Exchange Rate Pass-Through to Consumer Prices: An Econometric Study of Algerian Economy Over the Period 1990- 2025

حساسية المستوى العام للأسعار لتقلبات سعر الصرف–دراسة قياسية على الاقتصاد الجزائري خلال الفترة 1990–2025

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Abstract:

This study investigates the transmission of exchange rate fluctuations to domestic price levelscommonly referred to as exchange rate pass-throughwithin the Algerian economy over the period 1990–2025. Employing both descriptive and analytical frameworks, the research systematically examines the behavior of key macroeconomic variables. Empirical analysis is conducted using statistical and econometric methods, with particular reliance on the Autoregressive Distributed Lag (ARDL) model to estimate the effect of changes in the Algerian dinar exchange rate on the Consumer Price Index (CPI). The results reveal a significant long-run positive relationship between inflation and the explanatory variables considered. Notably, the import unit value index and the nominal effective exchange rate emerge as the most influential determinants of inflationary pressures in Algeria, surpassing the impact of other factors.

Keywords: Exchange rate; Inflation; Exchange rate pass-through; Algerian economy; ARDL model.

JELClassificationCodes:E31, F31, C32, O53.

ملخص:

هدفت هذه الدراسة الى تتبع أثر انتقال تقلبات أسعار الصرف الى المستويات العامة للأسعار، في الاقتصاد الجزائري خلال الفترة (1990– 2025)، وللإجابة على الإشكالية الرئيسية والفرضيات المطروحة تم الاعتماد على المنهجين الوصفي والتحليلي في الجانب النظري للدراسة، وتم استخدام أدوات

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التحليل الاحصائي والقياس الاقتصادي في الجانب التطبيقي لها، من خلال تطبيق نموذج الانحدار الذاتي للإبطاء الموزع ARDLلقياس وتقدير تأثير انعكاس تقلبات سعر صرف الدينار الجزائري على مؤشر أسعار الاستهلاك خلال الفترة (1990 -2025)، وتوصلت الدراسة الى جملة من النتائج أهمها: أنّه يوجد استجابة طويلة الأجل طردية بين متغير التضخم وجميع المتغيرات المستّقلة المدرجة في النموذج، وأنّ ّمؤشر قيمة الوحدة من الواردات ومؤشر سعر الصرف الفعلي الاسمي هما الأكثر أهمية في تفسّير حجم الضغوط التضخمية في الاقتصاد الجزائري مقارنة ببقية العوامل.

كلمات مفتاحية: سعر الصرف، تضخم، حساسية الأسعار لتقلبات سعر الصرف، الاقتصاد الجزائري، نموذج ARDL

تصنيفاتJEL: E31، F31، C32، O53.

1. INTRODUCTION

Exchange rate fluctuations represent a key determinant of macroeconomic stability, particularly in open economies that rely heavily on imports. Changes in the exchange rate are transmitted to the domestic economy through several channels, most notably their impact on the general price level—a mechanism commonly referred to as exchange rate pass-through to inflation. The magnitude of this transmission varies according to structural characteristics such as trade openness, the composition of imports, and the prevailing exchange rate regime.

The Algerian economy constitutes a relevant case study in this regard, given its significant dependence on hydrocarbon revenues to finance imports and the notable movements in the Algerian dinar alongside varying inflation trends during the period 1990–2025.

Accordingly, this study aims to assess the sensitivity of the general price level to exchange rate fluctuations in Algeria over the specified period, employing an econometric approach capable of estimating both short-run and long-run effects. The findings are expected to provide valuable insights for policymakers concerned with inflation control and macroeconomic stability.

1.2. Research Problem:

In light of the increasing exposure of the Algerian economy to external shocks and its structural reliance on imports to meet consumption and production needs, the transmission of exchange rate fluctuations to the general price level emerges as a central issue in analyzing inflation dynamics. Over the period 1990–2025, Algeria experienced significant adjustments in its exchange rate regime and notable fluctuations in the

value of the Algerian dinar, accompanied by variations in inflation rates and overall price levels.

Accordingly, the core research question of this study can be formulated as follows:

To what extent does the general price level in Algeria respond to exchange rate fluctuations during the period 1990–2025?

1.2. Research Hypotheses:

Drawing on the theoretical and empirical literature on exchange rate pass-through, the study proposes the following hypotheses:

- **H0:** There is no statistically significant long-run equilibrium relationship between exchange rate fluctuations and the general price level in Algeria during the period 1990–2025.
- **H1:** There is a statistically significant long-run equilibrium relationship between exchange rate fluctuations and the general price level in Algeria during the period 1990–2025.

1.3. Study Objectives:

This study aims to achieve a set of scientific and practical objectives, which can be summarized as follows:

- Analyze the theoretical framework of exchange rate pass-through to the general price level, highlighting the main channels through which the effect is transmitted in open economies.
- Measure the sensitivity of the general price level in Algeria to exchange rate fluctuations over the period 1990–2025, using an econometric model appropriate for the nature of time series data.
- Test the existence of a long-run equilibrium relationship between the exchange rate and the general price level using the cointegration approach within the ARDL framework.

1.4. Study Significance:

This study derives its significance from several theoretical and practical considerations, which can be summarized as follows:

- The study contributes to the economic literature on exchange rate pass-through, particularly in the context of developing and resource-dependent economies, which have received limited empirical attention.
- The study employs the ARDL model, which is suitable for analyzing dynamic relationships between variables with different integration orders, providing more accurate and reliable results.

- Identifying the degree of price sensitivity to exchange rate fluctuations enables policymakers to design more effective monetary and exchange rate policies to mitigate external shocks.

1.5. Study Methodology:

To achieve the study objectives and address the research problem, the descriptive approach was initially employed in the theoretical framework to present the key concepts related to inflation, exchange rates, and the sensitivity of the general price level to exchange rate fluctuations (Exchange Rate Pass-Through). The analytical approach was then used to examine and interpret the evolution of inflationary behavior over time. In addition, statistical and econometric tools were utilized, specifically the Autoregressive Distributed Lag (ARDL) model, to measure and estimate the impact of fluctuations in the Algerian dinar exchange rate on the Consumer Price Index (CPI) over the period 1990–2025.

2. The theoretical framework of the study

2.1. Inflation and Exchange Rate in Economic Literature

Inflation and the exchange rate constitute central pillars of economies at different levels of development. Monetary and consequently economic stability largely depends on maintaining both currency value stability and stability in the general price level.

2.1.1. Inflation: Concept and Determinants

Inflation is among the economic phenomena that have generated considerable debate within academic circles, particularly regarding its precise definition and underlying causes. Some scholars associate inflation with excessive increases in the general price level, while others attribute it to rising nominal incomes, such as wages, profits, and production costs. Monetarist economists, however, consider inflation to be fundamentally the inevitable result of excessive monetary expansion. (Ahmed Hussein & et al, 2015, p. 5)

In general terms, inflation is linked to a persistent and widespread increase in the average general price level of goods and services. It is important to note that such increases do not necessarily occur at the same pace across all goods; some prices may rise at varying rates while others remain relatively stable. (Nicholas , 2019, p. 43)

Price stability has long been and continues to be the ultimate objective of monetary authorities, as it supports economic growth and employment generation. To achieve this goal, both theoretical and empirical literature has identified numerous determinants explaining inflationary trends and variations. Inflation may stem from imbalances between aggregate supply

and demand and may be influenced by short- medium- or long-term factors. (Svensson, 1999)

Jean Bodin (1566) was among the earliest scholars to investigate the causes of price increases observed in France during his time, attributing them primarily to the influx of precious metals from the Americas. David Hume later provided one of the first dynamic analyses of the monetary transmission mechanism, explaining how changes in the money supply affect prices through a diffusion process across economic sectors. He argued that if the money supply were to increase fivefold overnight, prices would inevitably rise proportionally. (Bodin, 2000, p. 256)

This perspective was further reinforced by Friedman (1956), who asserted that inflation is fundamentally a monetary phenomenon in the long run, resulting from excessive monetary creation. In the short run, however, price dynamics are also influenced by other determinants, including changes in global supply and demand, fluctuations in commodity prices, technological developments, exchange rate volatility, climatic shocks, insufficient private savings, delays in industrial development, political instability, and governance or institutional weaknesses. (Bank of Algeria, 2022, p. 03)

2.1.2. Exchange Rate: Concept and Determinants

Domestic economic transactions are generally conducted using the national currency. However, since there is no universally adopted international currency except in exceptional cases such as dollarization or monetary union seach country issues its own currency through its central bank to finance transactions. Consequently, international trade in goods and services, as well as capital flows, necessitates currency conversion, thereby introducing the concept of the exchange rate. (Ramli & Derbal, 2016, p. 92)

The exchange rate can be treated as a price determined by the interaction of supply and demand in the foreign exchange market, where one currency represents the commodity and the other its corresponding price. It reflects the prevailing market price of a currency without necessarily accounting for its purchasing power in terms of tradable goods between countries. (Haassan AwdAllah, 2004, p. 44)

The exchange rate may behave differently in the long run compared to the short run and may exhibit substantial volatility depending on market conditions and the exchange rate regime adopted. Nevertheless, monetary authorities can stabilize it through interventions in foreign exchange markets or by centralizing foreign exchange transactions under a single

official institution (the central bank) at a legally determined rate. (Al-Hiti & Al-Khashali, 2008, p. 140)

Currencies are typically subject to continuous fluctuations due to various economic and non-economic determinants. Economic factors include money supply, interest rates, inflation differentials, and balance of payments imbalances. Non-economic factors include rumors, imperfect information, political instability, wars, and economic sanctions. (Zidan Nahal, 2016, pp. 37-43)

3. Theoretical Background of Exchange Rate Pass-Through

3.1. Concept and Types of Exchange Rate Pass-Through

According to Goldberg and Menon (1991), exchange rate pass-through refers to the percentage change in import prices denominated in local currency resulting from a 1% change in the exchange rate between importing and exporting countries. It can also be defined as the relationship between exchange rate movements and adjustments in the prices of traded goods. (Souih & Bentirech, 2020, p. 176)

Exchange rate pass-through generally occurs in two stages: (Zenaki & Hassnaoui, 2018, pp. 218-219)

1. The transmission of exchange rate fluctuations to import prices.
2. The subsequent transmission from import prices to consumer price levels.

Empirical evidence suggests that exchange rate pass-through is not necessarily complete. It may be partial—where only a fraction of exchange rate changes is reflected in tradable goods prices—or even zero, depending on various influencing factors. Partial pass-through may arise under conditions such as:

- The availability of domestic substitutes for imported goods;
- Exporters' pricing strategies aimed at maintaining market share; leading them to absorb part of the exchange rate change by adjusting profit margins;
- Increased global competition and diversified import sources, which limit firms' ability to pass exchange rate changes fully onto prices.

Based on the foregoing discussion, it can be concluded that the sensitivity of the general price level to exchange rate fluctuations is grounded in the "**law of one price**"under conditions of perfect competition. In other words, the exchange rate between the domestic economy (e.g., Algeria) and a foreign economy (e.g., France) should equal the ratio between the prices of a fixed basket of domestic and foreign goods and services. For instance, if the price of good X in Algeria is 120 DZD and its

price in France is €1.2, this implies an exchange rate of 1 DZD = €0.01. If the euro appreciates against the dinar so that the exchange rate becomes 1 DZD = €0.05, assuming that the price of good X in France remains unchanged, the new price of the good in Algeria should rise proportionately to reflect the exchange rate change. In this case, the full effect of the euro appreciation against the dinar would be transmitted to the domestic price of the imported good X. However, if changes in foreign goods prices lead to adjustments in domestic prices at a rate that differs from the magnitude of exchange rate fluctuations between the two currencies, this would indicate that the exchange rate pass-through is incomplete. (Ben Nacer, 2017, pp. 110-111)

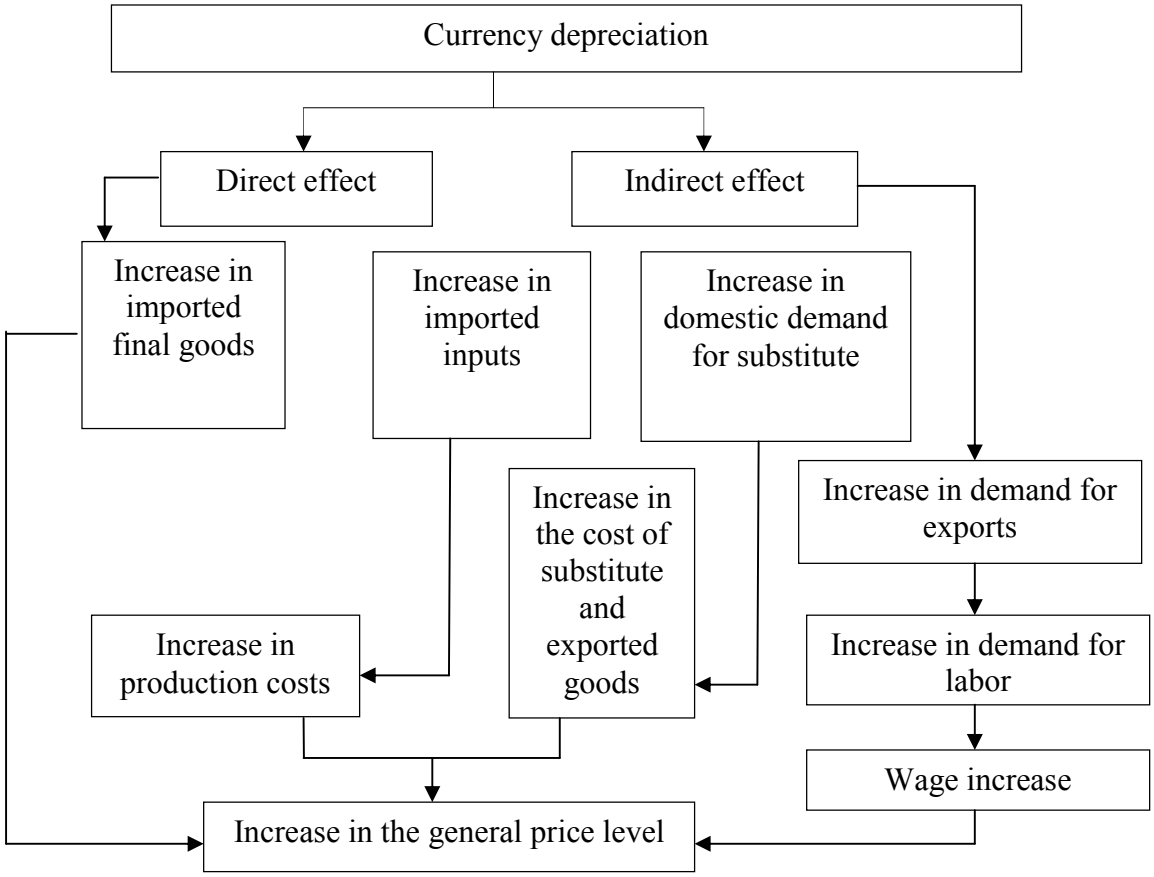
3.2.Channels and Determinants of Exchange Rate Fluctuations Pass-Through to the General Price Level

Exchange rate fluctuations are transmitted to domestic prices through the internal demand channel (the indirect effect). An increase in the prices of imported goods, resulting from a depreciation in the external value of the currency (i.e., an increase in the exchange rate), stimulates greater demand for domestically produced goods that compete with imports. This rising demand generates upward pressure on domestic prices, particularly in the presence of structural rigidities or limited flexibility within the productive system. Furthermore, the expansion in demand for local goods increases the demand for labor, which subsequently leads to higher wages, thereby reinforcing the upward movement in domestic prices. (Boukhari hallo, 2010, p. 338)

In this regard, Hooper & Lowrey (1979) demonstrated that the inflation rate rises by approximately 0.8 to 0.9 percentage points following a 10% currency devaluation, and may remain slightly higher in subsequent years as well. Accordingly, currency devaluation can generate inflationary pressures within the economy that affect aggregate demand, thereby amplifying the overall impact. (Jeannin & Bouakez, 2014, p. 23)

In this context, determining the degree and transmission channels through which exchange rate changes affect domestic prices is of crucial importance, given their implications for inflation rates. Numerous empirical studies have shown that exchange rate movements are often only partially transmitted to domestic prices. (Jeannin & Bouakez, 2014, p. 22)

Fig.1.Exchange Rate Pass-Through to the General Price Level



Source: Znagui Sayed Ahmed and Hosnaoui Mariam (2018), The Impact of the Exchange Rate on Inflation in Emerging Economies, Journal of Monetary and Business Economics, Vol. 2, No. 3, p. 220.

It is worth noting that the degree of pass-through establishes the relationship between exchange rate changes and domestic prices, and it is itself influenced by several factors, including:(Zenaki & Hassnaoui, 2018, pp. 221-223)

- **Market structure and degree of competition in the goods market:** Market power theory "Le pouvoir du marché" assumes that pass-through is only partial. If domestic demand is highly elastic, foreign firms are compelled to absorb exchange rate fluctuations and accept low profit margins to maintain their share of the local market. Conversely, in the case of a non-competitive market structure, non-competitive firms may choose, when the exchange rate falls, to partially or fully absorb the increase in the cost of imported

intermediate goods, thereby reducing the degree of pass-through to consumer prices.

- **Inflationary environment:** Taylor (2000) shows that the degree of pass-through increases with the level of inflation, as producers are more likely to reflect exchange rate changes in their prices in an inflationary environment. When inflation is persistent, producers consider cost increases to be ongoing as well. However, the effect of this pass-through is weak under an effective monetary policy, which, due to its efficiency, helps maintain a low inflation rate and leads producers to expect that negative exchange rate shocks will not persistently affect inflation, and therefore will not be fully transmitted to prices.
- **Economic activity:** During periods of high economic activity, it is easier for producers to pass on the cost increases associated with currency depreciation to their prices, and the opposite holds true during slow periods. However, in some cases, a sharp depreciation of the domestic currency does not lead to higher prices, because if the economy is in a recession, firms do not adjust their prices proportionally to rising costs. (Ait Yahia & Rais, 2017, p. 199)
- **Exchange rate regime:** Under a flexible exchange rate system, a low degree of pass-through helps control inflation, as it provides better protection against external shocks while granting considerable autonomy to monetary policy. In contrast, under a fixed exchange rate regime, any adjustment aimed at stabilizing inflation translates into fluctuations in the level of output. Countries with fixed exchange rate systems are thus more vulnerable to volatility in capital flows.

3.3. Analysis of Inflation Trends in the Algerian Economy during(1990-2025)

As a result of the significant structural imbalances experienced by the Algerian economy during the years of socialism—such as inflationary pressures, an overvalued currency, and increasing public debt—policymakers initiated a series of reforms in the 1990s as part of the transition to a market economy. Among the most notable and important of these reforms was the Money and Credit Law (Law No. 90-10) issued on April 14, 1990, which restored the centrality and role of monetary policy in shaping decision-making. This law reinstated monetary policy as a key

economic management tool, after it had been largely marginalized during the socialist period.

One of the main objectives undertaken by the monetary authorities was to achieve stability in the general price level and to maintain the Algerian dinar close to its equilibrium value. These measures were all aimed at ensuring price stability while promoting rapid economic growth.

Fig.2.Evolution of Inflation Rates in Algeria during the Period (1990–2025)



Source: Prepared by the authors based on World Bank data

The period extending from 1991 to 2000 was characterized by a shift toward price liberalization and the broader transition from a socialist economic model to market-oriented dynamics. During this phase, inflation reached record levels compared to both the preceding and subsequent periods. This surge was primarily attributable to the liberalization of widely consumed goods prices, the removal of subsidies, and the deregulation of domestic and foreign trade through tariff reductions.

In addition, the continued and accelerated gradual depreciation of the Algerian dinar—implemented in compliance with the conditions of the second Stand-By Arrangement (Stand-by 2)—contributed significantly to inflationary pressures. By the end of 1991, the exchange rate had reached 22.5 DZD per US dollar and remained at this level until 1994. Furthermore, the money supply expanded by 21.3% in 1991, compared to 11.3% in 1990, while the growth in gross domestic product did not adequately reflect the scale of monetary expansion, thereby generating inflationary pressures. (Bank of Algeria, 2009)

By 1993, inflation declined to approximately 20.5%, largely due to a slowdown in money supply growth to 15.08% during that year, compared to 21.3% in 1991. However, inflation rose sharply again to 29.7% in 1995 following the explicit devaluation of the Algerian dinar by 40.17%. Moreover, the period 1994–1995 witnessed a marked increase in imports as a share of GDP, rising from 23.13% in 1993 to 26.05% and 28.99% in 1994 and 1995, respectively. This development explains the transmission of dinar depreciation effects to the general price level. (Bank of Algeria, 2009)

During this period, inflation rates exhibited a fluctuating yet generally upward trend compared to earlier years. A notable surge occurred in 2015–2016, largely driven by the oil price shock and the resulting pressures on the Algerian dinar. Inflation then moderated between 2017 and 2019, reflecting relatively tighter monetary management.

In 2020-2021, inflation remained at moderate levels despite the repercussions of the COVID-19 pandemic, mainly due to global supply chain disruptions. From 2022 to 2025, a renewed upward trend emerged, fueled by rising international prices and continued exchange rate pressures, highlighting the sensitivity of the general price level to external shocks and exchange rate fluctuations in the Algerian economy. (Bank of Algeria, 2025).

4. Empirical Analysis of General Price Level Sensitivity to Algerian Dinar Exchange Rate Fluctuations (1990–2025) Using ARDL

In order to examine the sensitivity of the general price level to fluctuations in the Algerian dinar exchange rate, the study utilized the variables presented in the following table, covering the period from 1990 to 2025.

Table 1. Description of the Study Variables

Independent Variables		
Variable Description	**Itssymbol**	**Source of Variables**
Total Government Expenditure (% of GDP)	Gov	World Bank Database
Unit Value Index of Imports (Base Year 2000 = 100)	IUV	World Bank Database
Real Effective Exchange Rate of the Algerian Dinar	NEER	World Bank Database
Dependent Variable		
Variable Description	**Itssymbol**	**Source of Variables**
Inflation Rates (Consumer Price Index – CPI)	INF	World Bank Database

Source: Prepared by the researchers

By taking the natural logarithm of all variables, the model describing the determinants of inflationary performance in Algeria over the long term can be expressed as follows:

$$Ln\,INF = \alpha + \beta 1\,Ln\,(Gov) + \beta 3\,Ln\,(IUV) + \beta 4\,Ln\,(NEER) + \square t$$

Table 2. ADF Test Results for Time Series Stationarity at the 5% Significance Level

Variables	ADF				
	At Level	P-Val	At First Difference	P-Val	Order of Integration
LINF	-1.5149* -2.9697 **	0.5348	-3.1736 -2.9604	0.0004	I(1)
LGov	0.9604 - -2.9540	0.3020	4.0050- -2.9571	0.0055	I(1)
LIUV	-1.1429 -2.9557	0.8722	-4.5534 -2.9571	0.0323	I(1)
LNEER	-1.5238 -2.1917	0.1463	-6.5318 -2.9604	0.0000	I(1)

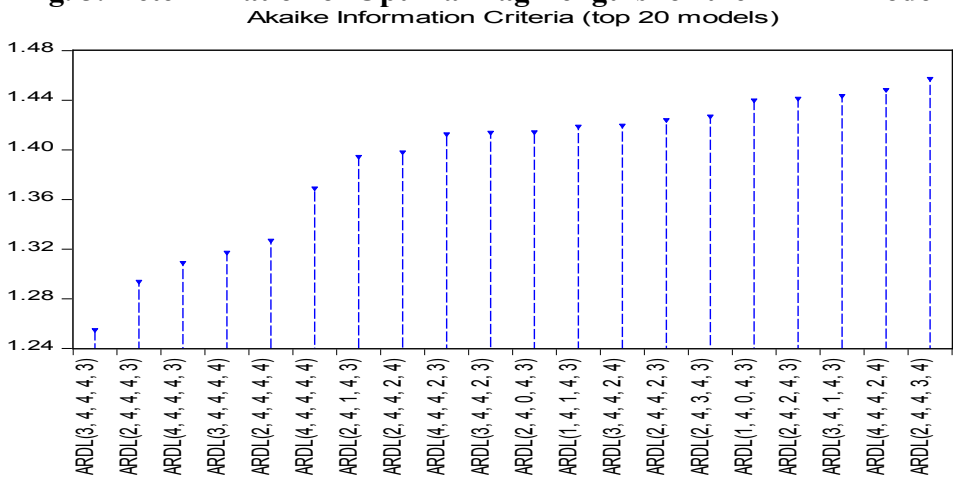
Source: Prepared by the researchers based on EViews 10 output

4.1. Time Series Stationarity Analysis; To verify the stationarity of the variables under study, a unit root test (ADF) was conducted, with the results presented in the following table:

The table above presents the unit root test results for the time series of the variables under study using the ADF test. The results indicate that all series are non-stationary at their original level, as the test statistics (*) are greater than the critical values at the 5% confidence level (**) and the p-values exceed 0.05, leading to the acceptance of the null hypothesis of a unit root in the data. However, after taking the first difference, the series become stationary, as the test statistics fall below the critical values and the p-values are less than 0.05. Therefore, all series are integrated of order I(1).

4.1.1. Determining the Optimal Lag Lengths for the Study Model: Before estimating the relationship that describes the impact of real exchange rate misalignment on inflationary performance in Algeria, it is necessary to determine the model's optimal lag lengths. This will be done using the Akaike Information Criterion (AIC), where the number of lags corresponding to the lowest AIC value for each variable is selected.

Fig. 3. Determination of Optimal Lag Lengths for the ARDL Model



Source: EViews 10 Software Output

As shown in the figure above, the optimal lag lengths for all study variables are ARDL(3,4,4,4,3).

4.1.2. ARDL Bounds Test for Cointegration

To test for the existence of a long-run equilibrium relationship (i.e., cointegration) between the dependent variable and the independent variables included in the model, the ARDL bounds test was employed. The results are presented in the following table:

Table 3. Results of the ARDL Bounds Test for Cointegration

Variables	**L(INF) L(GOV) L(IUV) L(MIS)**	
Null Hypothesis	**No cointegration exists among the study variables**	
Fisher Test Statistic	11.796921	
Critical Values	**Upper Critical Values I(1)**	**L Lower Critical Values I(0)**
1%	2.13	4.65
5%	3.09	2.56
10%	4.53	1.23

Source: Prepared by the researchers

It can be observed from the table above that the calculated F-statistic (11.796921) is greater than both the upper and lower critical values at the 1%, 5%, and 10% significance levels, indicating the existence of a long-run cointegration relationship among the variables in the model used for this study.

4.1.3. Diagnostic Tests for the Estimated ARDL (3,4,4,4,3) Model; To verify the adequacy of the selected model and ensure it is free from known econometric problems, diagnostic tests were conducted. The results are summarized in the following table:

Table 4. Diagnostic Test Results for the Estimated Model

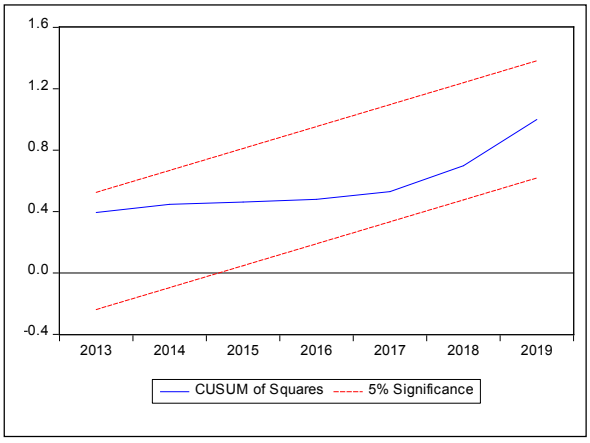
Null Hypothesis	Statistical Tests	Statistical value	p-value
There is no serial autocorrelation problem in the model	Breusch-Godfrey	0.186222	0.8356
The error term in the estimated model has constant variance (homoscedasticity)	Breusch-Pagan-Godfrey	1.400534	0.3390
The residuals of the estimated regression model follow a normal distribution	Jarque-Bera	0.894207	0.639478
The model does not suffer from a misspecification problem	Ramsey Test (Fisher)	0.801679	0.4051

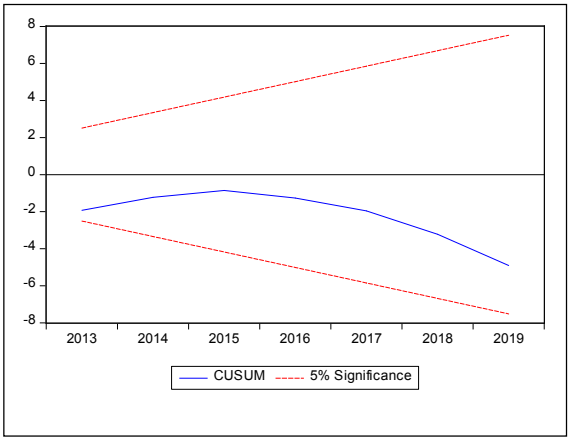
Source: Prepared by the researchers based on EViews 10 output

An examination of the results presented in the table above indicates that the null hypotheses of all diagnostic tests are accepted, as all p-values exceed the 5% significance level. This implies that the estimated ARDL (3,4,4,4,3) model is statistically acceptable.

To further assess the absence of structural changes in the study data and to examine the stability of the long-run parameters relative to the short-run ones, the CUSUM (Cumulative Sum of Recursive Residuals) test as well as the CUSUM of Squares test proposed by Brown et al. (1975) were employed. The results are illustrated in the following figure:

Fig.4. CUSUM and CUSUM of Squares (CUSUM of Sqr) Tests





Source: EViews 10 Software Output

It can be observed from the two figures above that the test statistics for both the CUSUM and the CUSUM of Squares fall within the critical bounds (upper and lower) at the 5% confidence level. This indicates stability and consistency in the model between the short-run and long-run results.

4.1.4. Estimation of Long-Run Coefficients and the Error Correction Model

After confirming the positive results of the model's diagnostic tests and establishing the existence of a long-run equilibrium relationship according to the bounds testing approach for cointegration, the long-run coefficients can be estimated, and the short-run dynamics can be determined, based on the ARDL (3,4,4,4,3) model.

Table 5. Estimated Long-Run Coefficients and Short-Run Dynamics

Estimation Results of the Long-Run Parameters				
Variables	Coefficients	Standard Error	Student's t-statistic	P-value
LGOV	0.590843	0.522495	3.470810	0.0054
LIUV	1.905714	2.104141	11.86836	0.0140
LNEER	2.429847	0.092367	28.59579	0.0251
C	15.30812-	2.428715	4.529807-	0.0000
$EC = LINF - (0.59084 * LGOV + 1.9057 * LIUV + 2.4298 * LNEER - 15.3081)$				
CointEq (-1) *	-4.511369	0.327219	-13.78702	0.0008

Source: Prepared by the researchers based on EViews 10 output

The estimation results show that all coefficients of the independent variables included in the study, as well as the constant term, are statistically significant at the 5% significance level in the long run. It is also observed from the table above that there is a positive long-run response between inflation and all its explanatory variables (total government expenditure, unit value index of imports, and the real effective exchange rate index), which is consistent with economic theory and confirms the validity of the earlier analysis regarding the trends and dynamics of inflation in the Algerian economy.

Furthermore, the results of the ARDL-ECM model indicate that the error correction term (CointEq (-1)) is estimated at -4.511369, which is negative and statistically significant at the 5% level. This confirms the existence of a long-run equilibrium relationship among the study variables in the short run. The value of the error correction coefficient also indicates the speed at which the inflation variable returns to its long-run equilibrium

following any deviation in period (t-1). The results show that approximately 4.511369% of the disequilibrium is corrected in period (t), achieving long-run equilibrium after 30 months and 15 days.

5. CONCLUSION

This study aimed to examine the extent to which exchange rate fluctuations are transmitted to consumer prices in Algeria over the period from 1990 to 2025, using the ARDL model. The results indicate that:

- Fluctuations in the Algerian dinar exchange rate contribute to the intensification of inflationary pressures in Algeria. This is clearly evidenced by the significant elasticity of both the unit value index of imports and the real effective exchange rate of the Algerian dinar in explaining the magnitude of inflationary pressures in the Algerian economy.
- Regarding the unit value index of imports, the estimation results indicate that a 1% increase in this index leads to a 1.90% rise in inflation. This is a substantial rate, reflecting the heavy reliance on imports to meet domestic demand, particularly for food products, consumer goods, capital goods, and intermediate goods. Consequently, any shock in the markets for these goods is directly transmitted to domestic prices.
- The study's results also showed that the intensification of inflationary pressures was reinforced by the continued depreciation of the Algerian dinar, amid the local monetary authorities' adherence to a policy of maintaining a low valuation of the dinar to restore its balance and curb the sharply rising imports. However, this measure contributed to the increase in the prices of imported basic goods priced in Algerian dinars, which directly impacted the overall domestic price level. Furthermore, the rise in the prices of imported primary and intermediate goods led to higher local production costs, which in turn directly affected consumer prices, reflecting a "direct pass-through effect".

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