Revue des sciences humaines de l'université Oum El Bouaghi
ISSN 1112-9255
Vol 08, Number 01, March 2021

OEB Univ. Publish. Co.

The Effect of Dinar Exchange Rate Fluctuations on the Balance of Payments in Algeria Quantitative study (1992 - 2018)

أثر تقلبات سعر صرف الدينار على ميزان المدفوعات في الجزائر دراسة قياسية خلال الفترة (1992– 2018).

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Date de réception:(27/09/2020) , Date de révision: (22/10/2020), Date d'acceptation :(17/11/2020)

Abstract :

This study aims to investigate the impact of the Dinar fluctuation in exchange on the balance of payments in Algeria during the period 1992-2018, as the exchange rate plays an important role in stabilizing the balance of payments.
The main objective of this problem is to highlight the change in the exchange rate affects the local economy through affecting the international trade volume and the current balance of payments, as well as foreign investment and capital flow between the domestic and foreign economies.
It has been concluded that the specificity of the Algerian economy and its dependency on fuel can have a negative influence on the effectiveness of this policy.

Keywords: Exchange rates, currency devaluation policy, balance of payments, oil price, Algerian economy.

ملخص :

تهدف هذه الدراسة إلى معرفة أثر تقلب سعر صرف الدينار على توازن ميزان المدفوعات الجزائري خلال الفترة (1992– 2018) ، باعتبار أن سعر الصرف يلعب دوراً مهما في تحقيق التوازن في ميزان المدفوعات.

فالهدف الأساسي دراسة مدى تأثير التغير في سعر الصرف في الاقتصاد المحلي من خلال تأثيره في حجم التجارة الخارجية والميزان الجاري في ميزان المدفوعات، وكذلك من خلال تأثيره في الاستثمار الخارجي وتدفق رأس المال بين الاقتصاديين المحلي والخارجي .وقد تم التوصل إلى أن خصوصية الاقتصاد الجزائري وتبعيته للمحروقات من شأنها التأثير سلبا على فعالية هذه السياسة.

الكلمات المفتاحية :سعر الصرف، سياسة تخفيض قيمة العملة، ميزان المدفوعات، سعر النفط، الاقتصاد الجزائري.

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INTRODUCTION:

Many economists believe that changes in the exchange rate affect many macroeconomic variables. The decrease of exchange rate ,lead To increase international competitiveness for domestic commodities, this leads to higher exports and reduced imports. This leads to an improvement in the balance of trade deficit. But the decrease of domestically exchange rate can high import prices .This is what is happening in developing countries, including Algeria. Most of the imports of developing countries are essential and indispensable consumables, as well as raw materials that enter into local manufacturing and there is no local substitute for them.

It makes the country affected by imported inflation as a result of the high prices of these imports, and from the foregoing it becomes clear to us the importance of studying the effects of exchange rate, as it affects macroeconomic variables in the national economy and the price levels and the volume of foreign trade.

From the above, we can pose the following problem:"What is the role of the exchange rate in addressing the balance of payments imbalance to equilibrium?

To answer the problem, the following hypotheses were put forward:

The exchange rate is of great importance in conducting international trade through the reduction or rise of domestic prices as well as its role in rebalancing the balance of payments.

The exchange rate has no significance in managing international trade by reducing or increasing local prices, as well as its role in rebalancing the balance of payments.

In order to answer the previous problem, this paper was divided into three main topics:

I: the conceptual framework of the exchange rate and its theories.

II: the concept and structure of the balance of payments

III**:** analysis of the relationship between the exchange rate and the balance of payment

The research Objective to know the mechanism can be used by using fixed or flexible exchange rates and the extent of their impact on interest rates, use and domestic prices in the economic exchange between countries and address the imbalance that occurs in the balance of payments.

The importance of research comes from the importance of the exchange rate and its fundamental role in addressing the imbalance in the balance of payments and rebalancing the balance as a fundamental and important variable in economic policy.

II- the conceptual framework of the exchange rate and its theories

II-1- The concept of exchange rate

Definition : Is the exchange of a number of units of the local currency for one unit of foreign currency and thus the exchange rate is a link between the local economy and the world economy through the relationship between exports and imports, is defined as the number of units of foreign currency to be paid for one local unit of currency (Fouad Morsi, 1958, p. 96), the exchange rate can be defined as the exchange rate of a number of local monetary units for a number of foreign monetary units, it is also the mirror through which the state's trade center is reflected with the outside world. That why are done first a number of local currency exchange units for one unit of the foreign currency, the second that the exchange rate is the number of Foreign exchange units pay a price for one unit of the local currency, so the exchange rate is a link between an open economy and other economies of the world by knowing the costs and international prices. Balance of Payments(Fouad Morsi,OP Cit, 1958,p.206) The exchange rate reflects the number of monetary units in which one unit of currency is exchanged from one currency to another. Global market, the global price and the domestic price of the commodity are linked through the exchange rate

Also, the importance of the exchange rate role in linking the local economy to the global economy can be clarified through the three markets, namely, asset market, commodity market, factor market and macro and micro level. Where the exchange rate links between the prices of domestic goods and prices in the global market and the real exchange market determines the number of units of foreign goods required to buy one unit of local goods and the exchange rate seeks to achieve the overall objectives of internal and external balance and since the main objective of the exchange rate is limited to achieving stability To exchange the currency of the country against foreign currencies, which is the desired goal, but it may be difficult to achieve the subjection of the exchange rate to many determinants, as any commodity in a fully competitive market determined by the interaction of supply and demand forces.

II-2 types of exchange rate

II-2-1-Nominal exchange rate: It is a measure of the value of the currency of one country that can be exchanged for the value of the currency of another country Therefore, the exchange rate can change depending on the change in demand and supply and in terms of the exchange rate system adopted in the country. The nominal exchange rate is defined as the foreign currency rate in terms of the number of local currency units. This means the current nominal exchange rate. Nominal exchange rate is divided into two official exchange rate for official trade exchanges and the parallel exchange rate in (black markets) .

II-2-2-Real effective exchange rate: The real exchange rate is an indicator that measures the amount of change in the exchange rate of a particular currency against several other currencies during a certain period of time and therefore the real effective exchange rate is the average of several bilateral exchange rates. He is consider as indicator of competitive between countries.

II-2-3-Adjusted exchange rate: It is the exchange rate that is linked to the balance of payments and which has a direct impact and is closely related to the value of the country's exports and imports.

II-3- Exchange rate regimes: After the collapse of the Bretton Woods exchange rate stabilization regime in the early 1970s and the transition to allowing floating of official currencies in the exchange markets, the countries of the world have adopted a variety of exchange rate regimes (Abdul-Jalil Hajira, 2012, p.66). And we will explain all this regimes as flows:

II-3-1-Fixed exchange rate system: Under this system the exchange rate of the country concerned is pegged to a major international currency such as the dollar, the French franc, the German mark… etc. We find approximately 36 countries follow this system, and about half of the developing countries follow this system . This system is called the gold exchange rate system where governments relied on setting a fixed value of monetary units in relation to a certain gold weight with the possibility of transfer between them without restrictions as well as the freedom to import and export gold to and from the countries that followed the gold base and thus have maintained a fixed exchange rate for their currencies towards Each other. Under this system, there can be fluctuations in the currency rate against gold without being tangible (Mahmoud Sayed,2001,p.345).

II-3-2-Flexible exchange rate system: This system differs from the previous one in that the central bank allows the exchange rate to be adjusted so that the supply is equal to the demand of foreign currency without the intervention of foreign exchange markets, in this system we find that the exchange rate base depends on the mechanism of leaving the exchange rate It is determined automatically based on the forces of supply and demand and therefore the price apparatus, which is the forces of supply and demand, determine the exchange rate of each currency against other currencies without the intervention of the monetary authorities in this and therefore the demand for foreign exchange and supply works according to the general rule that demand works in reverse With price and supply It works in a direct direction with the price and thus the exchange rate is determined at the point where the required quantities are equal to the quantities offered in the case of prices(HOUMEM ,2002,p.455).

II-3-3-Managed fixed exchange rate system(The Brettonwoods): This system relied on the fixing of exchange rates and the obligation of monetary authorities to intervene in exchange markets for the purpose of maintaining price stability through the use of their international monetary exchange reserve to counter the imbalance in the balance of payments. After the Second World War in Brettonwoods, New Hampshire, in 1944, it was agreed to stabilize exchange rates according to the agreed exchange rate and to change it only within certain limits. In order to take some flexibility, exchange rates were allowed to change up or down. Within (1%)The exchange rate has witnessed more than two decades of relative stability due to official monetary reserves. This made Brettonwoods a fixed but adjustable exchange rate system that was(fixed in the short term and adjustable in the long run) (Mahmoud Sayed Abed, OP Cit, p.323).

II-3-4-Managed floating exchange rate system: This system relies on the interaction of the forces of supply and demand for the local currency in the foreign exchange market freely. Any changes in the supply and demand of currencies in order to balance the balance of payments without any intervention by the monetary and financial authorities to determine it, and the countries that follow this system benefit from exchange rate flexibility when the devaluation of the local currency will be reflected in the level of prices in goods and services Will be of low value to the foreign importer and hence its imports of these goods and services will increase. This leads to an improvement in the situation in the trade balance, so that the state does not need domestic policies that were expansionary or deflationary policies to maintain the balance as these policies are free from restrictions imposed on the balance of payments(Falih Hassan Khalaf,2004,p.73).

II-4 - Factors affecting the exchange rate: It is known that the exchange rate is often unstable up or down, due to several factors, including monetary factors and financial and other commercial factors, etc. and each exercise its direct and indirect impact on the state of the national economy through the imbalance that will occur in the balance of payments directly related to exchange rates This is what makes the State often intervene to exercise its role in the stability of exchange rates, so we will address the most important factors affecting the exchange rates. Monetary factors: The exchange rate is influenced by the monetary factors of inflation, interest rates, money supply and others, directly or indirectly, which leads to either the exchange rate rise or fall both according to its impact.

II-4- 1- Monetary factors: The exchange rate is influenced by the monetary factors of inflation, interest rates, money supply and others, directly or indirectly, which leads to either the exchange rate rise or fall both according to its impact and we will explain all this factors as flows :

II-4-1-1-inflation: the high inflation in a particular country means a decrease in the value of the local currency ,which is offset by the high prices of good and services compared to other countries , and this makes an imbalance in the balance of payments where imports will be greater then exports, due to the fact that the local goods are at high prices while foreign goods are at low prices as the demand for foreign goods increase and the domestic currency supply will increase in other countries (Falih Hassan Khalaf ,OP Cit, p.p.74,75).

II-4-1-2- Interest rate: There is a close correlation between the interest rate and the currency rate. Conversely, in the case of high real interest rates, this will be an attraction for foreign capital, which in turn will lead to an increase in the exchange rate in foreign exchange markets. A lower interest rate leads to higher demand for capital for the purpose of investing. Can this lead to the increase of demand of the local currency and The strength of the local currency(ELCHERIF, 2000, p.55).

II-4-1-3-Money supply: Money supply has an inverse relationship with the exchange rate, as the high money supply, which is represented in the currency and bank deposits, leads to lower exchange rates, where inflation works because the increase in the quantity of money supply leads to a decrease in the value of the local currency and thus the exchange rate. Although some economists do not share this view. However, a large number of economists dealing in the foreign exchange market, including the American (Macklup) view the importance of the factor of the amount of money and its impact on exchange rates according to the quantitative theory that shows The basis for determining the exchange rate between currencies is the amount of money available in a given country.

II-4- 2- Financial factors:

The financial policy tools, through which they can affect the exchange rates and the amount of money offered and even the state of economic activity of the country. The most important financial factors that affect exchange rates are as follows:

II-4- 2-1- Public Expenditure: Public expenditure is the second pillar with the revenues comprising the general budget of the country and should not exceed public revenues to prevent balance deficits. If public expenditures exceed revenues, there is a balance deficit that must be addressed (Hoshyar Maarouf, 2005, p.312).

II-4- 2-2- Public Revenues: The tax policy affects exchange rates through the percentage of exemptions provided to capital investments, which encourages investment and makes foreign capital flow inward, which increases the demand for the local currency and hence its exchange rate, but there is a difference between developing and developed countries Developed countries impose taxes on the income of residents, even if the source of income from abroad, while domestic income does not impose a tax on it, while developing countries do not impose taxes on the income of their citizens emerging in all countries of the world but Taxes the income generated by the profits of foreign investments, this difference is called (the opposite flow of capital), whereby capital flows from developing to developed countries, which increases the demand for the currencies of developed countries and therefore the tax policy has an impact on exchange rates from During the increase in demand for local currencies or decrease demand for them(Shaima Hashem Ali, 2006, p.66).

II-4- 3-Real Factors: The monetary and financial factors have an impact on the exchange rate and how they address the imbalances that occur as an expansionary or deflationary policy such as the new cash issuance, revenues and taxes there is an other factors wish affects exchange rate colled a real factors (Ihsan Habib Mansour,1984,p19) .

II-5- Explanatory theories of the exchange rate:

II-5-1-The theory of purchasing power parity: This theory goes back to the Swedish economist (Gustav Castle) in 1914 and this theory states that the exchange rate of any currency is determined by the purchasing power in the country and compared to its purchasing power outside the country, the relationship between the currency of a particular country and a country Another is determined by the prevailing price levels between the two countries.(Amin Saed,2013,p.82) the increase of local prices comparing to international price under a certain exchange rate leads to the rise of the exchange rate automatically and this in turn leads to increase imports and increase demand for foreign exchange and decrease exports and foreign exchange because this theory suggested that there are no structural changes in the national economy and assume that the state does not interfere in foreign trade The theory neglected other factors that have a direct impact on the exchange rate such as income, interest rate and speculation and neglected the different price elasticity of demand in exports and neglected the consumers tastes and tariffs However, this theory, despite criticism, remains an important theory in determining the exchange rate (Samir Fakhry Neama ,2011, p.59).

II-5-2- Balance of Payments Theory: Changes in the balance of payments are determined by the external value of the currency (exchange rate) since the exchange rate is determined as other prices are determined according to the rule of supply and demand, the quantities required and displayed are determined by the exchange rate (Laila Bedoui Khudair, 2009,p.30). In the case of any surplus of the export side on the import side, this means an increase in the demand for the local currency against foreign currencies, the increase of its exchange rate and the increase of its external value, either if the balance of payments has achieved a deficit .increase of import side and decrease export side it means de decrease of local monetary (increase its supply and decrease its exchange rate) (Mohamed Abdel-Aziz Agamia, Medhat Mahmoud El-Akkad, 1979,p.39).

II-5-3- Monetary theory in determining the exchange rate: This theory is determined by the exchange rate through the flow of balances in the foreign exchange market, and this theory focused on the exchange rate is a monetary phenomenon because it is affected by the real determinants of demand for money, as the money authority determine the money supply , this theory determine the exchange rate thought the fellow of balances in the foreign market The demand for money is determined by the level of real income, and the general level of prices and the interest rate, where the interest rate plays an important role in determining the exchange rate. High interest rates in one country compared to other countries lead to an increase in the exchange rate. And vice versa low interest rate situation.

II-5-4-The theory of volatility of financial asset markets: After the failure of monetary theory in determining the exchange rate as it focused on the role of money and neglected trade and assumed that domestic financial assets and foreign is a complete alternative to money. However, the theory of "balance of the portfolio", or the so-called theory of financial asset markets, emerged, which was addressed by the French economist (Jacques Arts). This theory suggested that domestic and foreign stocks are incomplete alternatives to money and that the exchange rate is determined by the balance of supply and demand for financial assets and that there is a prominent role for trade in determining the exchange rate. And this theory emphasis that the increase of the money supply lead the decrease of interest rate this shift will lead to a deterioration in the value of the currency and will stimulate exports and stabilize the state's imports, leading to a surplus in the trade balance and then an increase in the value of the local currency. And this theory has made it clear that the correct deterioration occurred in the local currency has been through trade entry in the balance in the long term (Sami Khalil, 2005,p.05).

III: the concept and structure of the balance of payments:

III-1- The concept of balance of payments: An account record showing the rights and obligations of the State to the outside world, which is established as a result of the transactions carried out by this State with other countries and within a specified period of time (Sima Mohsen, Samira Fawzi, 2016, p.10).It is defined as a basic, structured and brief record of all economic transactions among individual citizens, governments, companies, or local institutions with a foreign country during a given period, usually a year (Arafat Taki, 2002,p.20), the IMF also defined the balance of payments comprehensively as a record based on double entry as it deals with time period statistics for changes in the value of assets of the economies of countries due to their dealings with other countries, or because of the migration of individuals.As well as changes in the value of money held by gold or special drawing rights from the Fund, as well as their rights and obligations towards the rest of the world (IMF, 2010, p. 8), which shows that the balance of payments is a record of what the state pays to the outside world and what it receives from it, as recorded economic transactions in the balance Payments according to the double-entry method, each economic transaction is recorded twice. Once in the creditor side, exports are considered to be positive, against which the State receives revenues from other countries, and again is recorded in the debtor side, which is considered imports by other countries, and whose reference is negative, under which the state pays material resources to the exporting country، . Often, the balance of payments from an accounting point of view is balanced. In economic terms, the opposite is because the accounting balance is not necessarily an economic balance. From an economic point of view, the balance of payments depends on the balance of the balance of its components (IMF, OP Cit, p. 9).

III-2- the balance of payments structure: The balance of payments consists of a set of sub-accounts, each of which includes a set of economic transactions that take place between countries. Each of these accounts may be in surplus or deficit regardless of the general situation of the balance of payments. This is what economic theory is concerned with in achieving a balance in the balance of payments away from the accounting balance and these accounts are-:

III-2-1- Current Account: It includes all cash flows that result from the economic transactions of goods and services it is one of the most important elements that express the external situation of foreign trade and divided into two parts:

a - Trade Balance: It is called the balance of physical trade, where all the physical goods entering or leaving the country are recorded and the trade balance expresses the calculation of the value of external transactions, the difference between exports and imports. If the surplus of a particular policy is the policy reflected

b - Balance of services: All services provided by the State to foreign residents and in return receive revenue and recorded in the creditor side, as well as services provided by other countries to residents, which the State pays for money and recorded in the debtor, which is worth It should be noted that 70% of international trade is trade in services, which includes transport services, insurance, trips abroad, foreign investments and others (Saed, OP Cit, p. 82).

III-2-2 - Account of transfers from one party: or as it is called unilateral transfers and recorded in this aspect transactions of gifts and assistance to foreigners, which are registered in the debtor side it may be transfers in kind or real, as well as aid and gifts received by the State from foreigners and recorded in the creditor side It is called unilateral because it lacks the remuneration to be completed in order to complete the swap process and therefore these transfers do not entail an obligation on the part of the receiving State. (AbdelNabi, 2011, p. 07)

III-2-3- Capital Account: All cash inflows into and out of the country are recorded in this account. This account includes long-term capital, including long-term loans, investments with a repayment period of more than one year, and short-term capital that includes deposit movements. Current and selling and buying shares and bonds that have a repayment period of one year or less and record cash flows granted to foreigners or granted by foreigners, whether they are sources (from state or individual sources) an cash flows from foreigners (non-residents) to the country are recorded on the creditor side, and the repayment of national loans granted from the country abroad is also recorded on the creditor side.

III-2-4-Cash Gold Account: Settlement of payments between countries through foreign transactions or gold, which is one of the most acceptable means of payment in international transactions and meet the obligations are settled balance of payments to the country with a deficit of exporting gold abroad, either in case of surplus is purchased a quantity of Gold worth its surplus. The amount of gold in which the balance of payments is settled is what the Central Bank maintains as a currency cover or reserve (Hussam Ali Dawood and others, 2002, p. 20).

IV- Analysis of the relationship between the exchange rate and the balance of payments

IV-1- Analysis of changes in the exchange rate, exports and imports

The above shows that the balance of payments is a record of goods and services entering and leaving the country and thus is a mirror that shows the external situation of the country and the State is also interested in the balance of balance payments in general by focusing on the items of balance and the balance of each of them Also, we found that the exchange rate is the most influential factor through which the equilibrium of the state can be achieved. if there is a certain imbalance in the balance of payments through its impact on the value of the local currency. The exchange rate of the local currency is unstable for certain reasons that the country sometimes goes through. This can be seen from the following table:

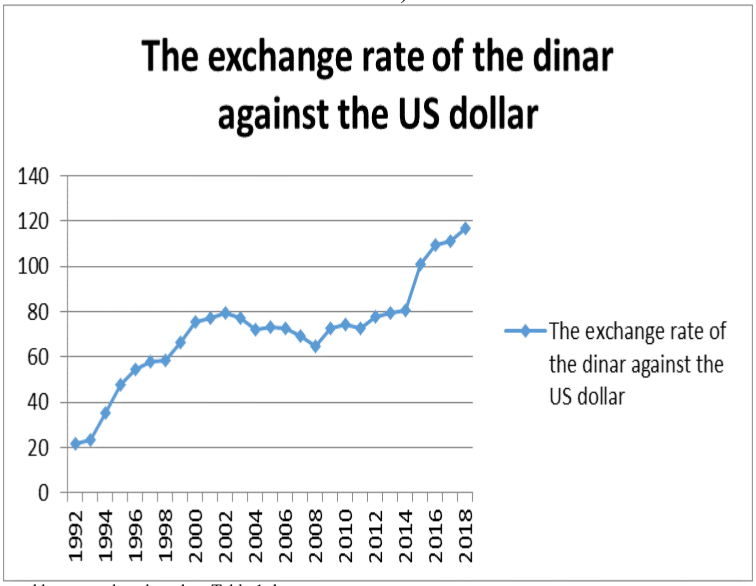
Table (1) Exchange rate of the dinar against the US dollar for the period (1992-2018)

Exchange rate of the dinar	Year	Exchange rate of the dinar	Year
72,6466167	2006	21,836075	1992
69,2924	2007	23,3454067	1993
64,5828	2008	35,0585008	1994
72,6474167	2009	47,6627267	1995
74,3859833	2010	54,7489333	1996
72,9378833	2011	57,70735	1997
77,5359667	2012	58,7389583	1998
79,3684	2013	66,573875	1999
80,5790167	2014	75,2597917	2000

100,691433	**2015**	**77,2150208**	**2001**
109,443067	**2016**	**79,6819**	**2002**
110,973017	**2017**	**77,394975**	**2003**
		72,06065	**2004**
116,593792	**2018**	**73,27630**	**2005**

Source: IMF statistics (annual rate calculation)

.**Fig.1**. The exchange rate of the dinar against the US dollar for the period (1992- . 2018)



Source: Prepared by researchers based on Table 1 data

e note that the exchange rate of the Algerian dinar against the US dollar began to decline since 1994 due to the devaluation of the Algerian dinar to continue to decline to 75.36 dinars to the dollar, while it was not more than 50 dinars per dollar in 1994, and during the period 2000-2014 remained relatively constant between 75-80 dinar to dollar, The increase in 2007 to 66 dinars per dollar due to the subprime mortgage crisis that hit the US economy during that period and the rise in oil prices, which affected the value of the US dollar globally, but because of the reductions made by the Central Bank In recent years. The dollar exchange rate rises against the dinar to exceed 100 dinars in 2015.As for exports, and from the observation of Table (2), the following can be seen:

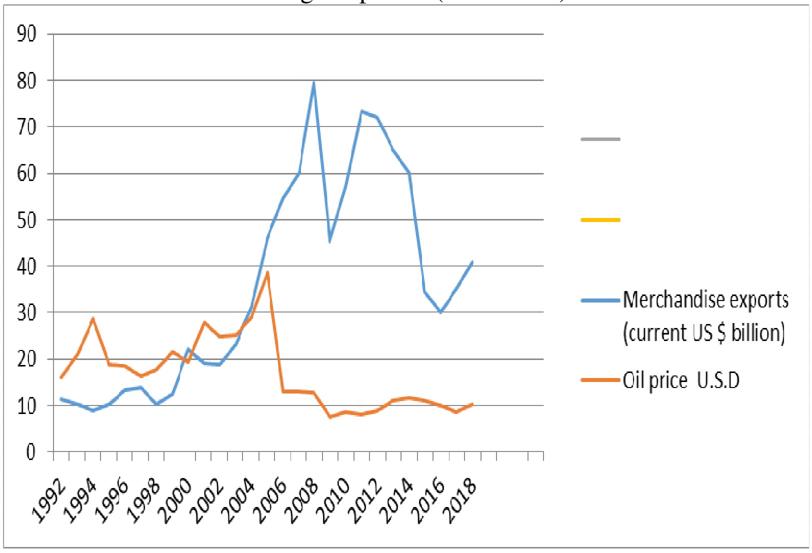
Table 2. Total exports for the period (1992-2018) billion dollars

Year	Oil price U.S.D	exports	Year	Oil price U.S.D	exports
1992	16,1	11,51	2006	13,029	54,613
1993	21,15	10,41	2007	13,078	60,163
1994	28,85	8,892	2008	12,841	79,298
1995	18,8	10,258	2009	7,43	45,174
1996	18,6	13,25	2010	8,606	57,053
1997	16,31	13,894	2011	8,155	73,489
1998	17,6	10,209	2012	8,949	71,866

1999	21,6	12,525	2013	11,018	64,974
2000	19,49	22,031	2014	11,79	60,061
2001	28	19,133	2015	11,137	34,668
2002	24,8	18,799	2016	10,098	30,026
2003	25,24	23,163	2017	8,591	35,191
2004	29,03	31,304	2018	10,422	40,883

Source : - Central Bank Various Annual Bulletins.
Opec statistics (weighted average of OPEC basket of prices)

Fig.2. Curve showing the change in exports E in terms of the change in oil prices during the period (1992-2018)



Source : Prepared by researchers based on data from Table 2

We note that there is a direct relationship between oil prices and exports, the change in exports is explained by changes in oil prices and the presence of exports is mainly related to oil prices and movement.

There is a strong correlation between oil prices and exports. One of the objectives of increasing exports is to provide hard currency to cover the needs of foreign countries. With regard to imports, as can be seen from

Table 3.Imports of goods and services (1992-2018) (one hundred billion constant local currency units)

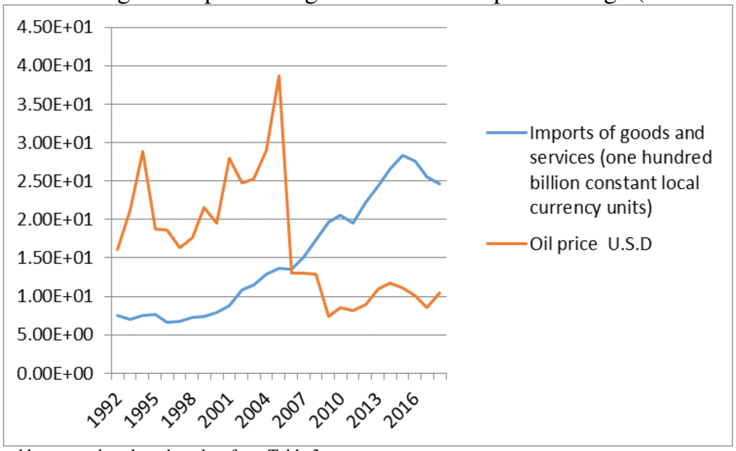
Year	Oil price U.S.D	imports	Year	Oil price U.S.D	imports
1992	16,1	7,54052	2006	13,029	13,4735
1993	21,15	7,0353	2007	13,078	15,0769
1994	28,85	7,46445	2008	12,841	17,3987
1995	18,8	7,61374	2009	19,6258	45,174
1996	18,6	6,60112	2010	20,5089	57,053

1997	16,31	6,75954	2011	19,5655	73,489
1998	17,6	7,25299	2012	22,2656	71,866
1999	21,6	7,376	2013	24,4476	64,974
2000	19,49	7,93658	2014	26,5012	60,061
2001	28	8,82547	2015	28,3298	34,668
2002	24,8	10,873	2016	27,5365	30,026
2003	25,24	11,4275	2017	25,5814	35,191
2004	29,03	12,8559	2018	24,6605	40,883

Source: - Central Bank Various Annual Bulletins

Opec statistics (weighted average of OPEC basket of prices)

Fig.3. Curve showing IM import change in terms of oil price change (1992-2018)



Source: Prepared by researchers based on data from Table 3

There is a strong correlation between oil prices and imports. This correlation is due to the fact that the financial resources through which national imports are covered are mainly derived from the revenues derived from oil exports. One of the objectives of increasing exports is to provide euro-dollar to cover the needs of foreign countries. according to a concluding input relationship, the value of imports is influenced by price movements.

IV-2- Analysis of the impact of the exchange rate on exports and imports:

Simple linear regression is an important measure to measure the quality of the relationship between two variables, as many studies have the relationship between more than two variables as it is a relationship of dependence (regression). and Simple linear regression is one of the statistic means used in the study between two variables one variable is called dependent variable and the other independent variable has an effect on the dependent variable. In this paper, we examine how the exchange rate (independent variable) affects total import and total exports (dependent variable) from 1992 - 2018) After determining the problem of the study has to be put hypotheses, which states:

<u>The first hypothesis:</u>

H0: There is no statistically significant relationship at the level of significance (0.05) between the exchange rate and the total imports.

H1: There is a statistically significant relationship at the level of significance (0.05) between the exchange rate and total imports.

The second hypothesis:

H0: There is no statistically significant relationship at the level (0.05) between exchange rate and total exports.

H1: There is a statistically significant relationship at the level of significance (0.05) between the exchange rate and total exports.

After identifying the problem of the study and setting the appropriate hypotheses, the researcher used the program (spssv22) to find out and analyze the results. The table shows the measure of the ratio of the effect of the independent variable (exchange rate) on the dependent variable (total imports), using the least squares method used to determine the simple linear regression model :

Table 4. Variables Entered/Removed[a,b]

Model	Variables Entered	Variables Removed	Method
1	سعر الصرف[c]	.imp	Enter

Source: Prepared by researchers using eviews10

After measuring the effect of the independent variable and testing the best model of data, it was found that the value of ($R^2 = 0.572$) means that the independent variables account for (57%) of the dependent variable (57% of the exchange rate affects imports). But the residual is due to unknown random errors estimated(43%) The correlation coefficient was (0.756) at a significant level (0.000), as shown in the following table:

Table 5

Dependent Variable: IMP
Method: Least Squares
Date: 01/03/20 Time: 21:14
Sample: 1992 2018
Included observations: 27

Variable	Coefficient	Std. Error	t-Statistic	Prob.
XCH	0.251576	0.043491	5.784590	0.0000
C	-2.791702	3.246687	-0.859862	0.3980

R-squared	0.572368	Mean dependent var	15.11899
Adjusted R-squared	0.555263	S.D. dependent var	7.610529
S.E. of regression	5.075357	Akaike info criterion	6.157858
Sum squared resid	643.9812	Schwarz criterion	6.253846
Log likelihood	-81.13108	Hannan-Quinn criter.	6.186400
F-statistic	33.46148	Durbin-Watson stat	0.154558
Prob(F-statistic)	0.000005		

Source: Prepared by researchers using eviews10

The following table shows the suitability of the data regression line and the null hypothesis (the first hypothesis study) reached a statistical value (F = 33.46) at the level of significance (0.000), which is less than the level of significance (0.05), which indicates the significant differences and that the model represents the studied phenomenon accurately. The regression line fits the data given in the sense of rejecting the null hypothesis and accepting the alternative hypothesis but for regression squares reached (861,942703929069) in degree of freedom(1)as for sum errors squares reached (643,981219121717) in degree of freedom(25) but the sum of the total squares (1505,92392305079) in degree of freedom (26), as for the rate of regression squares and the rate of residual squares has It reached (861,942703929069) (25,75924876486868) as shown in the following table:

Table 6.ANOVA[a,b]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	861,942703929069	1	861,942703929069	33,461484	.000[c]
Residual	643,981219121717	25	25,7592487648687		
Total	1505,92392305079	26			

Source: Prepared by researchers using excel2007

The value of the exchange rate effect on the total imports was (t=0.2515) at a significant level (0.000) which is lower than the statistical significance level (0.05) in other worlds, the value of the total import is changed by (0,2515) For each one unit as shown in the table:

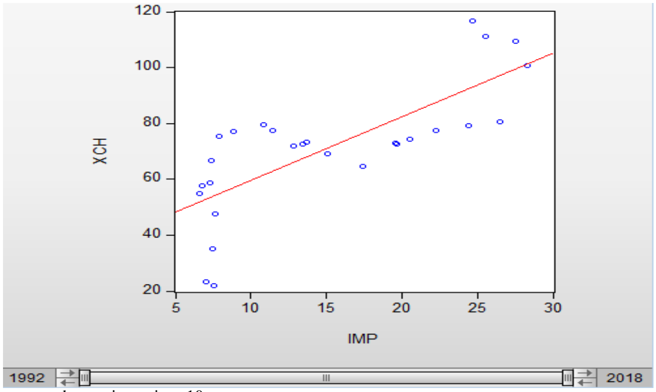
Table 7.Coefficients[a,b]

	Coefficient:	Erreur-type	Statistique t	Probabilité	nite inférieure pour s. c = 95	supérieure pour s.c = 95%
Constante	-2,7917	3,246686727	-0,8598618	0,39803612	-9,478378333	3,894974521
Variable X 1	0,251576	0,043490689	5,78459026	4,9755E-06	0,162005067	0,341146567

Source: Prepared by researchers using excel2007

Moderate normal distribution of random errors can also be found by examining the diagram of the aggregate probability of observation and the aggregate probability of residuals (random errors) as shown in the following figure:

Fig.4.normal p-p plot of regression standardized residual
Dependent variable:imp



Source: Prepared by researchers using eviews10

For the measurement of the ratio of the effect of the independent variable (exchange rate) on the dependent variable (total exports) as shown in the table which shows the method of least squares is followed in determining the simple linear regression model.

Table 8.Variables Entered/Removed[a,b]

Model	Variables Entered	Variables Removed	Method
1	سعر الصرف[c]	.exp	Enter

Source: Prepared by researchers using eviews10

After measuring the effect of the independent variable and testing the best model of the data, it was found that the value of (R^2= 0.148166), which means the coefficient of determining the best model (the value of the correlation coefficient box) that is the independent variables explain that 15% is influenced by the dependent variable (15%) of the exchange rate

Affects the total exports and the rest is due to their value random unknown errors and the correlation coefficient (r=0.38485) reached a significant level (0.000) as shown in the following table:

Table 9. Model Summary[c,d]

Dependent Variable: EX
Method: Least Squares
Date: 01/03/20 Time: 21:44
Sample: 1992 2018
Included observations: 27

Variable	Coefficient	Std. Error	t-Statistic	Prob.
XCH	0.382254	0.183346	2.084877	0.0475
C	8.298385	13.68722	0.606287	0.5498

R-squared	0.148116	Mean dependent var	35.51256
Adjusted R-squared	0.114041	S.D. dependent var	22.73183
S.E. of regression	21.39643	Akaike info criterion	9.035513
Sum squared resid	11445.19	Schwarz criterion	9.131501
Log likelihood	-119.9794	Hannan-Quinn criter.	9.064055
F-statistic	4.346714	Durbin-Watson stat	0.358811
Prob(F-statistic)	0.047450		

Source: Prepared by researchers using eviews10

The table below examines the appropriateness of the data regression line and the null hypothesis (the second hypothesis study). The null hypothesis study which states that (there is no statistically significant relationship at the level (0.05) between the exchange rate and the total exports) as the value of his statistics (f=4,346714). Significant level (0.04745) is less than the level of significance (0.05), which indicates the absence of significant differences and that the model represents the phenomenon studied accurately and that the regression line fits the data given in the sense of rejecting the null hypothesis and acceptance of the alternative hypothesis, as for the total regression squares has reached (1989,95793457179) in degree of freedom (1) The total error squares were (11445,1850900949) in degree of freedom (25) but The total squares (13435,1430246667) at the degree of freedom (26), while the rate of regression squares and the rate of residual squares, reached respectively (1989,95793457179) (457,807403603796) as shown in the following table:

Table 10.analyse de variance

ANALYSE DE VARIANCE					
	D. libert	*Somme des carrés*	*Moyenne carrés*	*F*	*V, critique F*
Régression	1	1989,957935	1989,957935	4,34671418	0,04745019
Résidus	25	11445,18509	457,8074036		
Total	26	13435,14302			

Source: Prepared by researchers using excel2007

The value of the exchange rate effect on the total imports was (t =0.382254) at a significant level (0.000) which is lower than the statistical significance level (0.05).the value of the marginal slope has reached(0.382254) in other worlds, the value of the total import is changed by (0.382254) per unit as shown in the following table :

Table 11. Coefficients[a,b]

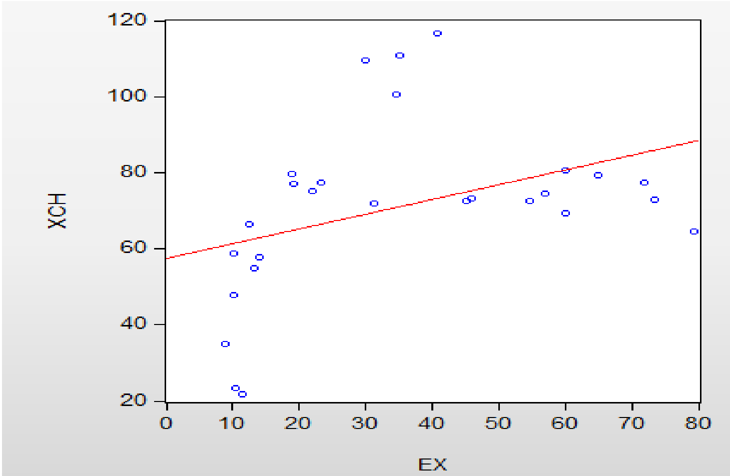
	Coefficier	*Erreur-type*	*Statistique t*	*Probabilité*	*pour seuil de*
Constante	8,298	13,68721833	0,606287216	0,54979021	-19,8909681
Variable X 1	0,382	0,183345856	2,084877498	0,04745019	0,00464579

Source: Prepared by researchers using excel2007

Moderate normal distribution of random errors can also be found by examining the graphical view of the aggregate probability of observation and the aggregate probability of residual (random errors) as shown in the following figure.

Fig.5.normal p-p plot of regression standardized residual

Dependent variable: exp



Source: Prepared by researchers using eviews10

The present study used a simple linear regression analysis method to test the hypotheses of the study. The study revealed the rejection of the null hypothesis of the test hypotheses (the first and the second hypothesis) and the acceptance of the alternative hypothesis, which provides a statistical significance at the level of significance (0.05), which indicates the existence of the exchange rate effect on both imports and exports.

Conclusion:

the following results can be obtained:

The Algerian dinar exchange system has witnessed several developments aimed at keeping pace with the changes in the international monetary system with local economic decisions to raise the level of macroeconomic performance and achieve balance of payments balance.

The exchange rate is considered as a link between the local and the global economy by virtue of commodity and financial exchange between countries.

Correcting the imbalance of payments through fixed and flexible exchange rates is an important and quick means to address the imbalance and its impact on both price movements, income and interest rate.

The Algerian balance of payments analysis showed a high dependence on the oil supplier in exports, where the proportion of exports reached 99% in most years.

The results showed that the correlation between the exchange rate and both exports and imports in Algeria is strong in the short and long term.

Recommendations:

1- Supporting the State's exports outside the hydrocarbons sector, not to link the state revenues from one source.

2 - try to form a reserve basket of various foreign currencies and activate the role of the stock exchange.

3 - Work on the development of economic policies to achieve stability in exchange rates and stimulate the flow of remittances continuously through official channels in order to improve the external situation of the country.

4 - Work to reduce the exchange rate and raise the value of the local currency without compromising the internal stability and not to adhere to a fixed exchange rate and to be realistic reflects the forces of supply and demand.

5 - Improving the efficiency of the productive system to cope with the aggregate demand for exported goods, diversifying the structure of trade in exports and finding alternatives to domestic imports to reduce the depletion of exchange reserve.

Bibliography list :

-Ihsan Habib Mansour - Determining the appropriate exchange rate in the least developed countries - International Monetary Fund - Journal of Finance and Development - Volume 24 - No. 2 - 1984.

-Amin Saed - Exchange policy as a tool for settling the imbalance in the balance of payments - first edition - Hassan Al-Asriyya Library for Printing and Publishing - Lebanon - 2013.

-Hussam Ali Dawood and others - Foreign Trade Economics - First Edition - Dar Al Masirah for Publishing and Distribution - Jordan - 2002.

- Abdul Majeed Qadi, Introduction to Macroeconomic Policies, An Analytical and Evaluation Study, Diwan of University Publications, Algeria, 2003.

-Rashad Al-Attar, Alyan Al-Sharif - International Finance - First Edition - Al Masirah House for Printing and Publishing - Jordan - 2000.

-Sami Khalil - International Economy - First Edition - Arab Renaissance House for Printing - Jordan - 2005.

-Samir Fakhry Neama - The Mutual Relationship between the Exchange Rate and the Interest Rate and Its Reflection on the Balance of Payments - First Edition - Dar Al-Yazouri Scientific Publishing and Distribution - Jordan - 2011.

-Samir Fakhry Neama - The Mutual Relationship between the Exchange Rate and the Interest Rate and its Reflection on the Balance of Payments - First Edition - Dar Al-Yazouri Scientific Publishing and Distribution - Jordan - 2011.

-Sima Mohsen, Samira Fawzi - The relationship between the dinar exchange rate and the trade balance for the period (1990-2010) - Dinar Magazine - ninth issue - 2016.

-Shaima Hashem Ali - The effect of the government budget deficit on the foreign exchange rate - Master Thesis - Faculty of Sharia and Economics - University of Constantine - 2008.

-International Monetary Fund - Balance of Payments Manual - Fourth Edition - Abu Dhabi Printing and Publishing Corporation, 2010.

-Al-Taher Larsh, Banking Technologies, University Press Office, Algeria, Sixth Edition, 2007.

-Abdul-Jalil Hajira Majitser's Note The Impact of Exchange Rate Changes on the Trade Balance (Algeria Case Study), University of Tlemcen 2012.

-Arafat Taqi - International Finance - Second Edition - Majdalawi Publishing House - Amman - 2002.

-Ali Salman Mal Allah - The Role of the Interest Rate and the Foreign Exchange Rate in the Movement of International Financial Flows - Master Thesis - College of Administration and Economics - University of Baghdad - 2008.

-Falah Hussein Karim - The Role of Monetary Policy in Stabilizing the Exchange Rate - Master Thesis - College of Administration and Economics - University of Baghdad - 2010.

-Falih Hassan Khalaf - International Finance - First Edition - Al-Warraq for Publishing and Distribution - Jordan - 2004.

-Fouad Morsi - International Economic Relations - Second Edition - Dar Al-Maaref Printing - Cairo - 1958.

-Laila Bedoui Khudair - exchange rate movements in light of trade liberalization in selected Arab countries for the period (1984-2006) - Master Thesis - College of Administration and Economics - University of Kufa - 2009.
Mohamed Abdel-Aziz Agamia, Medhat Mahmoud El-Akkad - Money, Banking and International Economic Relations - First Edition - Beirut - 1979.
-Mahmoud Sayed Abed - International Trade - First Edition - Technical Radiation Printing - Alexandria - 2001, p. 322.
-Hammam Al-Shamaa, Omar Hisham Al-Omari - The Impact of Multiple Exchange Rates on the Efficiency of Economic Activity - First Edition - Bayt Al-Hikma - Baghdad - 2002.
-Hoshyar Maarouf - Macroeconomic Analysis - Safaa House for Publishing and Distribution - Jordan - 2005.
-Walid Idi AbdelNabi - Balance of Payments as a Tool in Economic Analysis - Central Bank of Algeria - General Directorate of Statistics and Research, 2011.