The equilibrium exchange rate of the Algerian dinar against the US dollar

سعر الصرف التوازني للدينار الجزائري مقابل الدولار الأمريكي

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Abstract: The Economic balance is an essential goal that all countries seek to achieve, and certainly to achieve this goal it must be done with the consideration of international economic interactions especially at the moment, and when talking about the balance economic indicators in the light of these interactions, the stability of the exchange rate is an important indicator reflecting the stability of the rest of the economic indicators as a whole, and this is the main link between the domestic economy and the international economy, therefore the monetary authorities try to control it and maintain its balance, Within this framework, the aim of this study is to try to build a model for the Exchange rate equilibrium of the Algerian dinar against the US dollar based on the ppp theory.

Keys words: Exchange rate equilibrium, general price level, Purchasing power parity (PPP), Algerian dinar exchange rate

JEL classification codes: F30 , F31.

ملخص:

يشكل التوازن الاقتصادي هدفا اساسيا تسعى الى تحقيقه جميع الدول، ومن المؤكد ان بلوغ هذا الهدف لابد ان يتم مع مرعاة التفاعلات الاقتصادية الدولية خصوصا في الوقت الحالي، وعند الحديث توازن المؤشرات الاقتصادية في ظل هذه التفاعلات، فان استقرار سعر الصرف يعتبر مؤشرا مهما يعكس مدى استقرار باقي المؤشرات الاقتصادية ككل، وهذا باعتباره الرابط الأساسي بين الاقتصاد المحلي والاقتصاد الدولي، لدى تسعى السلطات النقدية الى محاولة ضبطه و الحفاظ على توازنه، ضمن هذا الإطار تهدف هذه الدراسة إلى محاولة بناء نموذج لسعر الصرف التوازني للدينار الجزائري مقابل الدولار الأمريكي استنادا إلى نظرية تعادل القوى الشرائية.

الكلمات المفتاحية: **سعر صرف توازني، نظرية تعادل القوى الشرائية، مستوى عام للأسعار، سعر صرف الدينار الجزائري.**

تصنيف JEL: F30 , F31.

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-Introduction :

Achieving economic balance and stability always has been a key objective of the economic policy supervisors of any country, and the exchange rate is one of the most important tools used to achieve this goal.

This is due to the important role that exchange rates play in influencing other economic variables, especially in light of developments in the international economic arena, The exchange rate serves as a link between domestic and global economies and an important economic indicator reflecting the country's

economic situation, When the monetary authorities in different countries aim to maintain the balance of their exchange rates within the pursuit of economic stability in general, Especially after the collapse of the golden monetary system and the struggle that faced the countries which are in trouble re-evaluating their commissions.

As for the Algerian economy, where exchange rate policy has seen many attempts to reduce the gap between the nominal value and the real value of the Algerian dinar exchange rate, Especially in light of many developments, the most important of which is the oil crisis of 1986 and The reforms that influenced the banking system in 1990, when the dinar exchange rate system underwent a radical shift from a fixed exchange system to a managed floating exchange system. Based on the above the following question can be asked:

Can a model of the Algerian dinar's balanced exchange rate against the US dollar be built during the period 1990/2018 based on the PPP theory?

The theoretical part of the study: the equilibrium exchange rate literature

I-Exchange rate equilibrium:

The economic balance is defined as the economic and financial situation in which macroeconomic or partial forces are equal or both , This occurs with the availability of conditions and conditions specified in the national economy that prevent any disruption that lasts or Shortens its duration (Matar M. , 2008, p. 28).

And according to Bergsten & Williamson There are three concepts of exchange rate equilibrium (Hajeer , 2010, p. 51) :

- The market exchange rate that ensures a balance between supply and demand without the intervention of any factor and this idea is found in the monetary models and it comes with the nominal exchange rate,

- The normal equilibrium exchange rate is proportional to the rates resulting from the equivalent market, and it returns in certain models to the variables of major economies.

-The intrinsic equilibrium exchange rate refers to Devaluation by increase and decrease.

According to the foregoing, the equilibrium exchange rate is closely related to the overall economic balance and is only achieved in an economy that grows in a stable manner, especially with regard to the balance of payments, In order to determine the equilibrium exchange rate, the factors affecting the exchange rate must be controlled to maintain its equilibrium level, in order to determine the equilibrium exchange rate, the factors affecting the exchange rate must be

controlled to maintain its equilibrium level, we refer to that the internal balance requires an equilibrium in the commodity market and the labor market in the short and long terms, which is supposed to exist with the achievement of the unemployment rate that does not lead to acceleration of inflation, while the external balance requires that the value of the current and future current account be equal with the expected capital flows in the long term.

I-1- Measuring the equilibrium exchange rate:

There are several methods used to Measuring the equilibrium exchange rate notable among them is the Purchasing-Power Parity model Which is based on the difference between the level of domestic and international prices (Domestic and external inflation) If domestic inflation is higher than external inflation, while other things remain the same, in this case, the exchange rate will decrease, And according to purchasing power parity theory this difference is the main reason for fluctuation in the exchange rate, Accordingly, the equilibrium exchange rate can be defined according to theory of purchasing power parity in any year in relation to the equilibrium exchange rate in the base year as follows :

$$e^* = e_0^* \times \left(\frac{P/P_0}{P^*/P_0^*} \right) \dots \dots \dots \dots (01)$$

-Where (P0 *, P0) foreign and domestic prices respectively in the base year, e0 * the equilibrium exchange rate in the base year, the base year is the year in which the official rate is equivalent to the equilibrium rate.
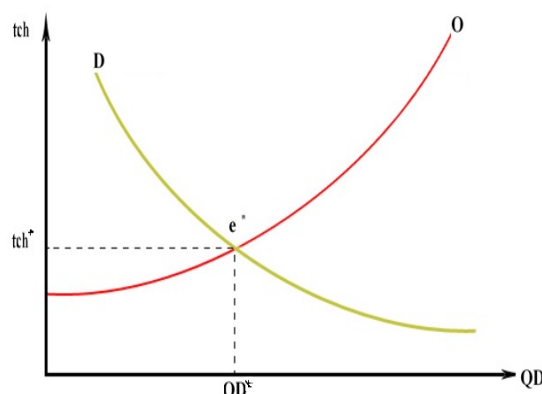
I-2-Determine the equilibrium exchange rate:

Economists are very interested in setting the equilibrium level of the exchange rate, which is commensurate with the macroeconomic balance in an environment characterized by relative stability, this is in order to explain its movement and evaluate the economic policies adopted in a country, especially when its economy is exposed to monetary shocks which causes the real exchange rate to deviate from its equilibrium level(e^*) (Yves & Delphine , 2005, p. 157).

The fixed exchange system is balanced by the administrative intervention of the monetary authority using one of the exchange rate policy instruments to maintain the e* exchange level and avoid it reaching it again to another level e* and stability is achieved in the exchange rate by the state, by reducing the demand for foreign currency and thus balancing the demand for and supply of foreign currency. As for the free exchange system, the equilibrium exchange rate is determined according to the exchange market mechanisms (Hajjar , 2009, p. 34)

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the equilibrium exchange rate in the various exchange systems followed in the countries is determined to the intersection of the forces of demand and the forces of supply, as shown in Figure (01):

It is noticed from Figure No. (01) that the equilibrium exchange rate (e*) is achieved through the intersection of both the forces of supply and demand at the (tch*) level, which represents the real exchange rate, and what is worth to mention is that this rate is not easily reached, but through the overlap of many factors that were mentioned previously.

Research indicates that there are many determinants of great importance that can explain the equilibrium exchange rate from the medium to the long term, such as public consumption ratios. financial variables, terms of trade, net foreign assets and productivity, where the influence of these variables periodically as important determinants of the equilibrium exchange rate (Ronald & Jerome , 1999, p. 17)

II-<u>purchasing power parity theory and its interpretation of the equilibrium exchange rate:</u>

Despite the multiplicity of theories explaining the exchange rate, the purchasing power parity theory is the first theoretical basis that tried to provide an explanation for determining exchange rates.

<u>II-1- Purchasing power parity theory:</u>

This theory goes back to the Swedish economist "Gustav Cassel" when he published his book "Money and Foreign Exchange Rates" after 1914.

The purchasing power parity theory stems from the fact that the exchange rate in national regimes not based on gold depends mainly on the purchasing power of each of the local currencies within their countries. That is, the external values of currencies are determined by the proportions between them and their internal value, this theory links the prevailing domestic prices in two countries to the level of their exchange rates, consequently, the change in the currency value

follows the change in the ratio of internal to external prices, in other words the rates of change in the inflation rate in the two countries (Al- Haythami & Al-Munajjid , 2007, p. 123), accordingly, the purchasing power parity theory is based on the idea that the exchange rate of two currencies is a reflection of the general level of prices in each of the two currencies' countries (Dominick , 2008, p. 254)

It can be expressed mathematically by the following equation, which expresses the absolute formula of purchasing power parity theory as follows:

$$\frac{CC_1}{CC_0} = \frac{P_D}{P_F} \dots \dots \dots \dots (02)$$

Where: CC_0: spot price of the currency at time 0, CC_1: the expected spot price at time 1, P_F:Price index outside the country, P_D: **Price index within the country**.

It is clear that Cassel focused on influences on the relationship between the two currencies through his study of the elasticity of global demand, that is, the extent to which the countries of the world are sensitive to any change, no matter how small, in the export prices of a particular country.

As for the relative formula of this theory, it is concerned with determining the equilibrium exchange rate through the inclusion of the inflation index, where it works nominal exchange rate on the abolition of the differences in inflation in the two countries, and by calculating the change from the previous statement after entering the logarithm, we get :

$$\Delta \log e^* = \Delta \log P_D - \Delta \log P_F \dots \dots \dots \dots (03)$$

Equation (03) shows that the decrease in the nominal exchange rate ratio is equal to the difference in the level of inflation between the country under study and the foreign country, therefore, this formula applies to the principle that countries with a high level of inflation, compared to the countries dealing with them, accept the depreciation of their currency against the currencies of these countries, which affects their trade exchanges.

And this theory is based on the following assumptions (Bunwa & Khayat , 2011, p. 124):

-   It is assumed that there is freedom of foreign exchange between two countries, where the exchange rate between them becomes dependent on what goods and services you can acquire in the currency of each of them.

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- The parity rate between two currencies is determined when the purchasing power of each country's currency in its internal market equals its purchasing power in another country.
- The theory assumes that in the event that the economy of a country suffers from inflation and its purchasing power decreases, the value of the second country will also decrease in the same proportion and the same if the prices rise.
- The theory of purchasing power parity has two interpretations, as it is originally a theory for determining the exchange rate, but now it is used to compare living standards between countries.

II-2-Empirical *analysis* of the equilibrium exchange rate

The aim of these approaches that study the equilibrium exchange rate is not to predict the exchange rate in the long run rather, its goal is to analyze the true evaluation of the currency, whether it is undervalued or overvalued, it also provides an explanation of the disturbances and misalignment in the exchange rate from one period to the next (Raymond, n.d.).

Among the most important empirical analyzes of the exchange rate we find:

❖ **Behavioral equilibrium exchange rate analysis**:

Based on the analysis of Clark and MacDonald, the exchange rate can be analyzed through a set of explanatory variables according to the following equation:

$$e_t = \beta' z_t + \theta' T_t + \varepsilon_t \ldots\ldots\ldots (04)$$

Where: e_t the exchange rate in terms of time, z_t economic variables that are expected to affect the exchange rate in the short and long terms, T_t the trend of the main factors affecting the movements of the exchange rate, taking into account the time factor (Driver & Westaway, 2004, p. 11)

This model is based on a set of basic variables that affect the equilibrium exchange rate in the long and short term (foreign trade exchange, oil prices, net foreign assets, unemployment rate ...) and then search for a relationship between them.

❖ **The primary equilibrium real exchange rate Williamson(1983)**

This theory was formulated in 1983, when there were very important imbalances in currency rates, which led to the proposal of an analytical method for evaluating and estimating areas of equilibrium exchange, which had several advantages in terms of the strategic needs of the most developed countries (Dominique, 1998, p. 53).

This analysis relies on two main components, the two are the complete production which is determined by studying the relationship between unemployment rates and economic growth, and the local current account it is a

set of variables, the most important of which are local production, external production, and the real exchange rate, Whereas, the use of these two variables in a multi-model allows determining the levels of the equilibrium exchange rate that facilitate all economies to achieve their internal balances.

An equilibrium exchange rate analysis.

❖ **Edward's interpretation of the equilibrium exchange rate (1994)**

Edward focuses on the ratio of traded goods to non-tradable goods when looking for an equilibrium exchange rate, in the case of achieving the balance of some variables in the long run such as: international prices, taxes, capital flows and technology, this will lead to an internal and external balance at the same time.

The internal equilibrium also requires an equilibrium in the commodity market and the labor market in the short and long terms, which is supposed to exist with the achievement of the unemployment rate that does not lead to the acceleration of inflation, whereas the external equilibrium requires equal current and future current account value with expected long-term capital inflows.

II-3-Factors determining the equilibrium exchange rate:

By presenting the concepts of the equilibrium exchange rate and the various theories and experimental approaches of the equilibrium exchange rate, it is possible to distinguish between two groups of factors affecting it as follows:

- The first group: It has an effect on the equilibrium exchange rate in the long run, and we mention the exchange rate, the gross domestic product, the volume of foreign investment, the general level of prices, differences between international and local interest rates, a change in the exchange reserve.

- The second group: includes the effect of monetary policy represented by the ratio of loans to GDP, the effect of fiscal policy represented by the ratio of government bonds to GDP, the real exchange rate, and these variables have an impact in the short term on the exchange rate balance.

-The applied part of the study: **etermining the equilibrium exchange rate of the Algerian dinar against the US dollar**

The exchange rate of the Algerian dinar has witnessed many changes imposed by developments in the Algerian economy and even the global economy as a whole, this is necessarily reflected in the real value of the Algerian dinar, which is linked to the US dollar through exports.

I-The development of the Algerian dinar exchange rate:

The Algerian economy has gone through many crises, the most important of which is the 1986 crisis, as a result of the collapse of oil prices, which negatively affected the economic stability, which forced Algeria to reconsider the adopted economic system and the necessity of introducing radical reforms to gradually move towards a market economy.

The year 1990 was considered a decisive turning point in the development of the Algerian economy, especially after the issuance of Law 90-10 related to money and loans.

Which gave independence to the central bank with reconsidering the formulation of the functions of the public treasury as an important step, The drainage system at this stage was also distinguished by its gradual slip policy, as the exchange system in this policy consists of two parts, one part works with a fixed exchange system and the other part works with a managed floating exchange system, and the purpose of this is to re-evaluate the Algerian dinar and bring it closer to its real value, which achieves an internal and external balance (Bank of Algeria, 2008, 2012, 2013).

The exchange system also witnessed developments when the interbank exchange market was created on January 02, 1996, and it is the market in which transactions are made in hard currencies, in which the Bank of Algeria and commercial banks are active, this is within the framework of the floating exchange system managed by the Central Bank and linked to the US dollar, given that most of Algeria's exports are valued in dollars, and this system is still approved.

II-The equilibrium exchange rate model for the Algerian dinar against the US dollar:

II-1-The model of study:

This study aims to attempt to construct a standard model for an equilibrium exchange rate of the Algerian dinar against the US dollar, this is based on the application of purchasing power theory, this is based on quarterly data for the period from 1990 to 2018, which are time series for the equilibrium exchange rate of the dinar (TCH *) and the consumer price index (IPC).

This selected period is very important in the development of the Algerian economy because it is the period after the application of the loan and cash law, and the Algerian economy has witnessed radical transformations with the beginning of this period as an attempt to integrate with the international economy, and that is through the structural adjustment imposed on it by the FMI, which particularly affected the exchange rate policy adopted at the time.

To achieve the objective of the study, a measurable model was built according to the economic theory referred to in the theoretical part as follows:

$$TCH^* = f(IPC)............(05)$$

In winch:

$$TCH^* = c_1 + c_2 IPC + \varepsilon_i ....(06)$$

Where the dependent variable is (TCH *): it represents the equilibrium exchange rate, it represents the official exchange rate offered by the Bank of Algeria through its reports. It is the desired rate by the monetary authority in the country that it deems appropriate to maintain the balance of monetary indicators, we'll use it as the equilibrium exchange rate in this model.

The (independent) interpreted variables (IPC): consumer price index, it is an economic and social indicator, it measures changes in the general level of prices for consumer goods and services that households obtain, use, or pay for their consumption

The index aims to measure the change over time in consumer prices by measuring the cost of purchasing a specific basket of consumer goods and services, during a specific period of time, and the consumer price index in Algeria is calculated as follows according to the National Bureau of Statistics:

- The population reference category consists of all Algerian families, of all sizes and social and professional categories

- The index consists of 261 indicator and is represented by 791 categories, then they are selected on the basis of criteria such as annual expenditures items, their frequency.

This indicator takes the following mathematical formula:

$$I_{m/2001} = \sum_i (w_i / \sum_i w_i)(P_i^m / P_i^{2001})...........(07)$$

-wi = weight of variety i
- Pmi = average current price in month m of variety i
- P2001i = basic price (average in 2001) of variety i

The national index was developed using the same approach to monitor prices from a sample of 17 cities and villages on the national territory distributed according to geographical strata through the Consumer Expenditure Survey.

- (c_1, c_2) model parameters, ε_i random error.

The estimation of model (06) for the equilibrium exchange rate of the Algerian dinar will be based on the regular least squares "LOS" method which is considered one of the best methods for estimating model parameters and the most widely used in such studies (Al-Baldawi , 1997, p. 506)

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    -Time series analysis of the study developments in the exchange rates and the consumer price index in Algeria.
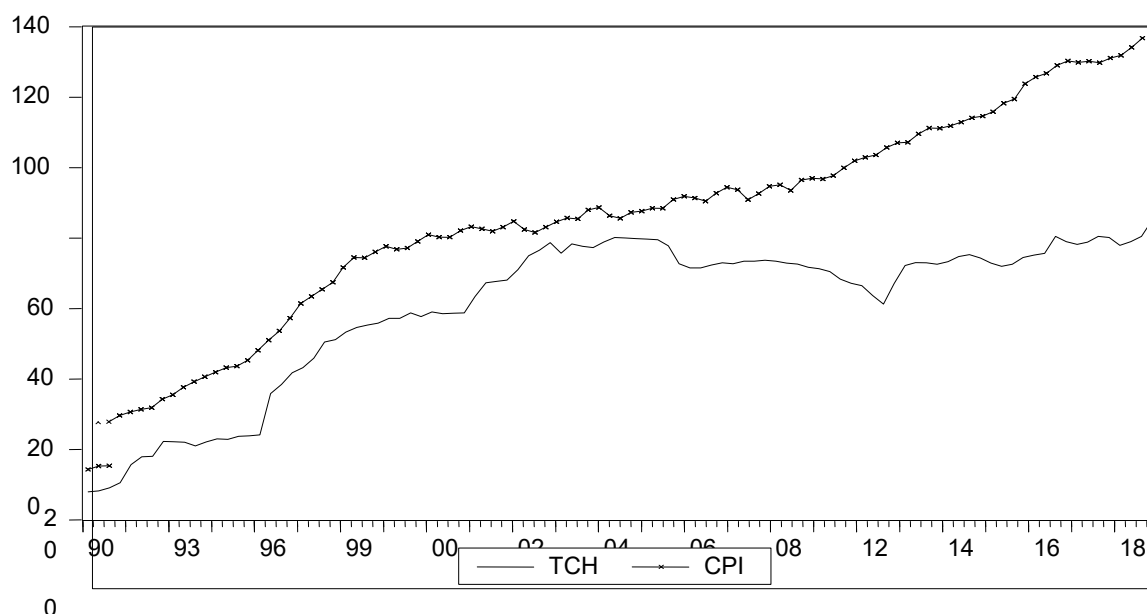

Figure (02) represents the graph of the quarterly developments of exchange rates TCH * and the IPC consumer price index in Algeria during the period (1990/2019), as both series are experiencing escalating changes generally from year to year, the mean value of TCH * was 60.47 and a standard deviation of 21.58, while the average IPC reached an estimated value of 72.60, with a standard deviation of 29.02 It is greater than the standard deviation of TCH * indicating the dispersion of the two string values, the following table shows some of the statistical characteristics of the central tendency and measures of dispersion as follows:

Table (01): The statistical properties of the two chains TCH and IPC

Pointer	CPI	TCH	the year
the mean value	72.60476	60.47872	
Mediator	74.97300	71.50400	
Great value	124.2260	85.07700	Part 1, 1990
Minimum value	14.33400	7.990000	Part 4, 2014
Standard deviation	29.02756	21.58618	

Source: Prepared by researchers based on EViews

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The linear correlation matrix also indicates the existence of a strong relationship between the two variables, as the correlational strength reached an estimated rate of 89.53%.

$$R = \begin{pmatrix} r_{tchtch} & r_{tchipc} \\ r_{ipdtch} & r_{ipdipc} \end{pmatrix} \Leftrightarrow \begin{pmatrix} 1 & 0.8953 \\ 0.8953 & 1 \end{pmatrix} \ldots\ldots(08)$$

As a preliminary picture, it can be placed through Figure (01) for the graphic representation of the study variables and statistical analysis that the two series of variables TCH * and IPC includes general direction vehicle for the duration of the study May lead to false regression when estimating the model so it will be tested by the ADF root test.

II-2- Model estimation:

After inserting the data into Eviews and using the least squares method of estimating, the model can be written as follows:

$$Tch^* = 12.138 + 0.665\,IPC + \varepsilon_i \ldots..(09)$$

The significance of the model parameters is tested by a t-statistic test, and the overall significance of the model is tested by F-statistic.

1.3 Unit Root Test:

In order to test the stativity of the time series, the "Augmented Dickey-Fuller" test, abbreviated as "ADF," was used, which is based on three models as follows (Lahiri, 2009, p. 161):

Model 1 Without constant nor general direction	$\Delta Y_t = \lambda Y_{t-1} - \sum \phi_J \overset{P}{\nabla} Y_{T-J+1} + \varepsilon_t$
Model (2): constant existence without general direction	$\Delta Y_t = \lambda Y_{t-1} + \sum \phi_J \overset{P}{\nabla} Y_{T-J+1} + c + \varepsilon_t$
Model 3: With a constant presence and a general trend	$\Delta Y_t = \lambda Y_{t-1} + \sum \phi_J \overset{P}{\nabla} Y_{T-J+1} + c + bt + \varepsilon_t$

-Where Y_{t-1}, Y_t ,variable: Y at moment t and previous moment t-1, respectively.

- C: The regression equation constant

-λ: coefficient of the regression equation.

- φ:Self-regression parameter.

-b :General trend coefficient.

- P : The number of time lag differences can be obtained according to the Akaike criterion.

- $\sum \nabla Y_{t-j+1}$:Time gap differences, and the latter are inserted until the problem of self-correlation disappears.

- ε_t: Random error.

The (ADF) test relies on the statistic (τ) of the autoregressive equation coefficient for the following hypothesis:

- The null hypothesis) :H_0 :[b=0, λ=0, ϕ=1, c=0]; there is a unit root Any variable string is unstable.

- Alternative hypothesis :H_1 :[b$\neq$0, λ<0, ϕ<1, c$\neq$0] ; stable variable series.

   If it is valuable (τ_{cal}) the calculated value is greater than the value (τ_{tab}) tabular, we accept the null hypothesis H_0 which states that the time series is unstable and we reject the alternative hypothesis H_1, and so on if it was the opposite.

II-3-Simultaneous integration:

   Researchers "Granger(1983) " and "Engle " (1983) "are the first to develop this technique, and based on the validity of the hypothesis of stability of time series for variables, which is a series whose levels change with time without changing the average in it over a relatively long period of time, that is there is no general trend, neither towards increase nor towards decrease, it is the link of a group of variables of the same degree or of different degrees, so that this linking leads to the formation of an integrated linear combination of order less or equal to the smallest rank of the variables used.

   And the method of simultaneous integration implies that if we have two variables x_tو y_t integrated of the first degree i.e. stable after their first degree differentiation according to the following formula:

-(x_t): Integrated time series of the class (d) :that $\quad x_t \to I(d)$

- (y_t): Integrated time series of the class (b)) :that $\quad y_t \to I(b)$

The sum of the two strings it is integrated with a lower degree of integration as follows:

$$\begin{cases} x_t \to I(d) \\ y_t \to I(b) \end{cases} \Rightarrow \alpha_1 x_t + \alpha_2 y_t \to I(d-b)........(10)$$

$$d \geq b \geq 0$$

   This is in two stages:

-The first step: determining the degree of complementarity of the two variables, the necessary condition for integration is that the two strings must be integration of the same degree, that is, the two strings are stable at the same time difference

resulting from a test "ADF." but if they are not integration of the same degree, this means that they do not achieve the property of simultaneous integration.

- The second step: assessing the long-term relationship:if the first condition is met, then the long-term relationship should be estimated among the variables by the method of regular least squares (OLS), so that the linear combination of the two series allows one to get a series from a lower degree of integration (Series residual εi).

- Results and discussion:

Table No. (02) summarizes the time-series stability test for the study variables using a tester «Augmented Dickey-Fuller» which is one of the best methods for that, as well as determining the degree of integration of the variables as follows

(ADF) Statistiques de test «Uint Root»									
Series variable	**The original series**			τ_{cal}	**The first difference**			τ_{cal}
	significant limit				**significant limit**			
	10%	**5%**	1%		10%	**5%**	1%	
TCH[*]	-3,498	**-2,891**	-2,582	**-2,618**	-2,582	**-2,891**	-3,498	**-7,335**
IPC	-2,583	**-2,893**	-3,503	**-0,932**	-2,583	**-2,891**	-3,499	**-3,981**

Source: Prepared by researchers based on Eviews.

-Notice: the chain **series** IPC in the first model, with a two-time delay (02), as for the rest of the information recorded in Table (02), it indicates the test in the third form.

And we conclude from the above table The TCH * string and IPC string used for the estimation contain the unit root, that is, it is not stable in the general level, that's where the values of (τ_{cal}) the calculated is greater of critical values at a significant level (01%,05%,10%) accept the hypothesis H_0 and taking the first differences for the two variables used in the estimate it turns out that all of them have become stable, that is it does not contain the unit root, that's where the values of (τ_{cal}) calculated less of critical values at a significant level (01%,05%,10%) and then the variables are integrated of the first order, and so we move on to the second step related to studying the stability of residues.

After estimating the long-term relationship between the two variables through the model (08-02) the residual series is obtained and its stability is tested with a

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test «ADF», Table (02-03) displays the outputs of the residual series stability as follows.

Table (03): Residual Serie stability test results

(ADF) Statistiques de test «Uint Root»				
Series variable	**significant limit**			τ_{cal}
	حد المعنوية			
	01%	**05%**	10%	
RESID	-3,498	**-2,891**	-2,582	**-1,660**

Source: Prepared by researchers based on Eviews.

We deduce from the table(03) the residual chain is not stable at the general level As the values (τ_{cal}) greater than critical values at a significant level (01%, 05%, 10) thus we accept the hypothesis H_0, which states the existence of the unit root That is, the residual Series is not stable in the general level, with these results, the simultaneous integration according "Granger" و "Engle" its second condition of the time series resulting from this linear combination (residuals) was not met, as it was not stable to a degree less than the degree of stability of the two variables from it can be judged that there is no long-term equilibrium relationship between the equilibrium exchange rate of the dinar (TCH*) and the consumer price index (IPC) in Algeria.

consequently, the purchasing power parity theory does not apply its assumptions to the Algerian economy it cannot be relied upon to track the behavior of the equilibrium exchange rate of the Algerian dinar.

Conclusion:

The exchange rate occupies an important place within the economic indicators in Algeria, and it is receiving great attention from the monetary authorities and despite all this, it remains

the exchange rate of the Algerian dinar is far from the equilibrium zone against the US dollar based on the purchasing power parity theory during the study period, and as the purchasing power parity theory is related at the general price level that knows a great disturbance refer to the nature of the Algerian economy which is witnessing a continuous rise in inflation rates since independence, with taking into consideration the state's efforts to support the prices of essential commodities which affects the stability of the exchange rate linked to the dollar through petroleum prices it is Algeria's main export and with the recent oil crisis, it will certainly affect the balance of the exchange rate the central bank

lowered the Algerian dinar exchange rate several times at the beginning of 2015 equivalent to 25% against the US dollar.

After taking a comprehensive look at the subject of the study and trying to answer the main problematic through this research paper it is possible to develop a comprehensive grasp in the following points:

- It is difficult to determine a specific value for the equilibrium exchange rate this is due to the assumption that the economy it is in a fully functional state this assumption cannot be fulfilled in fact.
- The consumer price index reached a high level in Algeria especially in the last five years caused by the weakness of the productive system and not to diversify its which reflected negatively on the purchasing power of the national currency.
- Although the consumer price index affects the equilibrium exchange rate of the Algerian dinar the change in it is explained by a large percentage of 79.95% however, this remains valid only in the short term and that purchasing power parity theory it cannot be realized in such circumstances and the current data especially since the Algerian dinar is still determined administratively and is not subject to the forces of supply and demand
- Algeria did not achieve the goals it was seeking that she was striving for through a policy of reducing the exchange rate especially with regard to the balance of the economy rather, this policy had negative consequences on the purchasing power of the Algerian dinar which increased its deterioration and lower its value in relation to foreign currencies.

As a comprehensive conclusion, the purchasing power parity theory did not fulfill its hypotheses concerning setting the equilibrium exchange rate in Algeria during the study period especially in light of the global economy today and the great interaction between the various economic entities within what is termed financial globalization which justifies the difference in the results of testing the validity of this theory.

And so, the Algerian authorities can from reaching the equilibrium exchange rate this relates to the potential for real economic diversification in the sources of national income this results in an increase in the demand for the national currency, and thus will positively affect the purchasing power of the Algerian dinar.

Title: The equilibrium exchange rate of the Algerian dinar against the US dollar

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