDI HUMANCAP ECOOPEN, lag (1)

Johansen tests for cointegration
Trend: constant Number of obs = 40
Sample: 1974 2014 Lags = 1

Maximum rank	Parms	LL	Eigenvalue	Trace statistic	5% Critical value
0	6	-817.11036	.	84.5671*	94.15
1	17	-800.25172	0.56955	50.8498	68.52
2	26	-789.14045	0.42625	28.6273	47.21
3	33	-781.73571	0.30943	13.8178	29.68
4	38	-777.79048	0.17902	5.9274	15.41
5	41	-775.26958	0.11843	0.8856	3.76
6	42	-774.8268	0.02190		

.
end of do-file
. do "C:\Users\DRTUKU~1\AppData\Local\Temp\STD0i000000.tmp"
. vecrank l RGDP OILPRICD l TOEXP FDI HUMANCAP ECOOPEN, lag (1)

Johansen tests for cointegratio
Trend: constant Number of obs = 40
Sample: 1974 2014 Lags = 1

Maximum rank	Parms	LL	Eigenvalue	Trace statistic	5% Critical value
0	6	-817.11036	.	84.5671*	94.15
1	17	-800.25172	0.56955	50.8498	68.52
2	26	-789.14045	0.42625	28.6273	47.21

Continue

3	33	-781.73571	0.30943	13.8178	29.68
4	38	-777.79048	0.17902	5.9274	15.41
5	41	-775.26958	0.11843	0.8856	3.76
6	42	-774.8268	0.02190		

.
end of do-file
. do "C:\Users\DRTUKU~1\AppData\Local\Temp\STD0i000000.tmp"
. varsoc D.l RGDP D.OILPRICD D.l TOEXP D.FDI D.HUMANCAP D.ECOOPEN, maxlag (4) lutstats

Selection order criteria (lutstats)
Sample: 1978 2014 Number of obs = 36

lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-738.717			3.7e+10*	24.0126*	24.0126*	24.0126*	
1	-720.157	37.12	36	0.417	1.0e+11	24.9815	25.5341	26.565
2	-696.808	46.697	36	0.109	2.4e+11	25.6843	26.7897	28.8514
3	-667.114	59.39	36	0.008	5.8e+11	26.0346	27.6927	30.7852
4	-626.803	80.621*	36	0.000	1.6e+12	25.7951	28.0059	32.1292

Endogenous: D.l RGDP D.OILPRICD D.l TOEXP D.FDI D.HUMANCAP D.ECOOPEN
Exogenous: _cons
.
end of do-file
. do "C:\Users\DRTUKU~1\AppData\Local\Temp\STD0i000000.tmp"
. var D.l RGDP D.OILPRICD D.l TOEXP D.FDI D.HUMANCAP D.ECOOPEN

Vector autoregression

Sample:	1977	2014	No. of obs	= 38
Log likelihood	= -737.8809		AIC	= 42.9411
FPE	= 2.13e+11		HQIC	= 44.13704
Det(Sigma_mL)	= 2.96e+09		SBIC	= 46.30246

Equation	Parms	RMSE	R-sq	chi2	p>chi2
D_l RGDP	13	.357891	0.2862	15.2345	0.2289
D_OILPRICD	13	9.6386	0.2721	14.20597	0.2877
D_l TOEXP	13	.417353	0.3326	18.9374	0.0901
D_FDI	13	1.83259	0.4056	25.92573	0.0110
D_HUMANCAP	13	14474.2	0.2107	10.14288	0.6034
D_ECOOPEN	13	9.0126	0.3084	16.94119	0.1518

	Coefficient	Standard Error	z	p>|z|	[95% Conf. interval]	
D_l RGDP						
l RGDP						
LD.	-.0820517	.1462593	-0.56	0.575	-.3687147	.2046113
L2D.	-.0696654	.1455026	-0.48	0.632	-.3548452	.2155144
OILPRICD						
LD.	.0122236	.0077586	1.58	0.115	-.002983	.0274302
L2D.	.0289604	.0096568	3.00	0.003	.0100333	.0478875
l TOEXP						
LD.	.0106987	.1690497	0.06	0.950	-.3206326	.34203
L2D.	-.107326	.1628803	-0.66	0.510	-.4265655	.2119135
FDI						
LD.	-.0213914	.0305327	-0.70	0.484	-.0812343	.0384515
L2D.	-.0238511	.0303771	-0.79	0.432	-.083389	.0356869
HUMANCAP						
LD.	-5.21e-06	4.78e-06	-1.09	0.275	-.0000146	4.16e-06

Continue

L2D.	-.0000119	5.09e-06	-2.33	0.020	-.0000219	-1.90e-06
ECOOPEN						
LD.	.0100149	.0070524	1.42	0.156	-.0038076	.0238373
L2D.	-.0012814	.0070451	-0.18	0.856	-.0150896	.0125269
_cons	.1511404	.0851861	1.77	0.076	-.0158213	.3181022
D_OILPRICD						
l RGDP						
LD.	-1.667856	3.939002	-0.42	0.672	-9.388158	6.052445
L2D.	-.6287923	3.918621	-0.16	0.873	-8.309149	7.051565
OILPRICDq						
LD.	-.546642	.2089518	-2.62	0.009	-.95618	-.137104
L2D.	.3793563	.2600746	1.46	0.145	-.1303806	.8890932
l TOEXP						
LD.	7.154448	4.552784	1.57	0.116	-1.768844	16.07774
L2D.	-5.31324	4.386632	-1.21	0.226	-13.91088	3.2844
FDI						
LD.	.1053557	.8222941	0.13	0.898	-1.506311	1.717023
L2D.	-.5260912	.8181042	-0.64	0.520	-2.129546	1.077363
HUMANCAP						
LD.	.0002636	.0001288	2.05	0.041	.0000112	.0005159
L2D.	.0000177	.0001371	0.13	0.898	-.0002511	.0002864
ECOOPEN						
LD.	-.1620785	.1899321	-0.85	0.393	-.5343386	.2101817
L2D.	.1364656	.1897371	0.72	0.472	-.2354124	.5083436
_cons	.86237	2.294202	0.38	0.707	-3.634183	5.358923
D_l TOEXP						
l RGDP						
LD.	-.2040954	.1705595	-1.20	0.231	-.5383859	.130195
L2D.	-.175901	.169677	-1.04	0.300	-.5084619	.1566598
OILPRICD						
LD.	-.0169221	.0090477	-1.87	0.061	-.0346552	.000811
L2D.	-.0201246	.0112613	-1.79	0.074	-.0421963	.0019471
l TOEXP						
LD.	.0589419	.1971364	0.30	0.765	-.3274383	.4453221
L2D.	-.06972	.1899419	-0.37	0.714	-.4419994	.3025594
FDI						
LD.	.0269298	.0356055	0.76	0.449	-.0428556	.0967153
L2D.	.0411957	.0354241	1.16	0.245	-.0282342	.1106256
HUMANCAP						
LD.1	5.41e-06	5.57e-06	0.97	0.332	-5.52e-06	.0000163
L2D.	4.61e-06	5.94e-06	0.78	0.437	-7.02e-06	.0000163
ECOOPEN						
LD.	-.0113247	.0082241	-1.38	0.169	-.0274436	.0047943
L2D.	.0107031	.0082157	1.30	0.193	-.0053992	.0268055
_cons	.3193489	.0993393	3.21	0.001	.1246474	.5140505
D_FDI						
l RGDP						
LD.	-.1714805	.7489227	-0.23	0.819	-1.639342	1.296381
L2D.	-.166862	.7450478	-0.22	0.823	-1.627129	1.293405
OILPRICD						
LD.	-.0030345	.039728	-0.08	0.939	-.0809	.074831
L2D.	-.0217698	.049448	-0.44	0.660	-.1186861	.0751465
l TOEXP						
LD.	-1.13614	.8656212	-1.31	0.189	-2.832726	.5604468
L2D.	1.301433	.8340306	1.56	0.119	-.3332371	2.936103
FDI						
LD.	-.5617404	.1563429	-3.59	0.000	-.8681668	-.2553141
L2D.	-.1187814	.1555462	-0.76	0.445	-.4236464	.1860836
HUMANCAP						
LD.	.000026	.0000245	1.06	0.289	-.000022	.000074

Continue

L2D.	-6.91e-06	.0000261	-0.26	0.791	-.000058	.0000442
ECOOPEN						
LD.	.0473866	.0361118	1.31	0.189	-.0233912	.1181645
L2D.	.0274067	.0360747	0.76	0.447	-.0432985	.0981118
_cons	-.0555401	.4361967	-0.13	0.899	-.91047	.7993898
D_HUMANCAP						
l RGDP						
LD.	-2707.436	5915.153	-0.46	0.647	-14300.92	8886.051
L2D.	-3192.454	5884.548	-0.54	0.587	-14725.96	8341.049
OILPRICD						
LD.	-264.0841	313.7805	-0.84	0.400	-879.0826	350.9144
L2D.	618.7461	390.551	1.58	0.113	-146.7198	1384.212
l TOEXP						
LD.	5048.793	6836.862	0.74	0.460	-8351.211	18448.8
L2D.	-4314.648	6587.354	-0.65	0.512	-17225.62	8596.328
FDI						
LD.	473.828	1234.83	0.38	0.701	-1946.393	2894.049
L2D.	95.87199	1228.538	0.08	0.938	-2312.017	2503.761
HUMANCAP						
LD.	-.0829166	.1933451	-0.43	0.668	-.4618661	.2960328
L2D.	.0502362	.2059369	0.24	0.807	-.3533928	.4538652
ECOOPEN						
LD.	-393.6748	285.2189	-1.38	0.168	-952.6935	165.3439
L2D.	7.86351	284.9261	0.03	0.978	-550.5813	566.3083
_cons	4221.15	3445.176	1.23	0.220	-2531.271	10973.57
D_ECOOPEN						
l RGDP						
LD.	-4.269083	3.683174	-1.16	0.246	-11.48797	2.949806
L2D.	-3.544561	3.664118	-0.97	0.333	-10.7261	3.636977
OILPRICD						
LD.	-.2651543	.195381	-1.36	0.175	-.6480939	.1177854
L2D.	-.2373047	.2431835	-0.98	0.329	-.7139355	.2393261
l TOEXP						
LD.	-1.662	4.257093	-0.39	0.696	-10.00575	6.681748
L2D.	2.790778	4.101732	0.68	0.496	-5.248468	10.83002
FDI						
LD.	.0538216	.7688883	0.07	0.944	-1.453172	1.560815
L2D.	-.7649118	.7649705	-1.00	0.317	-2.264226	.7344028
HUMANCAP						
LD.	.0001447	.0001204	1.20	0.229	-.0000913	.0003806
L2D.	-.0001634	.0001282	-1.27	0.203	-.0004148	.0000879
ECOOPEN						
LD.	-.07169	.1775965	-0.40	0.686	-.4197728	.2763928
L2D.	-.0708306	.1774142	-0.40	0.690	-.4185561	.2768949
_cons	3.348839	2.145199	1.56	0.119	-.8556743	7.553353

.
end of do-file
. do "C:\Users\DRTUKU~1\AppData\Local\Temp\STD0i000000.tmp"
. vargranger
Granger causality wald tests

Equation	Excluded	chi2	df	Prob>chi2
D_l RGDP	D.OILPRICD	10.131	2	0.006
D_l RGDP	D.l TOEXP	.44055	2	0.802
D_l RGDP	D.FDI	.74385	2	0.689
D_l RGDP	D.HUMANCAP	5.7016	2	0.058
D_l RGDP	D.ECOOPEN	2.1523	2	0.341
D_l RGDP	ALL	14.49	10	0.152

Continue

D_OILPRICD	D.l RGDP	.21182	2	0.900
D_OILPRICD	D.l TOEXP	4.0343	2	0.133
D_OILPRICD	D.FDI	.68107	2	0.711
D_OILPRICD	D.HUMANCAP	4.3583	2	0.113
D_OILPRICD	D.ECOOPEN	1.4279	2	0.490
D_OILPRICD	ALL	9.025	10	0.530
D_l TOEXP	D.l RGDP	2.6278	2	0.269
D_l TOEXP	D.OILPRICD	5.6952	2	0.058
D_l TOEXP	D.FDI	1.3941	2	0.498
D_l TOEXP	D.HUMANCAP	1.2409	2	0.538
D_l TOEXP	D.ECOOPEN	4.1257	2	0.127
D_l TOEXP	ALL	16.778	10	0.079
D_FDI	D.l RGDP	.10759	2	0.948
D_FDI	D.OILPRICD	.19383	2	0.908
D_FDI	D.l TOEXP	4.2627	2	0.119
D_FDI	D.HUMANCAP	1.4341	2	0.488
D_FDI	D.ECOOPEN	2.0762	2	0.354
D_FDI	ALL	10.603	10	0.389
D_HUMANCAP	D.l RGDP	.52809	2	0.768
D_HUMANCAP	D.OILPRICD	3.8024	2	0.149
D_HUMANCAP	D.l TOEXP	.99917	2	0.607
D_HUMANCAP	D.FDI	.16426	2	0.921
D_HUMANCAP	D.ECOOPEN	1.9482	2	0.378
D_HUMANCAP	ALL	8.3938	10	0.590
D_ECOOPEN	D.l RGDP	2.3889	2	0.303
D_ECOOPEN	D.OILPRICD	2.4037	2	0.301
D_ECOOPEN	D.l TOEXP	.62903	2	0.730
D_ECOOPEN	D.FDI	1.4292	2	0.489
D_ECOOPEN	D.HUMANCAP	4.1225	2	0.127
D_ECOOPEN	ALL	14.658	10	0.145

.
end of do-file
. do "C:\Users\DRTUKU~1\AppData\Local\Temp\STD0i000000.tmp"
. varlmar

Lagrange-multiplier test

lag	chi2	df	Prob>chi2
1	29.8364	36	0.75575
2	27.3970	36	0.84798

H_0: no autocorrelation at lag order
. varnorm

Jarque-bera test

Equation	chi2	df	Prob>chi2
D_l RGDP	80.497	2	0.00000
D_OILPRICD	10.743	2	0.00465
D_l TOEXP	2.634	2	0.26799
D_FDI	7.488	2	0.02366
D_HUMANCAP	5.154	2	0.07600
D_ECOOPEN	0.009	2	0.99564
ALL	106.525	12	0.00000

Skewness test

Equation	Skewness	chi2	df	Prob>chi2
D_l RGDP	2.1278	28.674	1	0.00000
D_OILPRICD	-.53969	1.845	1	0.17441
D_l TOEXP	.62932	2.508	1	0.11325
D_FDI	.77579	3.812	1	0.05090
D_HUMANCAP	.86434	4.732	1	0.02961
D_ECOOPEN	-.03664	0.009	1	0.92653
ALL		41.579	6	0.00000

Kurtosis test

Equation	Kurtosis	chi2	df	Prob>chi2
D_l RGDP	8.721	51.823	1	0.00000
D_OILPRICD	5.3707	8.898	1	0.00285
D_l TOEXP	2.7187	0.125	1	0.72333
D_FDI	4.5238	3.677	1	0.05518
D_HUMANCAP	3.5166	0.423	1	0.51566
D_ECOOPEN	2.9878	0.000	1	0.98776
ALL		64.946	6	0.00000

varstable

Eigenvalue stability condition

Eigenvalue	Modulus
-.9092814	.909281
-.5509879+.4000584i	.680907
-.5509879-.4000584i	.680907
.02275595+.6613985i	.66179
.02275595 -.6613985i	.66179
.6322601	.63226
-.2044282+.4712675i	.513696
-.2044282-.4712675i	.513696
.4683946	.468395
.1955007+.4147136i	.458484
.1955007-.4147136i	.458484
-.4031531	.403153

All the eigenvalues lie inside the unit circle
VAR satisfies stability condition
.
end of do-file
. do "C:\Users\DRTUKU~1\AppData\Local\Temp\STD0i000000.tmp"
. log close
log: C:\Stata 9.1\Ahmad_M_Abdullahi.log
log type: text
closed on: 24 Sept. 2015, 16:49:34.

REFERENCES

1. Okeke, M., 2015. Nigeria: Oil price slump, polls uncertainty weigh on economy. Zenith Econ. Quat., 11: 5-12.
2. Akpan, E.O., 2009. Oil price shocks and Nigeria's macro-economy. http://www.csae.ox.ac.uk/conferences/2009-EDiA/papers/252-Akpan.pdf.
3. Oyeyemi, A.M., 2013. The growth implications of oil price shock in Nigeria. J. Emerging Trends Econ. Manage. Sci., 4: 343-349.
4. Baumeister, C. and G. Peersman, 2009. Sources of the volatility puzzle in the crude oil market. December 11, 2009. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1471388.

5. Oriakhi, D.E. and I.D. Osaze, 2013. Oil price volatility and its consequences on the growth of the nigerian economy: An examination (1970-2010). Asian Econ. Fin. Rev., 3: 683-702.
6. Olomola, P.A. and A.V. Adejumo, 2006. Oil price shock and macroeconomic activities in Nigeria. Int. Res. J. Fin. Econ., 3: 28-34.
7. Bernanke, B.S., G. Mark and W. Mark, 1997. Systematic monetary policy and the effects of oil price shocks. Brook. Papers Econ. Activity, 1: 91-142.
8. Iklaga, F.O. and O.P. Evbuomwan, 2012. Macroeconomic impact of oil price shocks on oil rich economies: Evidence from Nigeria using a structural VAR approach. Proceedings of the 31st USAEE/IAEE North American Conference, November 4-7, 2012, Austin, Texas.
9. Chuku, A.C., E. Effiong and N. Sam, 2010. Oil price distortions and their short-and long-run impacts on the Nigerian economy. http://econpapers.repec.org/paper/pramprapa/24434.htm.
10. Alley, I., A. Asekomeh, H. Mobolaji and Y.A. Adeniran, 2014. Oil price shocks and Nigerian economic growth. Eur. Sci. J., 10: 375-391.
11. Hamilton, J.D., 1983. Oil and the macroeconomy since world war II. J. Political Econ., 91: 228-248.
12. Burbidge, J. and A. Harrison, 1984. Testing for the effects of oil-price rises using vector autoregressions. Int. Econ. Rev., 25: 459-484.
13. Cunado, J. and F.P. de Gracia, 2003. Do oil price shocks matter? Evidence for some European countries. Energy Econ., 25: 137-154.
14. Berument, H. and N.B. Ceylan, 2005. The impact of oil price shocks on the economic growth of the selected MENA countries. Proceedings of the Economic Research Forum (ERF) 12th Annual Conference, December 19-21, 2005, Cairo, Egypt.
15. Farzanegan, M.R. and G. Markwardt, 2009. The effects of oil price shocks on the Iranian economy. Energy Econ., 31: 134-151.
16. Lescaroux, F. and V. Mignon, 2008. On the influence of oil prices on economic activity and other macroeconomic and financial variables. Working Paper No. 2008-05, Centre D'etudes Prospective Et D'informations Internationales (CEPII), April 5, 2008.
17. Elmi, Z.M. and M. Jahadi, 2011. Oil price shocks and economic growth: Evidence from OPEC and OECD. Aust. J. Basic Applied Sci., 5: 627-635.
18. Masoud, A.M., S. Mehdi and D. Mohammad-Reze, 2012. Instability of oil prices and gross domestic product in Iran. Am. J. Sci. Res., 6: 85-90.
19. Ayadi, O.F., A. Chatterjee and C.P. Obi, 2000. A Vector Autoregressive Analysis of an Oil-Dependent Emerging Economy-Nigeria. OPEC Rev., 24: 330-349.
20. Olusegun, O.A., 2008. Oil price shocks and the nigerian economy: A forecast error variance decomposition analysis. J. Econ. Theory, 2: 124-130.
21. Aliyu, S.U.R., 2009. Oil price shocks and the macroeconomy of Nigeria: A non-linear approach. MPRA Paper No. 18726. http://mpra.ub.unimmuenchen.de/18726/.
22. Arinze, P.E., 2011. The impact of oil price on the Nigerian economy. J. Res. Nat. Dev., 9: 211-215.
23. Umar, G. and A.A. Kilishi, 2010. Oil price shocks and the Nigeria economy: A variance autoregressive (VAR) model. Int. J. Bus. Manage., 5: 39-49.
24. CBN., 2011. Statistical bulletin. Central Bank of Nigeria, Abuja, Nigeria.
25. Omoniyi, B.B. and O.A. Omobitan, 2011. The impact of foreign direct investment and economic growth in Nigeria. Int. Res. J. Fin. Econ., 73: 122-132.
26. Adelakun, O.J., 2011. Human capital development and economic growth in Nigeria. Eur. J. Bus. Manage., 3: 29-38.
27. Obida, G.W. and N. Abu, 2010. Determinants of foreign direct investment in Nigeria: An empirical analysis. Global J. Hum. Social Sci., 10: 26-34.
28. Anyanwu, S.O., S. Peter and D.U. Innocent, 2009. Foreign direct investment and economic growth: Empirical evidence from time series data in Nigeria. J. Econ. Allied Fields, 4: 64-71.
29. Babalola, S.J., S.D.H. Dogon-Daji and J.O. Saka, 2012. Exports, foreign direct investment and economic growth: An empirical application for Nigeria. Int. J. Econ. Finance, 4: 95-105.
30. Johansen, S., 1988. Statistical analysis of cointegration vectors. J. Econ. Dyn. Control, 12: 231-254.
31. Granger, C.W.J., 1986. Developments in the study of cointegrated economic variables. Oxford Bull. Econ. Stat., 48: 213-228.
32. Jafiya, A., 2004. Financing exports of goods and services and ensuring prompt payment. Proceedings of the National Seminar on Exports, Organized by Africa Project Consult, March 12, 2004, Kano.
33. Amir, M., B. Mehmood and M. Shahid, 2012. Impact of human capital on economic growth with emphasis on intermediary role of technology: Time series evidence from Pakistan. Afr. J. Bus. Manage., 6: 280-285.
34. Mordi, C.N. and M.A. Adebiyi, 2010. The asymmetric effects of oil price shocks on output and prices in Nigeria using a structural VAR model. Central Bank Nig. Econ. Fin. Rev., 48: 1-31.