North Asian International Research Journal of Social Science & Humanities

ISSN: 2454-9827 Vol. 4, Issue-6 June-2018

IRJIF: 3.015

Index Copernicus Value: 57.07 UGC Journal No: 48727

SYMMETRIC AND ASYMMETRIC IMPACT OF OIL PRICE SHOCKS ON GOVERNMENT BUDGET: EVIDENCE FROM SAUDI ARABIA

***DR. MAMDOUH ABDELMOULE ABDULSALAM, **DR. SAMIRA KHAN,**

*****DR. WALAA MAGDY ESMEILREZK & ****DR. BILAL A. BHAT**

**Assistant Professor, Imam Abdulrehman bin Faisal university, Dammam Kingdom of Saudi Arabia ,*
***Assistant Professor, Imam Abdulrehman bin Faisal university, Dammam Kingdom of Saudi Arabia,*
****Assistant Professor, Imam Abdulrehman bin Faisal university, Dammam Kingdom of Saudi Arabia,*
*****Associate Professor, Division of Social Science, FoFy, SKUAST-K, Jammu and Kashmir*

ABSTRACT

The paper explores the short run and long run asymmetric effect of oil price changes on the aspects of the government budget in Kingdom of Saudi Arabia and utilizes the nonlinear ARDL approach. The asymmetric effect of oil price shocks on different aspects of public budget in Saudi Arabia is supported by the research. Saudi Arabia should focus more on petroleum and oil aspects with effective production as the oil is the main resource of revenues. It should use surpluses prudentially on enhancing the private sector.

Keywords: ***Government Budget, oil prices, revenues, deficit.***

1. INTRODUCTION

Global oil prices have fallen sharply over the past several months, leading to significant revenue shortfalls in many energy exporting nations, while consumers in many importing countries are likely to have to pay less to heat their homes or drive their cars. From 2010 until mid-2014, world oil prices had been fairly stable, at around $110 a barrel. But since June prices have more than halved. Brent crude oil has now dipped below $50 a barrel for the first time since May 2009 and US crude is down to below $48 a barrel. Saudi Arabia, the world's largest oil exporter and Opec's most influential member, could support global oil prices by cutting back its own production, but there is little sign it wants to do this. There could be two reasons - to try to instill some discipline among fellow OPEC oil producers, and perhaps to put the US's burgeoning shale oil and gas industry under pressure. Although Saudi Arabia needs oil prices to be around $85 in the longer term, it has deep pockets with a reserve fund of some $700bn - so can withstand lower prices for some time. In terms of production and pricing of oil by Middle East producers, they are beginning to recognise the challenge of US production," says Robin Mills,

Manaar Energy's head of consulting. If a period of lower prices were to force some higher cost producers to shut down, then Riyadh might hope to pick up market share in the longer run.However, there is also recent history behind Riyadh's unwillingness to cut production. In the 1980s the country did cut production significantly in a bid to boost prices, but it had little effect and it also badly affected the Saudi economy .Saudi Arabia has traditionally been regarded as the world's most important swing producer of oil. When acting as such, the Saudi government would increase or decrease oil production to maintain a more stable price. The paper explores the asymmetric effect of oil price on Government Budget (Government expenditure, Government revenues, and public deficit) for Saudi Arabia. The paper will use the nonlinear ARDL model (NARDL). NARDL allows for exploring the asymmetric effect (Does positive changes and negative changes has a different effect on each of expenditure, revenues, and deficit) over the short run and the long run.

2. LITERATURE REVIEW

The price of oil plays a strategic role in the global economy. Many studies have highlighted its different impacts on macroeconomic variables such as government budget, GDP growth, unemployment rates, inflation, the stock market etc. In the literature (Akanbi and Sbia 2017; Chen and Chen 2007; Coudert, Mignon, and Penot 2008 etc), we come across a good number of papers related to our topic understudy and few important ones we report in this paper. Rubina Vohra (2017), pointed out Bahrain, Kuwait, Oman, Saudi Arabia, Qatar and the United Arab Emirates comprise the Gulf Cooperation Council (GCC), the GCC nations benefitted financially from rising oil price from 2000-2007. Since 2008 they are also impacted by the sinking oil prices which have varying effects on their budget and economic growth. Hany Abdel-Latif et al (2017), research paper keenly investigates the effect of oil by allowing for the theoretical plausibility of price shocks on government expenditures asymmetric effects of oil price shocks on fiscal policy. The research suggests that nothing can guarantee linearity of the impacts of oil prices positive and negative shocks to government expenditures. The key findings show evidence of a non-linear relationship between oil prices and government expenditures in Saudi Arabia, where a negative oil price shock would have a statistically significant different impact in the long run compared to a positive shock. Abdulaziz Hamad Algaeed (2017), this paper pointed out analyze theoretically and empirically the effects of a non-linear oil price shocks (OIL shock) on Saudi investment-saving behavior for the period 1985-2015, using structural vector autoregressive approach. The sign is as expected and significant. Moreover, capital investment takes time to absorb the shock. Kamel Si Mohammed et al (2016), the study is to investigate the impact of oil prices on macroeconomics fundamentals as well as monetary policy and stock market for eight oil-exporting and non-oil exports countries in the Middle East and North African region, namely Algeria, Egypt, Iran, Kuwait, Morocco, Saudi Arabia, Tunisia and Turkey. Goblan J Algahtani (2016), the study pointed out investigate the effect of oil

price shocks on the Saudi's economic activity using annual data (1970-2015) to cover all of oil price shocks; particularly the recent decline in oil prices amid 2014. The vector autoregressive (VAR) and vector error correction model (VECM) were utilized to investigate the long-run and the short-run relationship between variables. The results indicated a positive and significant relationship between oil prices and the Saudi's GDP in the long run. El Anshasy and Bradley (2012), they employ a GMM estimation in a panel of 16 oil exporting countries over the period of 1957-2008 conclude that higher oil prices induce a larger government size in the long run. However, their results show that, in the short run, government expenditures rise relatively less proportionately to the oil revenue increase.

3. MODEL AND METHODOLOGY

The aim of this paper is to explore the short-run and long-run asymmetric effect of oil price changes on the aspects of the government budget in Saudi Arabia. We utilize the nonlinear ARDL approach. The traditional ARDL model initially innovated by Pesaran and Shin (1998). The main power for the ARDL model it is appropriate for estimating different series with different degrees of integrations. Shin et al. (2014) introduced the nonlinear form of ARDL model where the positive and negative developments have dissimilar impacts on the dependent variable. NARDL model has an advantage it allows for augmenting the asymmetric effect over the short run and the long run inside the estimation process. The asymmetric integration interrelationship can be written in the following form:

$$y_t = \gamma^+ z_t^+ + \gamma^- z_t^- + \varepsilon_t \qquad (1)$$

Where y_t is the dependent series, z_t^+ and z_t^- are the partial summation of negative and positive developments in z_t, and ε_t is the error component. In addition, γ^+ and γ^- measure the long run asymmetric impact for positive and negative changes respectively.

$$z_t^- = \sum_{i=1}^{t} \Delta z_i^- = \sum_{i=1}^{t} \max(\Delta z_i, 0) \qquad (2)$$

$$z_t^+ = \sum_{i=1}^{t} \Delta z_i^+ = \sum_{i=1}^{t} \max(\Delta z_i, 0) \qquad (3)$$

Therefore, The asymmetric effect of oil price changes on the different aspects of government budget can be expressed as follows:

$$y_t = \rho\, y_{t-1} + \sum_{k=0}^{p-1} \vartheta_k^{+} OP_t^{+} + \sum_{k=0}^{p-1} \vartheta_k^{-} OP_t^{-} + \sum_{k=1}^{p-1} \varphi_{yk} \Delta y_{t-k} + \sum_{k=1}^{q} \varphi_k^{+} \Delta OP_t^{+} + \sum_{k=1}^{q} \varphi_k^{-} \Delta OP_t^{-} + \varepsilon_t \qquad (4)$$

Where, `$y_t$represents the different aspects of public budget, ε_t reflects the error component, $\gamma^{+} = -\vartheta^{+}/\rho$ and $\gamma^{+} = -\vartheta^{+}/\rho$ reflect the asymmetric long run coefficients.

In order to check for the existence of the cointegration relation in (4), we will follow Shin et al. (2014) by utilizing the Pesaran (2001)'s cointegration bound (F_{pss}) test. Which depends on F test. F_{pss} based on the null hypothesis that there is no cointegration in the underlying relationship; it means the joint summation for the long run coefficients are equal to zero or $\rho = \vartheta^{+} = \vartheta^{-} = 0$. Therefore, refusing the null hypothesis means that the existence of the long run cointegration in the underlying relationship. Moreover, usual Wald test can by utilized to test for the asymmetry in short and long run relationship.

`

4. DEVELOPMENT OF OIL PRICE AND GOVERNMENT EXPENDITURES IN SAUDI ARABIA

4.1. Data

The paper explores the hypothesis that changes in the crude oil price would have a considerable impact on government budget; total government expenditure, current government expenditure, capital government expenditure, total government revenue, and the ratio of surplus or deficit to the GDP in Saudi Arabia. The utilized data covers annual data for the years 1970 to 2016 for West Texas Intermediate crude oil price, total government expenditure, current government expenditure, capital government expenditure, total government revenue, and the ratio of surplus or deficit to the GDP. The dataset is captured from IFS and the General Authority for Statistics in Saudi Arabia. All data are figured in figure (1), Figure (2) and Figure (3).

As mentioned in the introduction, World oil prices depend on global economic and geopolitical factors. Where the demand for oil is mainly derived from the global economic conditions, the supply of oil is mainly determined by the global geopolitics conditions. Figure (1) which depicts the development of global oil price during the period 1970 to 2016 shows that oil price during the period of study suffered from high volatility. The oil prices started increasing during the1970s but after that, it dropped again during the 1980s until it has moved up the beginning of this century before the huge drop during the financial global crisis. Since 2009 and with the recovery of the global crisis oil prices increased but from 2014 and with the drop in the global demand another slowdown in the oil prices happened.

Figure1. Oil price 1970-2016

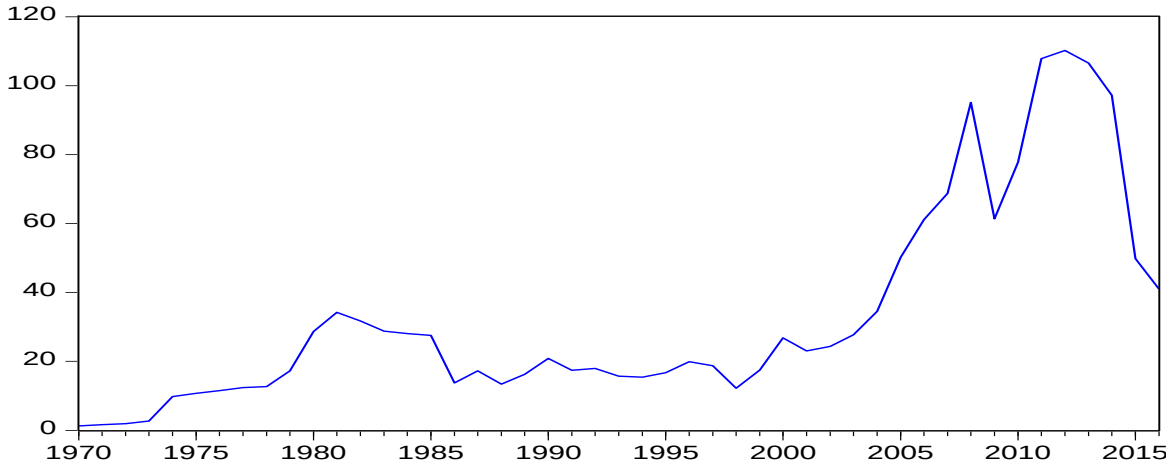

Figure (2) depicts the development of total revenue and total expenditure during the period of the study. Figure (2) shows that total expenditure and total revenue have characterized by high fluctuation during the period of study. We can observe that the total revenue for Saudi Arabia was more than the total expenditure for the most of the years. However, for some years and in particular that happened during dropping in oil price, the total expenditure was higher than the total revenue and that produces a deficit in the budget in these years.

Figure (2). Development of total revenue and total expenditure

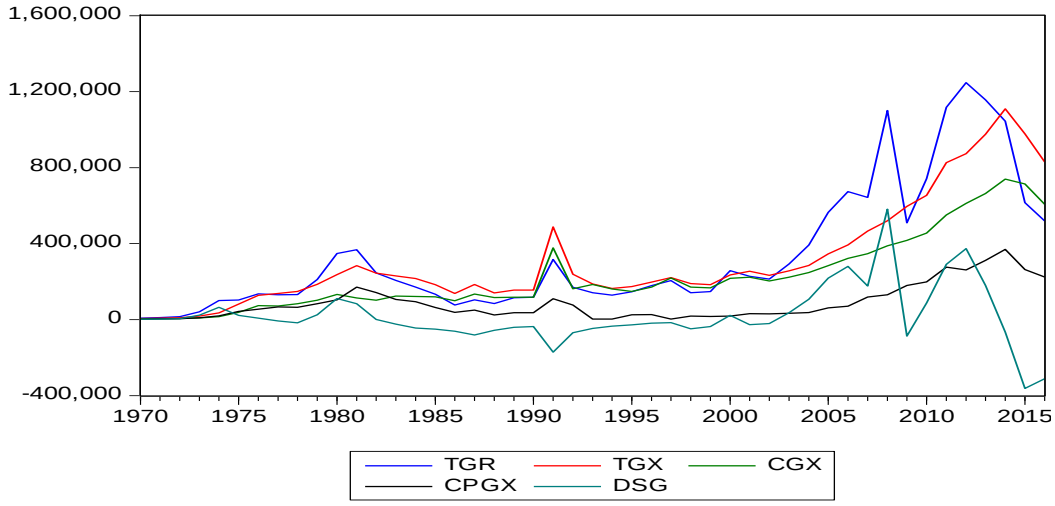

Figure (3) shows the values of surplus or deficit in government budget as a percentage of GDP during the period of study. We can notice that this percentage was high and positive during the first half of the 1970s decade and during the years that preceded the global financial crisis in 2007. However, some periods such as the 1980s, 1990s and from 2014 (the last drop in oil prices) to the end of the study period, the percentage was negative but with low values.

Figure (3). Surplus or deficit as a percentage of GDP

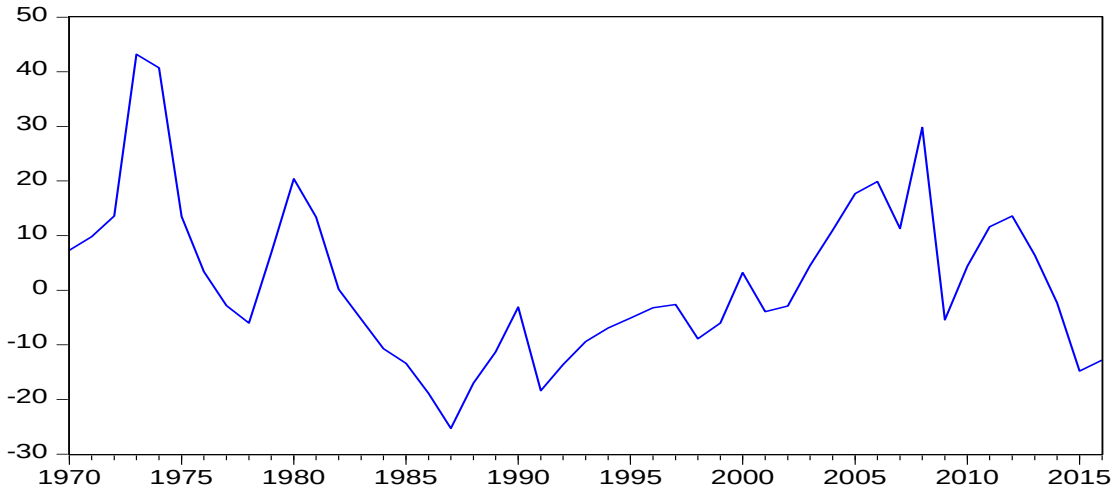

Table (1) shows the descriptive statistics for the raw data of the utilized variables where Table (2) depicts unit root tests for the variables. The ARDL model has one condition is that employed series are integrated of order I(0) or I(1) and it is not allowed to be integrated of order I(2). We depend on Augmented Dickey Fuller test to check for the unit root. As it is shown in Table (2), all variables are stationary in the level of the first difference and there is no any series is stationary in the second difference; which means it is appropriate to apply ARDL model.

Table1. Descriptive statistics for variables

	OP	TGR	TGX	CGX	CPGX	DCGDP
Mean	33.13043	335243.2	315143.7	227375.8	87767.87	1.610638
Median	20.82000	205500.0	221272.0	162350.0	54652.00	-2.600000
Maximum	110.2200	1247398.	1109903.	739658.0	370245.0	43.20000
Minimum	1.300000	7940.000	6293.000	3989.000	2304.000	-25.30000
Std. Dev.	29.88969	332748.2	278764.6	196192.7	91699.93	14.65213
Skewness	1.410193	1.470927	1.416078	1.217659	1.404911	0.802962
Kurtosis	3.904577	4.091775	4.026157	3.551291	4.148236	3.699688
Jarque-Bera	17.18013	19.28269	17.77012	12.20960	18.04320	6.009254
Probability	0.000186	0.000065	0.000138	0.002232	0.000121	0.049557
Observations	47	47	47	47	47	47

Table2. Unit root results

	I(0)		I(1)	
	Z(t)	P-value	Z(t)	P-value
OP	-1.566	0.4913	-5.936	0.000
TGR	-1.758	0.3957	-7.576	0.000
CEXP	-0.431857	0.8948	-8.698	0.000
CPEXP	-1.019	0.7387	-5.972	0.000
CDGDP	-2.564	0.107	-6.897	0.000

Table (3) depicts the results of the linear ARDL for the effect of oil price changes on a public budget. The first and the second column show that over the long run changes in total government revenue is significantly affected by its first lag, the level and the lag of oil price. Over the short run, a change in total government revenue is significantly affected by changes in its lag and changes in the level oil price changes. In addition, the co-integration term is negative and significant which means the relationship is stable.

Table (3) shows estimates for current government expenditure, capital government expenditure, and total government expenditure. Over the long run, current government expenditure is considerably affected by its lag and the level of oil price where over the long run it is significantly determined by changes in its lag and changes in oil price. Further, table (3) shows that capital government expenditure is significantly affected by its lag and the leg of oil price over the long run. However, over the short run, capital government expenditure is significantly determined by changes in its lag and changes in the level of oil price. Furthermore, table (3) reveals that total government expenditure is significantly affected by its lag, level of oil price and the first lag of oil price. On another hand, over the short run, total government expenditure is significantly affected by changes in its lag and changes in the level of oil price.

Table (3) presents the results for the deficit or the surplus of government budget as a ratio of GDP. It can be observed that over the long run RGDP is significantly determined by its lag, the level of oil price and the lag of oil price. However, over the short run, RGDP is significantly determined by changes in oil price.

Table (3): Results of the Linear ARDL of Oil Price on the Public Budget

Total Government Revenue D(TGR)		Current Government Expenditure (CGE_t)		Capital Government Expenditure (PGE_t)		Total Government Expenditure TGE		The ratio of surplus or deficit to GDP (RGDP)	
C	4.521 (0.001)***	C	2.658 (0.000)***	C	7.879 (0.000)***	C	4.8718 (0.006)***	C	-1.783 (0.717)
TGR_{t-1}	0.5076 (0.001)***	CGE_{t-1}	0.7086 (0.000)***	PGE_{t-1}	0.489 (0.028)**	TGE_{t-1}	0.525 (0.000)	$RGDP_{t-1}$	0.511 (0.000)***
OP_t	0.995967 (0.000)***	OP_t	0.971(0.000)***	OP_t	0.995 (0.013)**	OP_t	0.290 (0.0251)	OP_t	23.14 (0.000)***
OP_{t-1}	0.5059 (0.002)***	OP_{t-1}	0.104 (0.484)	OP_{t-1}	0.09 (0.877)	OP_{t-1}	0.316 (0.008)***	OP_{t-1}	-19.88 (0.000)***
D(TGR_{t-1})	-0.232 (0.2984)	D(CGE_{t-1})	-0.1772 (0.541)	$D(PGE_{t-1})$	0.0183 (0.034)**	$D(TGE_{t-1})$	0.484 (0.009)	$D(RGDP_{t-1})$	-0.0111 (0.9513)
D(OP_t)	1.021 (0.000)***	D(OP_t)	0.283 (0.000)***	D(OP_t)	0.378 (0.07)*	D(OP_t)	0.290 (0.025)**	D(OP_t)	23.14 (0.000)***
D(OP_{t-1})	0.1692 (0.4662)	D(OP_{t-1})	0.181 (0.227)	D(OP_{t-1})	0.163 (0.675)	D(OP_{t-1})	-0.04 (0.81)	D(OP_{t-1})	3.173 (0.55)
ECT_{t-1}	-0.492 (0.001)	ECT_{t-1}	-0.291 (0.000)***	ECT_{t-1}	-0.38 (0.010)**	ECT_{t-1}	-0.504 (0.000)***	ECT_{t-1}	-0.488 (0.000)***
Adjusted R^2	0.945	Adjusted R^2	0.954	Adjusted R^2	0.628	Adjusted R^2	0.956	Adjusted R^2	0.709
F-statistic	260.08 (0.000)***	F-statistic	472.25 (0.000)***	F-statistic	19.17 (0.000)	F-statistic	328.1 (0.00)	F-statistic	27.90 (0.000)***
D.W	2.19	D.W	2.181	D.W	1.855	D.W	1.98	D.W	2.06
Q-statistic	0.5750 (0.448)	Q-statistic	0.1563 (0.693)	Q-statistic	0.0270 (0.987)	Q-statistic	0.012 (0.913)	Q-statistic	0.057 (0.810)
Heterosced asticity	1.612441 (0.2008)	Heterosce dasticity	1.789 (0.150)	Heterosced asticity	1.143 (0.374)	Heterosce dasticity	0.775 (0.514)	Heteroscedast icity	0.775 (0.514)
Serial correlation	0.986 (0.3817)	Serial correlatio n	1.595 (0.216)	Serial correlation	0.2844 (0.755)	Serial correlatio n	0.32 (0.72)	Serial correlation	0.320 (0.72)
Ramsey reset	1.309 (0.2591)	Ramsey reset	2.273 (0.1398)	Ramsey reset	0.397 (0.695)	Ramsey reset	1.15 (0.28)	Ramsey reset	1.154 (0.2889)

******* reflects the coefficient is significant with probabilities 1%,5%, 10%; ** the coefficient is significant with probabilities 5%, 10%; * the coefficient is significant with probability 10%.

Table (4) depicts the estimates for the asymmetric effect of oil price changes on the government budget. The first two columns show factors that effect on total government revenues, we can observe that over the long run total revenues is significantly affected by its lag, positive and also negative shocks of oil price. However, the effect of positive socks is stronger than negative shocks. Over the short run, the total revenue is considerably only affected by changes in negative oil price shocks. Moreover, the co-integration term is negative and significant which reflects the stability of cointegration relationship.

Table (4) shows the current government expenditure is significantly affected by its lag and the negative oil price shocks. Further, current government expenditure is significantly affected by positive and negative oil price shocks. However, the effect of positive shocks is more obvious than negative shocks. On the other hand, capital government expenditure is significantly affected by its lag and positive oil price shocks over the long run. In addition, capital government expenditure is mainly determined by changes in its lag, changes in the level of positive oil price shocks and the changes in negative oil price shocks. Furthermore, the total government expenditure is mainly determined by its lag, the level of positive oil price shocks and the lag of positive oil price shocks. Contrary, the total government expenditure is significantly affected by changes in its lag, changes in the level and in the lag of positive oil price shocks.

Table (4) presents the results of the asymmetric effect of oil price changes on the ratio of surplus or deficit in the public budget to the GDP. It can be observed that this ratio is considerably affected by its lag, the level of negative and positive shocks of oil price and the lag of positive shocks. However, the ratio of the surplus or deficit to GDP is significantly affected by changes in positive shocks and changes in the lag of changes in negative shocks.

In sum, our results support the asymmetric effect of oil price shocks on different aspects of public budget in Saudi Arabia. This is confirmed by the results of Wald test which refer to rejecting the null hypothesis over the short run and long run for the majority of the underlying models.

Table (4): Results of the Non-Linear ARDL of Oil Priceonthe Public Budget

Total Government Revenue D(TGR)		Current Government Expenditure (CGE_t)		Capital Government Expenditure (PGE_t)		Total Government Expenditure TGE		The ratio of surplus or deficit to GDP (RGDP)	
C	2.758 (0.25)	C	3.805 (0.000)***	C	1.27 (0.52)	C	6.06 (0.00)***	C	2.46 (0.58)
ρ	0.559 (0.00)***	ρ	0.597 (0.000)***	ρ	0.623 (0.000)***	ρ	0.704 (0.00)***	ρ	0.337 (0.016)**
ϑ_0^+	1.50 (0.00)**	ϑ^+	0.156 (0.39)	ϑ^+	1.148 (0.039)**	ϑ^+	0.821 (0.00)***	ϑ^+	35.82 (0.00)***
ϑ_0^-	0.67 (0.00)**	ϑ^-	0.228 (0.02)**	ϑ^-	0.131 (0.719)	ϑ^-	-0.148 (0.484)	ϑ^-	19.198 (0.00)***
ϑ_1^+	-0.875 (0.11)	ϑ_1^+	0.171 (0.41)	ϑ_1^+	0.081 (0.91)	ϑ_1^+	-0.474 (0.04)**	ϑ_1^+	-41.96 (0.00)***
ϑ_1^-	-0.262 (0.41)	ϑ_1^-	-0.004 (0.988)	ϑ_1^-	0.774 (0.422)	ϑ_1^-	-0.082 (0.76)	ϑ_1^-	7.25 (0.34)
$\varphi_{y1})$	-0.206 (0.35)	$\varphi_{y1})$	-0.092 (0.60)	$\varphi_{y1})$	-0.298 (0.03)**	$\varphi_{y1})$	-0.25 (0.074)*	$\varphi_{y1})$	-0.08 (0.58)
φ_0^+	1.503 (0.00)	φ_0^+	2.658 (0.000)***	φ_0^+	1.148 (0.039)**	φ_0^+	0.821 (0.00)***	φ_0^+	35.8 (0.00)***
φ_0^-	0.673 (0.00)***	φ_0^-	0.283 (0.00)***	φ_0^-	0.131 (0.719)	φ_0^-	-0.148 (0.48)	φ_0^-	-1.78 (0.75)
φ_1^+	-0.021 (0.95)	φ_1^+	-0.065 (0.81)	φ_1^+	1.195 (0.024)**	φ_1^+	0.474 (0.0441)**	φ_1^+	-2.2 (0.74)
φ_1^-	-0.045	φ_1^-	0.069	φ_1^-	-1.15	φ_1^-	-0.482	φ_1^-	30.40

	(0.89)		(0.83)		(0.29)		(0.109)		(0.00)***
$\vartheta_k^+ = \vartheta_k^-$	6.49 (0.015)**	$\vartheta_k^+ = \vartheta_k^-$	8.46 (0.006)***	$\vartheta_k^+ = \vartheta_k^-$	4.865 (0.03)**	$\vartheta_k^+ = \vartheta_k^-$	4.689 (0.0401)**	$\vartheta_k^+ = \vartheta_k^-$	7.90 (0.008)***
$\varphi_k^+ = \varphi_k^-$	15.13 (0.00)***	$\varphi_k^+ = \varphi_k^-$	4.29 (0.045)	$\varphi_k^+ = \varphi_k^-$	4.97 (0.036)**	$\varphi_k^+ = \varphi_k^-$	17.41 (0.00)***	$\varphi_k^+ = \varphi_k^-$	3.27 (0.051)*
ECT_{t-1}	-0.306 (0.022)**	ECT_{t-1}	-0.29 (0.002)***	ECT_{t-1}	-0.078 (0.071)*	ECT_{t-1}	-0.043 (0.021)**	ECT_{t-1}	-0.407 (0.00)***
Adjusted R^2	0.945	Adjusted R^2	0.955	Adjusted R^2	0.671	Adjusted R^2	0.92	Adjusted R^2	0.84
F-statistic	41.73 (0.00)***	F-statistic	241.19 (0.000)***	F-statistic	6.71 (0.000)***	F-statistic	31.47 (0.00)***	F-statistic	21.2 (0.00)***
D.W	2.01	D.W	2.02	D.W	2.02	D.W	1.86	D.W	2.1
Q-statistic	6.471 (0.89)	Q-statistic	6.75 (0.87)	Q-statistic	10.329 (0.568)	Q-statistic	11.14 (0.431)	Q-statistic	16.147 (0.185)
Heterosced asticity	0.596 (0.856)	Heterosce dasticity	0.525 (0.71)	Heterosced asticity	1.73 (0.12)	Heterosce dasticity	1.243 (0.305)	Heterosceda sticity	0.505 (0.92)
Serial correlation	0.34 (0.715)	Serial correlatio n	0.51 (0.60)	Serial correlation	1.60 (0.216)	Serial correlatio n	0.655 (0.528)	Serial correlation	0.622 (0.544)
Ramsey reset	0.520 (0.478)	Ramsey reset	0.420 (0.52)	Ramsey reset	0.647 (0.426)	Ramsey reset	2.30 (0.142)	Ramsey reset	2.19 (0.3)

******* reflects the coefficient is significant with probabilities 1%,5%, 10%; ** the coefficient is significant with probabilities 5%, 10%; * the coefficient is significant with probability 10%.

5. CONCLUSION

In this paper, we explore the short-run and long-run asymmetric effect of oil price changes on the aspects of the government budget in Saudi Arabia. We utilize the nonlinear ARDL approach. We find that the total expenditure and total revenue in Kingdom of Saudi Arabia suffered considerable fluctuations during the concerned period and for most of the years the total revenue was more than the total expenditure. Also, the values of surplus or deficit in government budget as a percentage of GDP remained low and negative for a comparatively greater part of the period covered by the study. The capital government expenditure is significantly affected by its lag and the lag of oil price over the long run while over the short run, capital government expenditure is significantly regulated by changes in its lag and changes in the level of oil price. Additionally, the ratio of surplus or deficit in the public budget to the GDP is considerably affected by its lag, the level of negative and positive shocks of oil price and the lag of positive shocks.

REFERENCES

1. Abdulaziz Hamad Algaeed, " The Impacts of Non-linear Oil Price Shocks on Saudi Saving-investment Behavior: An Empirical Investigation ", International Journal of Economics and Financial Issues, ISSN: 2146-4138, 2017, 7(2), 155-165.
   Available at http: www.econjournals.com

2. Akanbi, O. A. and Sbia, R. (2017). 'Investigating the twin-deficit phenomenon among oil-exporting countries: Does oil really matter?', Empirical Economics pp. 1–20.
3. Chen, S.S., Chen, H.C., 2007. Oil price and real exchange rates. Energy Economics 29, 390–404.
4. Coudert, V., Mignon, V., Penot, A., (2008). Oil price and the dollar. Energy Studies Review 18 (Article 3).
5. El Anshasy, A. A. and Bradley, M. D. (2012). 'Oil prices and the fiscal policy response in oil-exporting countries', Journal of Policy Modeling 34(5), 605–620.
6. Goblan J Algahtani1, " The Effect of Oil Price Shocks on Economic Activity in Saudi Arabia:Econometric Approach", International Journal of Business and Management; Vol. 11, No. 8; 2016, ISSN 1833-3850 E-ISSN 1833-8119, Published by Canadian Center of Science and Education.
7. Hany Abdel-Latif et al, " Asymmetric impacts of oil price shocks on government expenditures: Evidence from Saudi Arabia ",https://ssrn.com/abstract=3093721. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3093721
8. Kamel Si Mohammed et al, " The impact of oil prices on macroeconomic fundamentals, monetary policy and stock market for eight Middle East and North African countries", Topics in Middle Eastern and African Economies Vol. 18, Issue No. 2, September 2016.
9. Mckinnon, R. (1973), Money and Capital in Economic Development. Washington, DC: Brookings Institution.
10. Pesaran, M. H., and Y. Shin (1998). An autoregressive distributed-lag modelling approach to cointegration analysis. In Econometrics and Economic Theory in the 20th Century. The Ragnar Frisch Centennial Symposium, ed. S. Strøm, chap. 11, 371–413. Cambridge: Cambridge University Press.
11. Pesaran, M. H., Y. Shin, and R. Smith (2001). Bounds testing approaches to the analysis of level relationships. Journal of Applied Econometrics 16(3): 289–326.
12. Rubina Vohra, " The impact of oil prices on GCC Economies", International Journal of Business and social science, Vol. 8, No. 2; February 2017.
13. Shaw, E. (1973), Financial Deepening in Economic Development. New York: Oxford University Press. Tobin, J. (1969), A general equilibrium approach to monetary theory. Journal of Money, Credit and Banking, 1(1), 15-29.
14. Shin, Y., B. C. Yu, and M. Greenwood-Nimmo (2014), "Modelling Asymmetric Cointegration and Dynamic Multipliers in a Nonlinear ARDL Framework", Festschrift in Honor of Peter Schmidt: Econometric Methods and Applications, eds. By R. Sickels and W. Horrace: Springer, pp. 281-314.