THE EFFECTS OF FLUCTUATIONS OF OIL PRICE ON ECONOMIC GROWTH OF LIBYA

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ABSTRACT

Since the first oil price fluctuation in 1973s, macroeconomists have viewed sharp movements in the price of oil are generally as an important source of economic fluctuations. Furthermore, the very recent highs registered in the crude oil market are causing concern about possible slowdowns in the economies of many developed countries and it has a significant role in the economic growth of Libya. The purpose of this study is to investigate the effect of fluctuations in oil prices on Libya's economic growth. This is achieved by the use of (VAR) modal and co-integration techniques. In this respect, the relation between two variables will be analyzed by using annual data from 2000 to 2015. The results indicate that both series are integrated of order one I (1), having a long-term relationship between crude oil price and growth. The estimates suggest that higher oil price has a positive and statistically important impact on the economic growth of Libya.

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Keywords: Oil price, Economic growth, Libya, GDP, Oil price shocks, VAR models, Impulse response function.

Contribution/ Originality

This study contributes in the existing literature by analyzing the effect of fluctuations in oil prices on Libya's economic growth. This study also departs from previous studies relating Libyan economy and oil price fluctuations by considering the implications of both positive and negative oil price fluctuations on GDP in Libya.

1. INTRODUCTION

Recently, it appears that economic growth plays a key role in industrial innovation (Malatyali, 2016). Since the first fluctuations in crude oil prices in 1973s, macroeconomists have viewed sharp movements in the oil price are generally as an important source of economic fluctuations, for example, Hamilton (2005) suggests that In the last few decades, nine of the ten recessions in the USA were preceded by large positive increases in crude oil price. Moreover, the very recent highs registered in the crude oil market are causing concern about slowing in the economies of many developed countries. After nearly four years of stability, the crude oil price more than halved in a period of fewer than five months from September 2014. The price of a barrel of Brent crude oil in European countries fell from than $100 p/b in Sept 2014 to less than $46 p/b in January 2015. The oil price has more than halved in less than eleven months since Sept 2014. Besides, the decline was the third largest over the past 30 years, has particularly

interesting parallels with the episode in 1985-86, therefore, renewed interest in the impacts of fluctuating oil prices on the economy. Therefore, this relation has captured increasing attention of academic researchers such as: (Hamilton, 2009; Kilian and Vigfusson, 2011; Edirneligil and Mucuk, 2014; Ftiti *et al.*, 2016) the most influential articles in the field, and others. The impacts of fluctuations in oil prices on economic growth and their mechanism in oil-exporting countries differ from those in the oil-importing countries (Moshiri and Banihashem, 2012).

According to the EIA global, economic performance remains highly correlated with oil prices. In addition, an oil price increase contributes to a transfer of wealth from oil importing to oil-exporting countries by a shift in the terms of trade. Movements in oil prices, An important factor in the production process, affecting the financial performance and cash flows of the companies, in turn, influencing firms dividend payments, retained earnings, and equity prices (Benli, 2008).

In recent years, the economists have identified a combination of factors contribute of oil price fluctuations. For instance, shocks to the supply arising from political events such as wars and revolutions in OPEC member countries, improvements in the technology of extracting crude oil price, and the discovery of new fields. Also are important steps in this regard, for example, in Taiwan "renewable energy development plan" of the installed capacity of solar power generation capacity planned between the years 2002-2020 in accordance with the aimed to reach 10 percent (Kizgin and Benli, 2013). In addition, a shock to the oil demand for crude oil price associated with unexpected movements in the global business cycle. As well, demand shock for above ground oil inventories, reflects shifts in expectations about future shortfalls of supply relative to demand in the oil markets (see Hamilton (2008)). The period includes a lot of fluctuation and two severe accidents. One crash, In recent months of 2008, the so-called worst financial crisis since the great depression. Due to the expansion of financial derivative instruments, which have often been held accountable for giving rise to the financial crisis in 2008 (Ulusoy, 2011).

The second crash, the oil price has declined sharply over $100 per barrel since June 2014 to around $30 pb recently. The decline in oil prices pose considerable challenges for fiscal, monetary and structural policy.

However, the shocks in oil price create uncertainty and undermine effective fiscal management of oil revenues. According to costs (Erdoğan, 2011) businesses seeking capital, uncertainties affecting the cost of capital is beneficial because it eliminates and reduces compliance costs. Changing oil prices have an effect on the global economic performance and the economy level of any country. This impact, in general, is positive or negative depends on the nature of the relation between oil-exporting economy and oil-importing economy (Le and Chang, 2015) that higher oil revenues play an oil price increase contributes to a transfer of wealth from oil importing to oil-exporting countries (Balcilar and Ozdemir, 2013).

Studying the relationship of between crude oil price shocks and economic performance is significant for investors to take necessary investment decisions and for policy makers to regulate financial markets more effectively. Marketable securities, which can be considered as an indicator of accounting standards increase refers to temporary investments that are bought or sold for companies, the evaluation of the fair value method of marketable securities is another important issue (Erdoğan *et al.*, 2016). Hierarchical structure may be useful in the detection of the theoretical description of financial markets and in the search of economic factors affecting special groups of stocks (Ulusoy *et al.*, 2012).

Oil Libyan oil production is necessary for the economy, where oil output accounts for 25 percent of economic output in the country. Libya is responsible for only 2 percent of all oil production worldwide, although its share of the European markets is estimated at 10.

It has Africa's largest oil reserves and in normal times this representing 97 percent of export earnings[1], on average, 91percent of government revenue in annual budgets maintaining the Libyan economy afloat. Moreover, the gas and oil sector contributes about 60 percent of GDP, but a civil war between rival governments at either end of the country has shattered the Libyan economy, leaving the population almost entirely dependent on revenue generated abroad. Figure 1 shows the evolution of shows the evolution of GDP in Libya and international crude oil price.
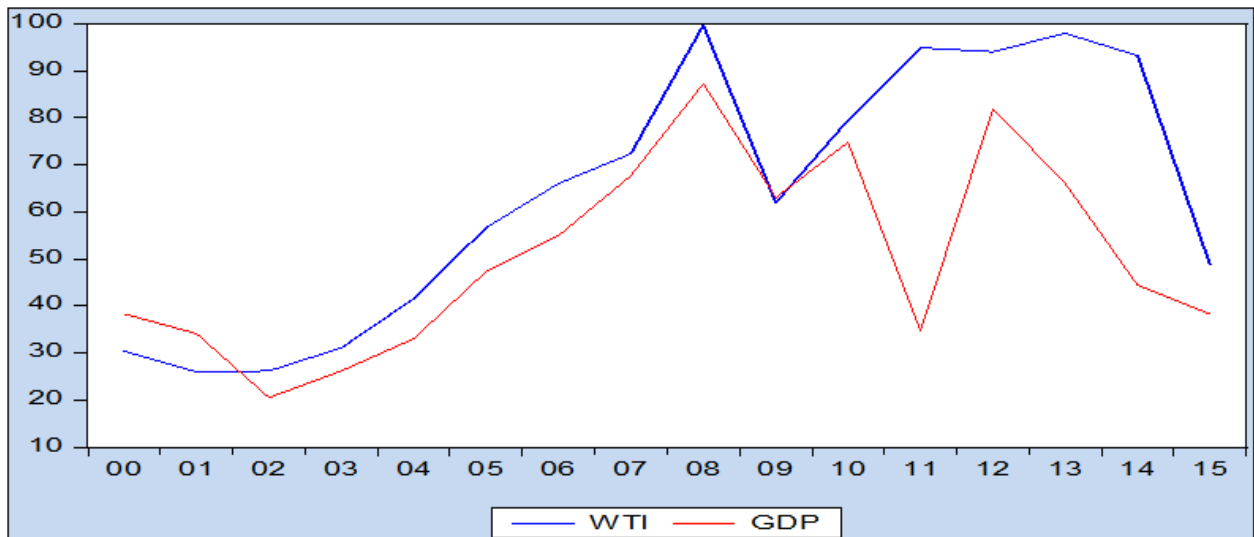

Figure-1. The Evolution of GDP and Crude Oil Prices[2]
Source: EIA (2016) updated: monthly, last updated: 31/07/2016.

Regardless of the fact that Libya depends heavily on exports oil, thus volatility in crude oil prices is a cause for concern. Leading to, any particular shock in oil prices can have a significant effect on government revenue and the Libyan economy. Thus, this will negatively affect the competitiveness and growth of the non-hydrocarbon economy.

The primary aim of this study is to empirically analyze the effect of oil price shocks of GDP Libyan. To fill out the hiatus in the economic research that is examining the consequences of oil price fluctuation on Libya economic growth through annual data 2000 to 2015, the secondary data were used for the empirical analyses which were derived from the energy information administration, the IFS database of the IMF. The remaining of the paper is organized in the following way. The second section provides an overview of the research conducted. The third section provides the econometric methodology, the section fourth, results and discussion, and finally, the conclusion in the fifth section.

2. RESEARCH CONDUCTED

Oil price shocks have been one of the issues discussed in the extensive literature of energy economics since the mid-seventies when the oil price shock in 1973 increased the talking is concerning the oil economy as never before. In this regard, generated an extensive literature on the effect of oil price changes on economic growth, most of which demonstrated a negative correlation.

However, most of the empirical studies about the effects of shocks in oil price on economic growth have largely focused developed economies, while very little information exists about an emerging oil-exporting countries such as Libya. Shock in oil prices affects different countries differently, depending on whether the country in question is an exporter or an oil importer. However, there are several contributions of this study to the literature, for instance:

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[1] - The share of fuel exports exceeds 90 percent of total exports.

[2] - Average annual (WTI) crude oil price (in U.S. dollars per barrel).

Farzanegan and Markwardt (2009) this study shows the dynamic relationship between oil price fluctuations and main macroeconomic variables in Iran's economy through applying a VAR model for the period 1975-2006. The study shows that the asymmetric impacts of shocks in oil price. For instance, positive and negative shocks in oil prices contributed significantly to high inflation. In addition, that there is a significant positive relationship between shocks in oil price and the growth of industrial production.

Berument et al. (2010) this study reveals the influence of shock in oil prices on the GPD growth of selected MENA[3] countries that are considered either exporters or importers oil. Using a VAR approach and employing an IRF, for the period 1952-2004. The study suggests that movements in oil prices do not appear to have a statistically significant impact on the outputs of oil-importing countries. However, this study shows that higher oil price has a positive and statistically significant and effect on output in oil-exporting countries. Libya was included in that study, but the analysis was conducted on the aggregate level. Our analysis is detailed and uses more accurate data.

Umar and Kilishi (2010) the study found the impact of oil price fluctuations on economic of Nigeria by Using VAR test, the effect of oil price movements on four main economic variables was examined. The results show that movements in oil price have a significant effect on the real gross domestic product, money supply, and unemployment. However, oil price impact on the CPI is not significant.

Tang et al. (2010) the author found that high oil prices, negative effect on output and investment, and a positively on the interest rate and inflation rate in China's economy.

Akas et al. (2010) show that shocks in oil price have a short-term effect on real GNP, inflation rate, unemployment rate and the ratio of exports to imports in Turkey for the period Q2:1991-Q2:2008, depending on the VAR model. They also found that rising oil prices have the opposite effect on unemployment and the ratio of exports to imports.

Ahmed and Wadud (2011) this paper shows the impact of oil price uncertainty on Malaysian macroeconomic variables and monetary responses for the period from 1986 to 2009. Impulse response functions show a long-term impact of oil price fluctuations on industrial. They furthermore show that level of CPI drop with a positive fluctuations to oil price uncertainty.

Aydın and Acar (2011) this study shows the economic effects of oil price fluctuations on the Turkish economy in the coming decades. This paper analyzes the economic impacts of fluctuation in the oil price of Turkey, and the potential long-term effects of fluctuation in oil price on GDP, trade balance, indirect tax revenues, CPI, and carbon emissions. By Turk GEM-D, analyzed the effect of fluctuation in oil price on three cases: reference, low and rising oil price. Results indicate that these shocks in oil prices have very large impacts on Turkish economy indicators.

Eryiğit (2012) achieves the results of fluctuating in oil price on the Turkish exchange rate, interest rate and the main index of Istanbul stock market exchange rate in the short term using weekly data from 07/01/2005 - 31/10/2008 by using (VAR) model. Their analysis indicates that fluctuating in oil price have positive effects on the stock market and negative effects on both interest rates and exchange rates.

Abdalla (2013) examined the effect of shocks in oil price on stock returns in Saudi Arabia. The empirical evidence from daily returns on the Saudi stock returns (Tadawul) index and daily oil price refers that the stock returns return volatility Increase as a result of shocks in crude oil prices during the study period.

Ayşen and Mehmet (2014) this research aims to determine the impact of oil price on economy growth for Turkey from the period 1980-2013. For this purpose, unit root test, Johansen Co-integration test, variance decomposition, and

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[3] - MENA is the abbreviation of "Middle East and North Africa", and the selected countries are Libya, Algeria, Iran, Iraq, Kuwait, Oman, Qatar, Syria, the UAE, Bahrain, Djibouti, Egypt, Israel, Jordan, Morocco and Tunisia.

impulse response functions were applied. According to obtained results, there is no long-term relationship between the variables. That a shocks in oil price have a negative effect on gross domestic product in the short-run.

Alley *et al.* (2014) this research aims to examine the effect oil price on the Nigerian economy for the period 1981-2012. This research shows that shocks in oil price insignificantly impedes economic growth, hence oil price changes impact was negative. While oil price significantly improves it. The significant positive effect of oil prices on economic growth stresses the conventional wisdom that the high oil prices are beneficial to the oil-exporting country like Nigeria. However, the oil price shocks create undermine and uncertainty effective fiscal management of oil revenues.

Ftiti *et al.* (2016) the researcher studied the degree of interdependence between oil price shocks and economic growth for (United Arab Emirates, Kuwait, Saudi Arabia, and Venezuela) in OPEC during the period from 2000 to 2010. They used co-integration test, the researcher showed that oil price shock short-term and medium-term during the period of fluctuations in financial turmoil and the global business cycle impact on economic growth in Organization of the Petroleum Exporting Countries. Although, the effect of the medium-term effects is greater than that of the short-term effects.

Negi (2015) the researcher studied the impacts of oil price shocks on gross domestic product (India, Russia, Brazil, and China) 1987-2014. Show that the oil price has a positive relationship with GDP. The oil price increase has a negative relationship with gross domestic product in the China and India and on the other side the positive coefficient values of Russia and Brazil the positive impact of oil price increase on GDP.

Akram and Mumtaz (2016) the impact of oil price fluctuations in the economy Norway since the since the 1980s. They show that oil price fluctuations have contributed to sizable volatility in the economy variables over the period starting from the 1980s.

Wei and Guo (2016) an empirical analysis of the relationship between oil prices and the Chinese macroeconomic (1996-2014). They find that Interest rate and output responds dramatically to the shocks in oil price. Oil prices changes are found to be useful for forecasting the China's exports in the periods shorter than about two years.

Rahma *et al.* (2016) the impact of oil prices on Sudan's GDP growth and unemployment rates, using (VAR) model for the period 2000-2014. They found that the decrease in oil price has a greater impact on gross domestic product growth. The decrease in oil price has a significant positive effect on the unemployment rate.

Nusair (2016) the impact of oil prices on the economies of the Gulf Cooperation Council (GCC) countries: Non-linear analysis. The study found that positive oil price changes have a considerably larger effect on real GDP than negative changes.

Caldara *et al.* (2016) this study examined that shock in oil supply account for 50 percent of oil prices fluctuation, shocks to global demand account for 30 percent of oil price shocks; they also examined that a lower in oil prices driven by supply shocks depresses economic performance in emerging economies, while it boosts economic activity in advanced economies, thus helping explain the muted effects of oil price changes on global economic activity; they also found the selection of oil market elasticity is essential to understanding the nature of oil price volatility and to measuring the size of the complications of oil price on economic activity.

Al Rasasi and Yilmaz (2016) this paper examines the effects of oil price volatility on Turkish economic growth, with quarterly data spanning from 1987:Q$_2$ to 2015:Q$_1$ for real (GDP), nominal exchange rates (national currency per US dollar), (CPI), and crude oil price (WTI). They find that effect of fluctuations in oil prices, with a negative output growth. However, rising crude oil price are associated with rising consumer prices and depreciating exchange rate. In addition, they found that increases in oil price and decreases are associated with a delayed lower output growth rate. In addition, they find rising crude oil price affect consumer prices positively.

Monesa (n.d) this paper aims to determine the impacts of oil prices on economic growth of the oil-exporting countries (OPEC) Algeria, Iran, Kuwait, Saudi Arabia, Nigeria and Venezuela. for the period from 1980-2013, for this purpose, the study uses Augmented Dickey-Fuller (ADF) and (VAR) model. The paper showed that oil prices impact was negative on gross domestic product growth of Algeria whereas it's positive in Venezuela. In addition, a statistically significant negative effect of an oil shock on an inflation rate of Venezuela whereas it's positive in Iran, the results for the remaining countries are statistically insignificant.

In the end, from the previous literature review, it is difficult from draw a single conclusion about the effect of oil price shock on economic growth. It is different from the economy to another economy, depending on whether the country in question is an exporter of crude oil or an importer. However, most studies on developing countries showed a negative correlation between oil prices and economic growth. In addition, experimental results for developing countries differ more in the directions of impacts. It can be a reason for the choice of model variables, model specifications, monetary policy, and the nature of the economy.

3. DATA AND METHODOLOGY

3.1. Data

The relationship between two variables will be analyzed by using annual data over the period from 2000 to 2015. The variables used in this study are the crude oil price (WTI) and gross domestic product (GDP). Except that of GDP data, is only available in the form of annual data. Consequently, this study has chosen annual data instead of quarterly or monthly data. The data about GDP is obtained from the base of the international financial statistics data to the IMF while data about WTI is obtained from the U.S. energy information administration. For analyzing variables, it will be used Johansen co-integration test, impulse response function, and variance decomposition tests.

3.2. Methodology

First of all, in our analysis is to ensure the stationarity properties of the economic variables we consider. To do so, we rely on, the Augmented Dickey-Fuller (ADF) test and the Dickey and Fuller test are employed to test for stationarity of the series to confirm the integrational properties of the data series in their levels and I(1). Most of the lag length is determined by using Akaike Information Criteria (AIC). The null hypothesis in the ADF test is that the series is non-stationary or has a unit root. The series is stationary if the null hypothesis is rejected. If the series is not stationary in level, but stationary in the first difference, then it is said to be integrated of order one, I(1). In order to understand the interaction between the two variables, (VAR) model was employed to assess the relationship. However, before estimating the (VAR) model, the properties of the two variables were verified in terms stationarity and long-term relationship. The econometric tools that were used for these verifications are the Augmented Dickey-Fuller test for stationarity and Johansen co-integration test for a long-term relationship. The VAR models to establish the interactions among these variables are: The (VAR) model is commonly used for forecasting systems of interrelated time series and for analyzing the dynamic impact of random disturbances to the system of variables. The mathematical representation of a VAR is:

$y_t = A_1 y_{t-1} + \ldots + A_p y_{t-p} + B x_t + e_t$ ....(1)

Where, y_t is a k vector of endogenous variables, and contains the oil prices, and GDP as given an order, A_1, A_p and B are matrices of coefficients to be estimated.

The effects of oil price shocks on gross domestic product are measured with the help of regression analysis. The fixed regression model is as follows, $Y = a + bx + e$ .... (2)

where: Y= GDP, a= intercept, b= regression coefficient, x= crude oil price, e= error term.
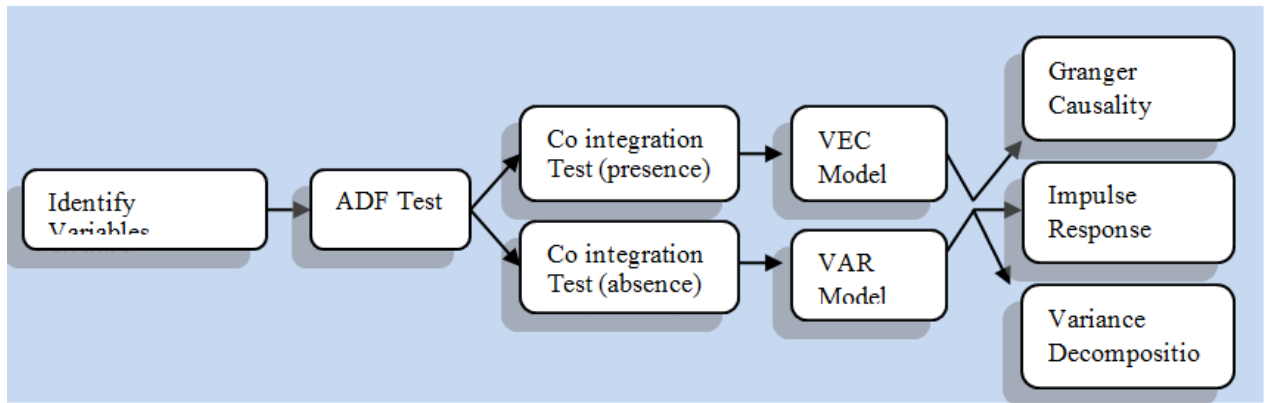
4. RESULTS AND DISCUSSION

To analyze the long-run co-integrated relationship among WTI, GDP by VAR sample application, first, it is necessary to test and the order of integration of the two variables in the model. If the two variables in the model are not stationary, conventional hypothesis testing and confidence intervals will be unreliable. In the existence of non-stationary two variables, there may be a so-called spurious regression. A spurious regression has a high R^2 and a t-statistic that appears to be significant, but actually have no economic meaning (Alhajhoj, 2007). All the data series were tested for stationarity to avoid statistically spurious relationships.
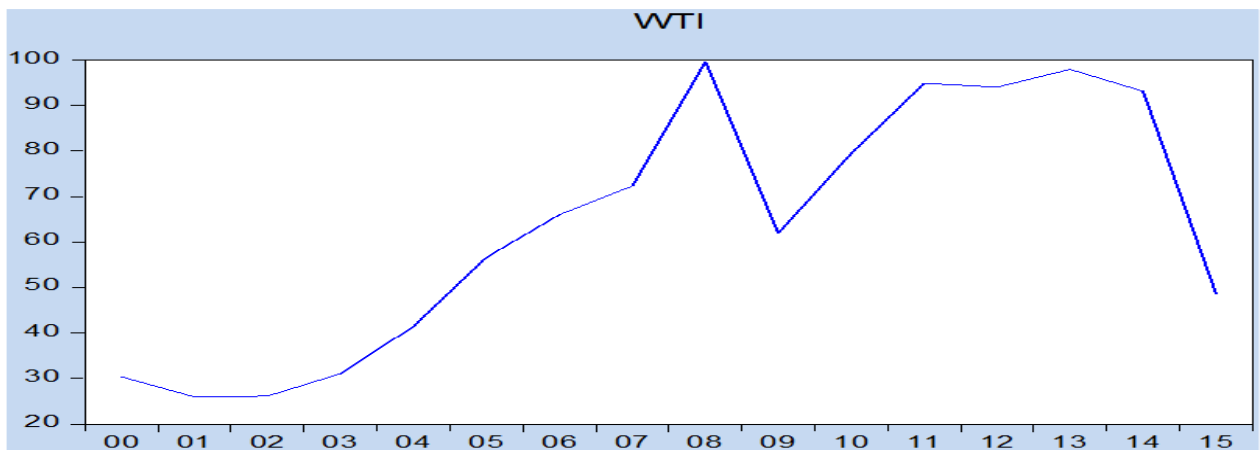
Figure-2. Average Annual (WTI) Oil Prices (In U.S. Dollars Per Barrel)

Source:EIA (2016) updated: monthly, last updated: 31/07/2016.

Figure-3. GDP, Current Prices (U.S. Dollars)

Source:EIA (2016) updated: monthly, last updated: 31/07/2016.

Table 1. Results of Unit Root Test (Stationarity Test of the Variables)

Variables		Test Critical Values			t. prob	Decision
	Level	1% level	5% level	10% level		
WTI	Constant	-3.959148	-3.081002	-2.681330	.4593	Non-stationary at level
	t. Statistical = -1.597618					
	Constant, Trend	-4.728363	-3.759743	-3.324976	.8975	
	t. Statistical =-1.082103					
	None	-2.728252	-1.966270	-1.605026	.5367	
	t. Statistical =-.0362500					
GDP	Constant	-3.959148	-3.081002	-2.681330	.2322	Non-stationary at level
	t. Statistical =-2.143298					
	Constant, Trend	-4.728363	-3.759743	-3.324976	.4786	
	t. Statistical =-2.153140					
	None	-2.740613	-1.968430	-1.604392	.3922	
	t. Statistical =-0.709637					

Source: Researcher' computations, E-views, 7.

Table-2. Results of Unit Root Test

Variables		Test Critical Values			t.prob	Decision	Order of Integration
		1% level	5% level	10% level			
D(DWTI)	Constant	-4.0579	-3.1199	-2.7011	.0006	stationary at first difference	I (1)
	t. Statistical =-6.04279						
	Constant, Trend	-4.8864	-3.8289	-3.3629	.0020		
	t. Statistical =-6.266991						
	None	-2.7549	-1.9709	-1.6036	.0000		
	t. Statistical =-6.223436						
D(DGDP)	Constant	-4.0044	-3.0988	-2.6904	.0000	stationary at first difference	I (1)
	t. Statistical =-9.073052						
	Constant, Trend	-4.8000	-3.7911	-3.3422	.0000		
	t. Statistical =-8.798350						
	None	-2.7406	-1.9684	-1.6043	.0000		
	t. Statistical =-9.430122						

Source: Researcher' computations, E-views, 7.

The results of unit root tests, presented in table 1, the results show that the variables are non stationary at level. The results of unit root tests, presented in table 2, the two variables were tested for stationary, from table 2 above it showed that they are all integrated of order one I(1) after the first difference series showed stationary[4], indicates the rejection of the null hypothesis on non-stationary.

Secondly, it is necessary to determine an optimal lag length of the vector autoregression models using information criteria. Table 3 shows the vector autoregression models Lag order selection criteria endogenous variables: D(GDP), D(WTI) and Exogenous variables C.

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[4] -When the logarithm of oil prices and GDP series have a single unit root and if these series are co integrated, then the OLS estimate between these two variables is admissible.

Table-3. VAR Model Lag Length Determination Criterion Results

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-115.2316	NA	233394.4	18.03563	18.12255	18.01776
1	-112.1942	4.672842	275104.6	18.18373	18.44448	18.13014
2	-96.50919	19.30468*	48711.71*	16.38603*	16.82061*	16.29670*

Notes: * indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5 % level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Source: Researcher' computations, E-views, 7.

The optimal lag length are two periods (Lag=2) according to all information criteria (LR, FBE, AIC, SC, HQ). The stability of the vector autoregression models model was tested using AR root graph that shows the inverse roots of the AR polynomial.
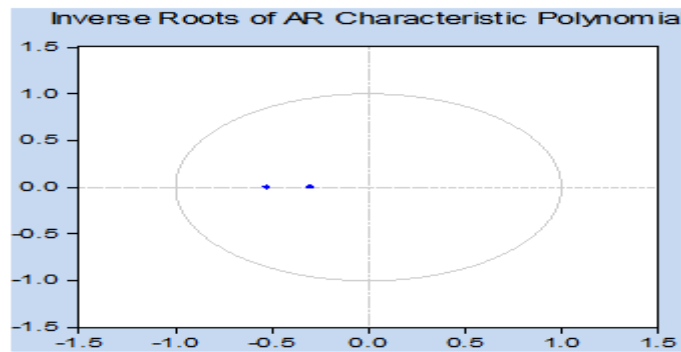

Figure-4. Inverse Roots of AR Characteristic Polynomial
Source: Researcher' computations, E-views,7.

The points in figure 4 are the inverse roots of the vector autoregression models. It can be seen in the graph all the polynomial roots were inside the unit circle; which means that the model does not suffer from the problem of autocorrelation or heteroscedasticity. In the next step Johansen trace and maximum eigenvalue co-integration tests were used to determine whether there is a long term relationship between oil price and economic growth. The results of the trace and maximum eigenvalue tests are reported in table 4 which shows the number of co-integrating vectors. Johansen develops two test statistics: Trace statistics ((λ trace) and maximum eigenstatistic (λ max). The results indicate that the trace tests and max-eigenvalue indicate two co-integrating at the 0.05 level (Table 4).

Table 4. Results of Johansen Co-integration Tests

Table-4. Unrestricted Co Integration Test (Trace Statistics and Maximum Eigenvalue) Between GDP And Oil Price.

Hypothesized		Trace	Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Statistic	Critical Value	Prob.
None	0.377554	9.082305	6.637380	15.49471	0.3578
At most 1	0.160239	2.444925	2.444925	3.841466	0.1179

Notes: Trace test indicates no co-integration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level

The co-integration tests showed that there is no co-integration among the variables. Hence, there is no long-term relationship between oil price and economic growth in Libya. To examine the short term relationship between GDP and shocks in oil price, variance decomposition and impulse response functions were used. Figure 5 below shows the responses of GDP to crude oil price change.
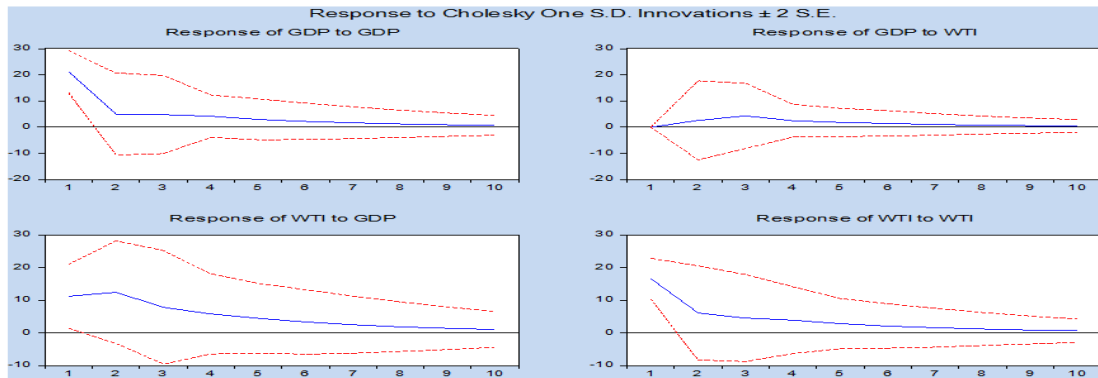

Figure-5. Impulse-Response Functions

When the test results are considered, it is observed that one standard deviation oil price shocks have statistically significant, contemporaneous, and positive effects on the GDP of Libya, and the largest positive response occurring within the third period. Finally, a variance decomposition analysis was used to measure the proportion of forecast error variance in a variable that is explained by innovations in itself and the other variables. The variance decomposition of the **v**ector autoregression model**s** was presented in table 5.

Table 5. Variance Decomposition

Table-5. Variance Decomposition of GDP:

Period	S.E.	GDP	WTI
1	21.23092	100.0000	0.000000
2	21.97415	98.58652	1.413478
3	22.90930	95.12233	4.877675
4	23.42696	94.20949	5.790508
5	23.68692	93.74180	6.258201
6	23.83445	93.45675	6.543248
7	23.91791	93.30277	6.697231
8	23.96457	93.21786	6.782136
9	23.99081	93.17008	6.829916
10	24.00557	93.14327	6.856734
Period	S.E.	GDP	WTI
1	20.03674	31.43289	68.56711
2	24.37177	47.36038	52.63962
3	26.00359	50.68982	49.31018
4	26.93347	51.94093	48.05907
5	27.45480	52.67427	47.32573
6	27.74020	53.06295	46.93705
7	27.89962	53.27081	46.72919
8	27.98916	53.38634	46.61366
9	28.03943	53.45084	46.54916
10	28.06770	53.48693	46.51307

Cholesky Ordering: GDP WTI

Table 5 presents the forecast error variance decomposition when the linear measure of oil fluctuations is used. It is easily seen that oil price fluctuations had 0 percent initial impact on GDP, while there was a slight increase to about 1.4 percent in the 2th period before an eventual increase to 6.8 percent at the end of the 10th period.

According to variance decomposition, around 31 percent variation in GDP was explained by oil price in the 10th term. On the other hand, a 53 percent variation in oil price was explained by GDP.

The slope coefficient of the input (oil price) in the regression analysis has a positive impact on GDP. Every 1 percent change in oil prices makes 0.54 percent change in the GDP of Libya economy positively. The P-value for the F stat is 0.0012. Hence the null hypothesis is rejected. It can be concluded that the shocks of oil price have a positive effect on the GDP. These findings are consistent with other previous studies such as (Rautava, 2004; El Anshasy, 2009; Berument *et al.*, 2010; Umar and Kilishi, 2010; Mehrara and Mohaghegh, 2011; Moshiri and Banihashem, 2012; Dabrowski, 2015; Nusair, 2016). The regression equation is as follows: GDP = 15.93+ 0.54*WTI +e

5. CONCLUSION

Libya, which is prominent oil producers, tend to be affected by shocks in oil price mostly in the period when the shock occurs. Libya is influenced by wars that severely disrupted economic growth and weaken investor confidence. This study aims to empirically investigate the impacts of shocks in oil price on economic growth for Libya from the period 2000-2015. Johansen co-integration test and variance decomposition impulse response functions were applied. According to obtained results, there is no relationship between two variables in the long run.

Impulse response functions showed that shock in oil prices has a positive effect on gross domestic product in the short-run, that explain by the oil prices increase to cause a higher cash income, and this will affect all the GDP components. In this context; through the results gained by analysis of econometric model we can give some recommendation: it is expedient for the country's policymakers to provide the enabling policies that could lead to the diversification of the nation's economy from oil export (lessen its reliance on petroleum trade) to non-oil export products. Diversification of the economy is necessary in order to reduce the consequences of external shocks. It is understood the restoration of political stability and security is a prerequisite for economic diversification.

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