

The impact of oil prices shocks on the exchange rate changes in Algeria Econometric study during the period 1986 – 2019

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Abstract:

This study aims to highlight the relationship between the changes in oil prices and the changes in the exchange rates of the Algerian dinar, considering that the Algerian economy faces the problems arising from the difference between currencies, where Algeria lives under the pressure of exchange rate instability resulting from the decline in the value of the dinar against the dollar in the face of volatility Oil prices, which have an impact on the oil sector's exports, and have an impact on exchange rate changes, based on the standard method by using the vector autoregressive model, to verify the impact of the independent variable represented by oil prices on the dependent variable of change of the exchange rates in Algeria between (1986 and 2019), and we used the impulse response functions to test the impact of oil price shocks on exchange changes in Algeria.

Keywords: Oil Prices, Exchange Rate, Algeria, Impulse Response Functions.

1. INTRODUCTION:

The oil market is considered an unstable market due to the sharp volatility in prices during relatively close periods, reflecting the degree to which it relates to a range of economic and geopolitical conditions that influence the expectations of demand and supply, which affects the economies of countries, especially the countries which are regarded petroleum exporters. Price volatility in international markets affects negatively the revenues from this sector, which affects the financial capacity of those countries, including Algeria.

The oil market has experienced several crises related to oil prices in the past years, some are negative and some are positive, starting with the first

energy crisis in 1973, which was in favor of the producing countries and then the reverse shock of 1986, which negatively affected the producing countries, followed by negative needs such as the price crisis in 1991 and the crisis of 1998. Later on, prices rebounded and the international market experienced a second positive crisis in 2004 that did not last long and overcome the crisis of 2008, then prices rebounded until 2014 and remained as that case until 2019, where the oil market has experienced a crisis of collapse in oil prices, the crises of oil prices are due to structural changes that the oil industry is going through during certain periods, and has a negative impact according to the crisis on the oil countries negatively.

The change in oil prices has a major impact on the revenues of the Algerian state and therefore has an impact on the development plans because most of the project resources are from oil revenues the latter of which experienced major vibrated changes in the 1980s, which resulted in crises that affected the fundamental variables of the economy, including exchange rate change.

Based on the above, we have considered the following problem:

How does the impact of oil price shocks affect the exchange rate changes in Algeria during the period (1986-2019)?

To answer this question, we used the descriptive and analytical approach in the theoretical aspect where the study highlighted the theoretical concepts of exchange rate and oil prices and the experimental approach based on the model of autoregressif vectors to show the relationship between the independent variable which is the oil Price, the dependent variable of exchange rate changes, which is an indicator of the measurement of the chain represented by the dollar exchange rate for the Algerian dinar, based on the payment response functions to highlight the impact of oil price shocks on exchange rate changes in Algeria, for the period from (1986) to (2019). We used annual data, where data on the variables associated with the study were collected and processed statistically to reach the answer to the problem based on the program (eviews11).

The hypotheses of the Study:

To answer the problem of the study, the following hypotheses were formulated:

- There is a relationship between the real exchange rate of the Algerian dinar and the long-term oil prices ;
- Oil prices are the first source of fluctuations in the exchange rate of Algerian dinars;

The objectives of the Study: This study will be aimed:

- Learn the determinants of oil prices;
- To study the effect of oil price changes on the real exchange rate of dinars Algeria is a standard study for the period between 1986- 2019;
- Trying to explain the relationship between oil prices and the real exchange rate of the Algerian dinar, according to the fluctuations in both variables, using the analytical tools Eviews7.

II. The theoretical framework of the exchange rate

1. Exchange Rate Concept:

1.1. Exchange rates are quoted as foreign currency per unit of domestic currency or domestic currency per unit of foreign currency: (Paul R Krugman, 2006, p. 13)

- How much can be exchanged for one dollar? ¥102/\$1;
- How much can be exchanged for one yen? \$0.0098/¥1.

1.2. Exchange rate allows us to express the cost or price of a good or service in a common currency:

- How much does a Honda cost? ¥3,000,000;
- Or, $¥3,000,000 \times \$0.0098/¥1 = \$29,40$.

For example, in one-country, open-economy macroeconomic models real Exchange rate is usually defined as the relative price of tradable goods to non-tradable.

We show that under our definition the real currency Exchange rate is a power function of the relative price of tradable goods to non tradable goods; in particular, the former equals to the latter when the home goods are All non-tradable. Another implication of our medium-of-exchange based RER is that the real currency exchange rate is more relevant to exchange and hence the trade balances than the conventional treatment. (Bill Z, 2014, p. 47)

OR: An exchange rate is the value of one nation's **currency** versus the currency of another nation or economic zone. For example, how many U.S. dollars does it take to buy one **euro**? As of February 23, 2019, the exchange rate is 1.13, meaning it takes \$1.13 to buy €1.

2. Foreign Exchange Rate Determination:

The foreign exchange rate is the price of a foreign currency. As any other price, it is determined by the interaction of demand and supply for the foreign currency (FX). The Supply of FX is derived from the demand for our goods and services (exports), and our financial assets (capital inflows) by foreign countries. These foreign receipt transactions are affected by similar economic variables in other countries (foreign interest rates, foreign inflation, foreign income, foreign money supply, etc.) (Seyura, 2013, pp. 3 -4)

FX is demanded to buy foreign goods and services (imports), and to buy foreign financial assets (capital outflows):

- The quantities of FX demanded will change in inverse relationship with its price (the FX rate as UAH/US\$), *ceteris paribus*;
- But for FX rate prediction, it is more important to understand the changes in FX demand that will occur when the entire FX demand curve moves or shift, right or left, as a result of changes in variables that affect imports of goods and services, and capital outflows;
- These variables include price levels (inflation), levels of interest rates, income levels expectations (forward rates), or tastes;
- These variables, in turn, are affected by the demand and supply for money and other economic variables.

3. Types of Exchange Rates: There are several types of exchange rate as described in:

Table (01): «Types of Exchange Rates»

Types of Exchange Rates	
Fixed Rate	It is "pegged" or linked to unther currency or asset (of then gold) to derive its value.
Flexible Rate	This system is one whereby the rate of a currency is determined by the market forces of demand and supply.
Forwrd Rate	It stipulates the purchase or sale of a foreign currency at a predetermined rate at some date in the future.

Spot Rate	They represent the day –to –day exchange rate and vary by a few, basis points every.
Dual Rate	Separately by two values – one rates applicable for the foreign transactions &another for the domestic transactions.

Source: (types of Exchange Rates /Fixed, 2018).

4. Factors that Affect Exchange Rates in the Long Run: It is specified as follows: (S & Mishkin, 2007, p. 6)

- Barriers;
- Relative price levels;
- Trade Preferences for domestic versus foreign goods;
- Productivity.

III. Oil price shocks on exchange changes in Algeria

1. The evolution of oil prices in Algeria:

The economy of today versus the Eighties While the Algerian economy has unquestionably been hard hit by the steep decline in hydrocarbon revenues, the inevitable comparison between the economic situation in the Eighties and today may not hold up. This section will outline the economic problems facing Algeria, and then detail the economic and political factors that should mitigate the need for the deep stabilization measures that contributed to unrest following the oil price crash three decades ago.

2. Exchange rate changes in Algeria:

The stages of the Algerian dinar exchange rate changes are as follows:

- The Algerian central bank was used the dinar in the first time on 1 April 1964, replacing the Franc. It was pegged to the franc between 1964 and 1973 (long equal in value);
- From January 21, 1974 to October 1, 1994, the exchange rate of the dinar was determined on the basis of a fixed relationship with a basket of currencies, adjusted from time to time. On October 1, 1994, the Bank of Algeria introduced a managed float for the dinar through daily fixing sessions that included six commercial banks. This system has been replaced by an interbank foreign exchange market as of January 2, 1996; (consulation, Fund, International Monetary, 2014, p. 3)

- As far as the Algerian exchange rate is concerned, the central bank adopted, since 1996, a managed floating exchange rate after a long experience with beg regime to a basket of currencies. That was built upon a strong concentration of the US dollar that played an important role due to its 98% in hydrocarbon export receipts. During the 1990s the US Dollar increased to nine Algerian Dinar in 1990 from 35 in 1994 and 47 dollar again the Dinar year a later. In addition, the nominal exchange rate index was characterized by increasing in levels to 2 and 8 percent for nominal and real exchange rate respectively during 1997-1999 ; (Simohammed & Larbaoui, 2015, p. 6)
- Between January 2003 and January 2009, the Algerian exchange rate has varied continuously; from January 2003 to September 2008, the U.S dollar depreciated monthly against the Algerian Dinar by about 19%, followed by a depreciation of 6% during the financial crisis;
- On November 5, 2014, the average of the buying and selling rates for the U.S. dollar was US\$ 1 = DZD 84.02, equivalent to SDR 1 = DZD 123.47. No margin limits are imposed on the buying and selling exchange rates in the interbank foreign exchange market, except for a margin of DA 0.015 between the buying and selling rates of the Bank of Algeria for the dinar against the U.S. (consulation, international monetary Fund, 2014, p. 3);
- January 2015, the Algerian dinar decreased against the U.S. dollar on 71.3 to 107.35.U S dollar;

On May 5, 2018, the average of the buying and selling rates for the U.S. dollar was US\$ 1 = DZD 115.33, equivalent to SDR 1 = DZD 165.09. No margin limits are imposed on the buying and selling exchange rates in the interbank foreign exchange market, except for a margin of DA 0.015 between the buying and selling rates of the Bank of Algeria for the dinar against the U.S. dollar. (consulation, International Monetary Fund , 2018, p. 3).

Table (02):" the dinar exchange rate evolution between 2001- February 2021"

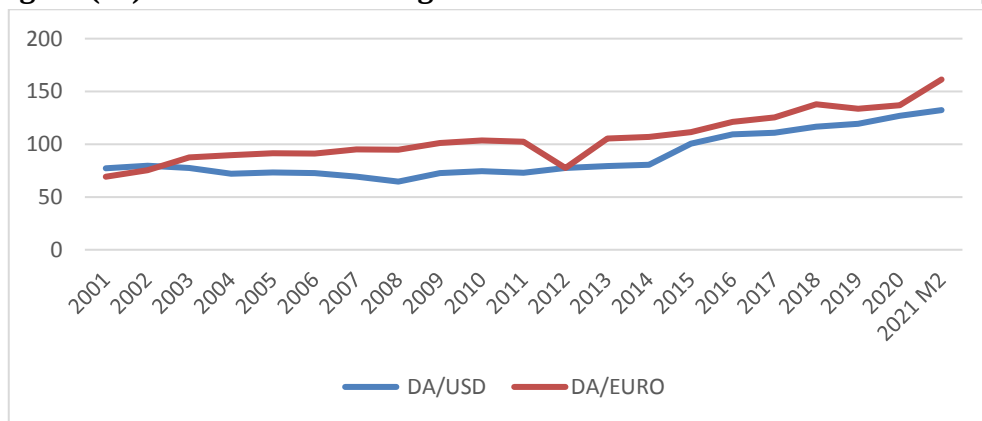
Years	DA/USD	DA/EURO
2001	77.2647	69.2002
2002	79.6850	75.3573
2003	77.3683	87.4644

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2004	72.0653	89.6225
2005	73.3669	91.3211
2006	72.6459	91.2447
2007	69.3644	95.0012
2008	64.5810	94.8548
2009	72.6467	101.2953
2010	74.3199	103.4953
2011	72.8537	102.2154
2012	77.5519	77.5519
2013	79.3809	105.4374
2014	80.56	106.91
2015	100.46	111.44
2016	109.47	121.18
2017	110.96	125.32
2018	116.62	137.69
2019	119.36	133.71
2020	127.02	137.00
2021 M2	132..30	161.31

Source :. (Algeria, Annual report of the Algerian Bank , 2021)

Figure (01): «The dinar exchange rate evolution Between 2001 - February 2021"»



Source: (Algeria, Annual report of the Algerian Bank , 2021)

Through a table and figure can be seen The Algerian Dinar average annual rate vs the US\$ had a depreciation of 2.35%. The Algerian dinar average annual rate vs the US dollar was 119.36 USD/ DZD in 2019 vs. 116.62USD/ DZD in 2018.

The average annual exchange rate of the dinar against the euro fell from 137.69 EUR / DZD in 2018 to 133.71 EUR / DZD in 2019.

On the other hand, the exchange rate of the dinar reached 132 dinars against the dollar in February 2021, and 161 dinars against the euro, according to the data of the Central Bank of Algeria, while the currency lost more than four dinars against the dollar in early April 2020 with the beginning of the crisis. Health, as the exchange rate reached 127.02 dinars to the dollar, after it was at 123 dinars, and the European currency "euro" jumped from 135 dinars during the year 2020.

3. Oil price shocks on exchange changes Algeria:

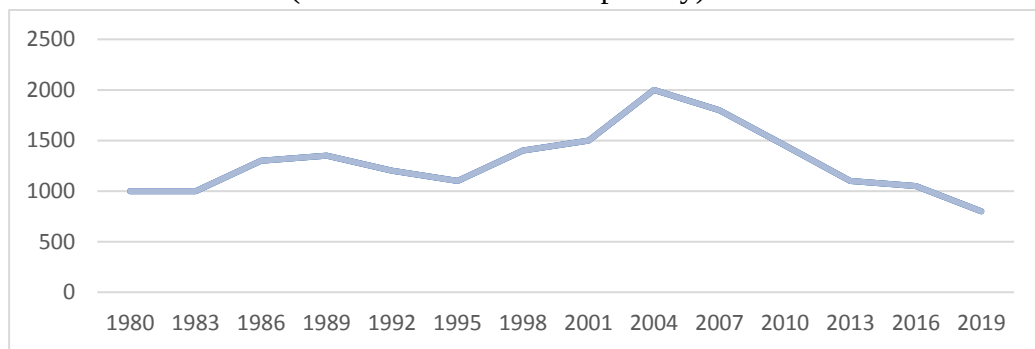
3.1: Oil price shocks: Oil prices are influenced by a combination of economic factors such as supply and demand forces and other factors such as wars. The most important major stations experienced by oil prices can be highlighted: (Bouchaour & Zeaud, 2012, pp. 101 -102).

- During the period 1973-1985 the pricing in oil market was controlled by oligopolistic and the OPEC; in 1973:
- Arab oil embargo backdrop of the support of the Zionist entity; As a result of the Yom Kippur war, crude oil price; quadrupled from \$3 per bbl in 1972 to \$12 per bbl by the end of 1974;
- Subsequent Iran-Iraq war more than doubled prices from \$14 per bbl in 1978 to \$35 per bbl in; oil prices ;
- Because of the Iraq invasion of Kuwait in 1990. But after 1991; oil prices continued to fall and during the Asian ;
- Crisis in 1997 and 19;
- During 1990 – 1991 the second Gulf War when the oil prices know a positive shock, that led to increased 98 when oil prices knew a significant decline reached less than 10 \$ this crises occurred ;
- Because of the Asian recession crisis and increased production of consumer countries. Since the end of 1999 all ;
- Prices fluctuated in the \$25 to \$30 range in the first half of 2000, and continued to display volatility ;

- Prices continued to decline in 2001 as global economic activity slowed and with growth prospects dampened ;
- Prices plummeted with the September 11 attack .But in the beginning of 2002 the prices know some of Recovery;
- Quarter of 2003 the Oil prices began to record unprecedented and continuous increasing influence ;
- December 2006. The price of curd oil, which averaged only 34 \$ per barrel in January 2004
- Reached 75\$ per barrel. Prices fell briefly below 55\$ per barrel in January 2007due to mild winter. In the period 2007/2008 oil prices volatility was characterized by sharp ;
- The global financial crisis 2008: record high of US\$147 by the July 2008;
- 2009 characterized by global recession and the declining in world economic output; which led to reduce the demand for oil in many sectors; as a result; oil prices collapse. During the first half of 2011;
- Oil supply was affected by temporary shutdowns of production in countries that are not members of the Organization of Petroleum Exporting Countries (OPEC) for maintenance and capacity expansions and by supply disruptions in Libya.

Figure (02): «Algeria's oil production during this period 1980 - 2019»

(In thousands of barrels per day)



Source : (Escribano, 2016, p. 19)

Figure shows us the decline in oil production especially in recent years due to:

Which has become more difficult due to declining European consumption.²⁹ another major hurdle is the lack of pipeline capacity to ship gas from Spain through the Pyrenees, which limits Algeria's ability to reach significant parts in the European Unionropean market. Major reason is also the impact of persistent low oil prices in Algeria.

3.2. Corona pandemic (Covid-19) and oil price fluctuations in Algeria:

Algeria is facing a combined shock from halving oil prices, a public health crisis and the consequences of global economic disruptions following the COVID-19 outbreak. An oil price at US\$ 30/barrel in 2020 would decrease Algeria's total fiscal revenues by 21.2%. Despite cuts to public investment (-9.7%) and public consumption (-1.6%) envisaged by the 2020 Finance Law, the fiscal deficit would increase to 16.3% of GDP. Meanwhile, the sharp decline in export revenues (-51%) will lead the trade deficit to expand to 18.2% of GDP and the current account deficit to peak at 18.8% of GDP in 2020, despite efforts to contain imports and weak domestic demand. (The World Banik, Algeria's Economic Outlook, 2020).

Algeria faces economic and social turmoil if crude prices continue to collapse, experts have warned, with the oil-dependent country reeling from a year of popular protests, political turmoil and now, coronavirus. The North African country is an example of how hydrocarbon economies are likely to face unrest if oil prices remain at near two-decade lows due to the COVID-19 pandemic and a price war between key players Saudi Arabia and Russia;

- Oil cartel OPEC announced that major producers had proposed to cut output between May and June2020 by 10 million barrels per day. But G20 countries failed to agree on cuts at a virtual summit Friday, April, 2020. Even if a deal is reached, Algeria will not be out of the woods, oil expert Nazim Zouioueche told official news agency APS, as any impact would be "temporary" due to the worldwide pandemic;
- After oil prices dipped to \$22.50. The country's 2020 budget had been based on an oil price of \$50 per barrel, with growth of around 1.8 percent. Algiers announced a 30 percent cut to the state budget, without touching civil servants' wages, and a reduction in its

enormous imports bill. State oil giant Sonatrach is to halve operating and capital expenditure, from \$14 billion to \$7 billion;

Algeria's Crude Oil: Production was reported at 808.000 Barrel/Day the in Jul 2020. This records an increase from the previous number of 807.000 Barrel/Day the for Jun 2020. Algeria's Crude Oil: Production

- Data is updated monthly, averaging 1,173.000 Barrel/Day the from Jan 2002 to Jul 2020, with 223 observations. The data reached an all-time high of 1,408.000 Barrel/Day the in Apr 2008 and a record low of 775.000 Barrel/Day the in Feb 2002. Algeria's Crude Oil. (Belalloufi, 2020).

Table (03): " Production - crude oil - thousand barrels per day (kb/d) - Algeria From January 2020 through February 2021"

DATE	VALUE	CHANGE %
2020 M1	1.011.00	- 0.98%
2020 M2	1.009.00	- 0.20%
2020 M3	1.033.00	2.38%
2020 M4	1.004.00	- 2.81%
2020 M5	812.00	- 19.12%
2020 M6	807.00	- 0.62%
2020 M7	809.00	0.25%
2020 M8	859.00	6.18%
2020 M9	861.00	0.23%
2020 M10	810.00	- 0.12%
2020 M11	862.00	0.23%
2021 M1	874.00	1.39%
2021 M2	878.00	0.46%

Source: (based, 2021)

Algeria production of crude oil was at level of 878 thousand barrels per day in February 2021 up from 874 thousand barrels per day previous month; this is a change of 0.46%. Although the Corona pandemic (Covid-19) continues, there is a slight increase in crude oil production.

IV Econometric study:

Through this standard study, we will try to know the impact of oil shocks on exchange rate changes in Algeria during the period from 1986 to 2019, and therefore we will use the annual data covering the period, which was

obtained from various official sources, which is represented in The Algerian Central Bank and OPEC.

In this study, we prefer the entry of the Nepalese logarithm to the exchange rate series, and become Ln (TC).

And on the oil price series it becomes Ln (PP).

1. Stationary study of time series of study variables:

To study the stationary of the time series of oil and exchange rate variables, we use the Extended Dickey-Fuller test (Dickey.DA & WIA, 1989, p. 1057) and the results obtained are listed in Table (04) below:

Table (04): " Results obtained from ADF test for study variables at the level of significance of 5%"

variables/test	In level					
ADF Augmented Dicky- Fuuller test	None		Constant		Constant, linear trend	
	t _{cal}	t _{tab}	t _{cal}	t _{tab}	t _{cal}	t _{tab}
LnTC	-3.243532	-1.952066	-3.414388	-2.960411	-4.798728	-3.562882
LnPP	-0.856436	-1.951687	-1.324,24	-2.960411	-2.015792	-3.562882
	1st difference					
ADF Augmented Dicky- Fuuller test	None		Constant		Constant, linear trend	
	t _{cal}	t _{tab}	t _{cal}	t _{tab}	t _{cal}	t _{tab}
DLnPP	-5.383969	-1.952066	-5.449590	-2.960411	-5.331067	-3.562882

Source: (output, From Eviews, 11).

In light of the results shown in Table (03) above, it appears that the time series of the series of exchange rates of the Algerian dinar against the US dollar (LnTC) is stationary in the level, because the calculated value of the Student statistic t_{cal} is smaller than the attribute value for the Student statistic t_{tab} at 5% level of significance. Value of the t_{cal} Student statistic is smaller than the tabular value of the t_{tab} Student statistic at the 5% level of significance. Also, the time series for oil prices (LnPP) is no stationary in level, because the calculated value of the student statistic t_{cal} is greater than the attribute value for the student statistic t_{tab} at 5%, but it is stationary in the first difference and it has become (DLnPP).

(LnTC) is stationary in level and (LnPP) is stationary in first difference, so, we use the autoregressive vector model.

2. Study the causality between the variables:

To determine the direction of the causal relationship between exchange rates and oil prices, we will use the Granger test for the causal relationship, but before this the number of lag p , appropriate to the VAR (P) model must be determined for the variables in the form of differences, which are chosen from different criteria, and by using the Eviews11 program we have arrived at the results presented in the following table (05):

Table (05): "Determining the optimum path delay (VAR) for variables in the form of differences»

VAR lag order selection criteria	1	2	3
Akaike information criterion	-0.658083	-0.472920	-0.412447
Schwartz information criterion	-0.377843	-0.005854	0.241445

Source: (output, From Eviews, 11).

From the results shown in the above table, it is clear that the optimum delay degree and approval of the results of most of the criteria is: $P = 1$, and therefore the test will be conducted accordingly and the test results are shown in the following table (06).

Table (06): "Granger test results for DLnTC and DLnPP"

Pairwise Granger Causality Tests			
Null Hypothesis:	Obs	F-Statistic	Prob
LnPP does not Granger Cause LnTC	33	4.55972	0.0088
LnTC does not Granger Cause LnPP	33	1.95053	0.1413

Source: (Outputs., Eviews. , 11)

We conclude from this, that there is a causal relationship between oil prices and exchange rates at the level of significant 5% in one direction, and oil prices are heading towards exchange rates, that is, oil prices cause exchange rates.

3. Determination of lag (VAR) model:

We have previously determined the appropriate number of lag for the VAR (P) model and have found that the optimum and approval lag for the smallest value of most criteria ..., (Schwarz akaike) is ($P = 1$).

The estimation of the vector autoregressive VAR model is by applying the least squares method in the event that we estimate each equation separately, but if we estimate all equations at once, we use the maximum reasonability method, and since $P = 2$, when estimating the vector autoregressive VAR

model, the results were The estimate is shown in the following table (07).

Table (07): "VAR Model Estimation Results (1)"

	LnTC	LnPP
LnTC (-1)	1.009511	-0.280772
LnPP (-1)	0.034632	0.853155
c	0.495436	0.340861

Source: (Outputs., Eviews. , 11)

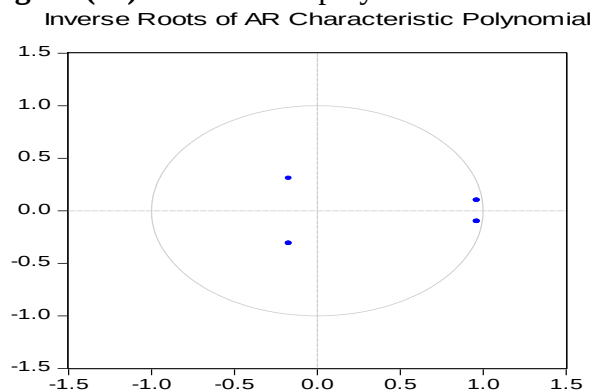
3.1. Model validity test:

In order to ensure the validity and validity of the model, we must ensure that it is free of standard problems and does not contradict economic theory, and accordingly we will undertake an economic and statistical evaluation of the estimated model (Bonnais, 2015, p. 276).

3.1.1. Test of stability of VAR (1) model:

The test results are represented in the following figure (02):

Figure (03): "Distinctive polynomial root circle"



Source: (Outputs., Eviews., 11)

Since all the roots of characteristic polynomial are distinct in the unit circle, the model is stable.

3.1.2. VAR residual serial correlation test:

The test results are represented in the following table (08):

Table (08):" LM test results"

VAR Residual Serial Correlation LM Tests		
Null Hypothesis: no serial correlation at lag order h		
Lags	LM-Stat	Prob
1	1.160900	0.8845

Source: (Outputs. E. , 11)

We note from the table (7) that $prob(LM) > 0.05$, so we accept the null hypothesis, and then there is no serial correlation.

3.1.3. Test of heteroskedasticity:

The test results are represented in the following table (09):

Table (09): " White Test Results"

CH-SQ	Df	Prob
41.77711	30	0.4807

Source: (outputs. E. , 11)

We note from the table N°6 that $prob(CH - SQ) > 0.05$, so we accept the null hypothesis, and then there is a stability of error variance.

From previous tests it can be said that the estimated VAR (1) model is of good statistical quality and reliable in the analysis.

3.2. Statistical Interpretation of the Results:

We will conclude from Table No. (06) Equations of Study Variables:

3.2.1. Exchange Rate Equation:

$$\text{LnTC} = 1.009511 * \text{LnTC}(-1) + 0.034632 * \text{LnPP}(-1) + 0.495436 \quad R^2 = 0.96$$

N = 33

Through the exchange rate equation (LnTC) we can extract the following results:

LnTC exchange rate index is a dependent variable in terms of its posterior value and the recent value of the oil price index;

- The positive relationship that links the LnTC exchange rate index to its previous value and the value of oil prices for the first previous period;
- The good explanatory power of the R^2 model = 0.96, meaning that 96% of the changes in the exchange rate index are explained by its previous value and the recent values of the oil price index;
- Hence, the exchange rate index equation is considered statistically acceptable at a statistically significant level of 5%.

3.2.2. Oil Price Equation:

$$\text{LnPP} = 0.853155 * \text{LnPP}(-1) - 0.280772 * \text{LnTC}(-1) + 0.340861.$$

$R^2 = 0.87$ N = 33

Through the **LnPP** formula, we can extract the following results:

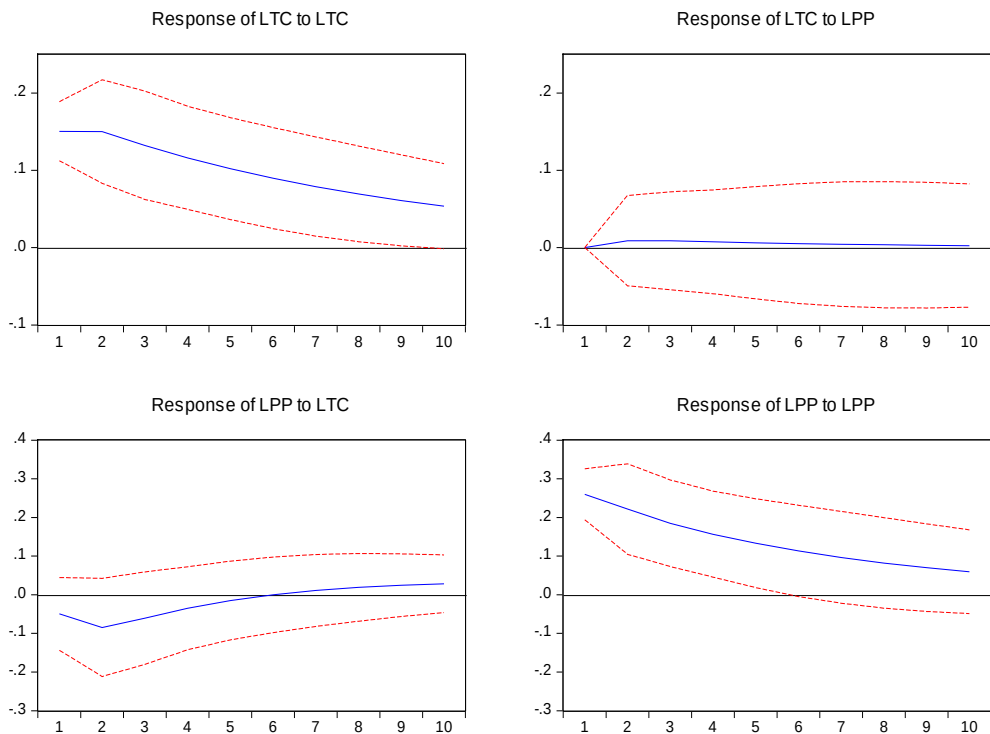
- Positive relationship between oil prices and its recent value in a period;
- The inverse relationship between oil prices and exchange rates that were delayed by a period;
- Good explanatory power of model $87R^2 = 0$. That is, 87% of changes in oil prices are explained by their previous value and the recent values of the exchange rate index;
- Hence, the explanation of the petroleum price formula is also statistically acceptable at the 5% level of significance.

3.3. The impulse response functions results:

The results of the impulse response functions are in the following figure (03):

Figure (04): "Impulse Response Functions of Study Variables"

Response to Cholesky One S.D. Innovations ± 2 S.E.



Source: (Outputs., Eviews. , 11)

Figure (2) shows the impulse response functions of the effects of oil price shocks on the exchange rate index, as follows:

- According to estimates of the aggregate impulse response functions during 10 years, a positive shock in the oil price of 1% leads to a negative impact of about 4% during the second year, to rise in the coming years to reach 1.4% in the fourth year, and then begins to rise slightly to reach To 3.6% in the tenth year, and this is consistent with the Algerian economy, since Algeria depends on oil revenues and the state must work to encourage the sectors that can contribute to raising the value of the currency ;
- Through the econometric study, it can be concluded that the estimated vector autoregressive VAR (1)) model is of good statistical quality and reliable in the analysis;
- The econometric study indicated an impact between oil price shocks and exchange rate changes.

V Conclusion:

In this research we have come to know both the theoretical and practical aspects of the subject of the study, where on the theoretical side we have tried to address the stages of the exchange rates of the Algerian dinar and the stages of the development of oil prices, After that, the standard method was used to find out the extent of the impact of fluctuations in oil prices that have exports to the oil sector, and from that has an impact on exchange rate changes, and that Algeria depends mainly on its revenues on oil.

- The study aimed at testing the effects of oil price shocks on the exchange rate in Algeria. To attain the objectives of the study, the analysis of annual data for time series has been used to cover the period 1986-2019 using the appropriate standard methods;

-That a 1% increase in oil price would lead the Algerian Dinar to depreciate to 0.36 % against US Dollar. This inverse impact between oil price and the Algerian Dinar reflects the;

- From previous tests it can be concluded that the estimated VAR (1) model is of good statistical quality and reliable in the analysis;

-Algeria is still suffering from instability of its exchange rates, due to the exchange rate policy applied;

- Relying on one resource whose price is held hostage to international prices, which creates risks, which leads to a failure to finance sustainable economic

development.

The de jure exchange rate arrangement is managed floating and the de facto exchange regime is classified as other managed arrangement with no preannounced path for the exchange rate. Algeria maintains an exchange system free from restrictions on the making of payments and transfers for current international transactions.

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