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The Impact of Imports on the Balance of Trade: A Comparative Study between Algeria and France

Ameur Aboubakr [1], Kourtel Nadjet [2]

1 Marketing Research and Study Laboratory, Department of Business Sciences, University of Constantine 2, Algeria, aboubakr.ameur@univ-constantine2.dz
2 Marketing Research and Study Laboratory, Department of Business Sciences, University of Constantine 2, Algeria, nadjet.kourtel@univ-constantine2.dz

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Corresponding Author
Ameur Aboubak
aboubakr.ameur@univ-constantine2.dz

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Abstract: This study aimed to assess the impact of imports on the trade balance between Algeria and France from 1990 to 2020. The Error Correction Model (ECM) was employed for analyzing French data, while the Autoregressive Distributed Lag (ARDL) model, using EVIEWS10 software, was utilized for Algeria. All findings confirmed a correlation among the variables under study. Notably, Algerian imports were found to have a negative impact on the trade balance, thus adversely affecting long-term economic growth. Conversely, imports had a positive effect on the trade balance for France, thereby fostering long-term economic growth.

Keywords: Balance of Trade; Economic Growth; Imports; Algeria; France.

1. Introduction

As widely acknowledged, the trade balance holds considerable significance in any country's economy, acting as a reflection of its economic health and a gauge of its resilience. Consequently, nations endeavor to enhance their trade balance, with imports constituting a crucial component thereof.

Undoubtedly, imports wield influence on the trade balance, albeit with varying effects across different countries. Imports can yield positive outcomes when directed towards enhancing productivity and facilitating re-exportation. Conversely, the importation of consumer goods may negatively impact domestic industries due to increased competition from imported counterparts. Similarly, long-term imports lacking accompanying manufacturing and export activities can exacerbate trade deficits.

The diversity of imports is a defining characteristic of the trade balance, with a significant portion originating from the Mediterranean Eurozone. Notably, imports have been observed to exert a negative influence on Algeria's trade balance. Thus, we sought to compare the impact of imports on the trade balances of Algeria and France from this perspective.

1.1. The Study problematic

The research problem can be articulated as follows:" What is the impact of imports on the trade balance of Algerian and French economies?"

From this research problem, we have derived the following subsidiary inquiries:

- What are the structural components of Algerian and French imports?
- What is the significance of imports for both countries?

How have imports evolved for both countries?

1.2. Hypotheses

- At a level of significance of (5%), there is a strong positive relationship between French imports and its trade balance.
- At a level of significance of (5%), there is a strong negative relationship between Algerian imports and its trade balance.

1.3. Importance of the study

The importance of this study lies in the importance of imports in economic development, as they serve as a mechanism for providing raw materials, technology, knowledge, and capital goods. Imports used in manufacturing and exports contribute to attracting foreign currency into the country, opening new markets for domestic products, increasing productivity and efficiency. All of these factors have a positive impact on the trade balance.

1.4. Study objective

The current study aims to measure and compare the impact of imports on the balance of trade between Algeria and France, considering France as a trading partner. The selection of Algeria and France for our study is driven by the authors' intention to examine and contrast two nations—one developed the other developing. The proportion of imports differs between the two countries, with consumer goods almost dominating Algeria's total imports, while French importations tend to be more investment-oriented.

1.5. Study methodology

The methodological approach used in our article is the Hypothetico-deductive approach. We first focused on the comparative study of the impact of imports on the trade balance of the two countries, then, through econometric modeling, we attempted to measure this impact in the long and short-run. To do this, we propose in this contribution a comparative analysis on the impact of imports on the balance of trade of the Algerian and French using the ARDL model for Algeria and the ECM model for France. The article is divided into three parts: **a)** Theoretical framework: Discussing the theoretical framework of the impact of imports on the trade balance; b) Literature review: Examining previous literature on the topic. **c)** Comparative empirical study: Conducting a comparative empirical study on the impact of imports on the trade balance between France and Algeria.

2. The theoretical framework for the impact of importations on the balance of trade

The significance of international economic relations has been underscored in economic literature, drawing substantial attention from various economic theories and schools of thought. Importation is recognized as a pivotal component of these relations, as it fulfills essential requirements for social and economic development. Furthermore, imports significantly influence the trade balance

2.1. The importations

2.1.1. Definitions of importations

Imports represent goods and services produced outside the boundaries of a country, which are used within the national economy. An increase Imports leads to a decrease in demand for domestic goods and services, thus subtracting from the total value of the national output (Sakhri,, 2005, pp. 131-132.), which represents the domestically produced goods and services.

Imports can also be defined as a part of the total available supply in the economy that is not produced domestically by resident production units. It is sourced from other producing economies, and this part of the total supply is imported from the rest of the world. Additionally, Imports can be defined as the portion of a country's national output that is used within the borders of another country (Kempf, 2006, p. 32) through the inflow of imported goods and services from outside that country's borders (Ben Elbar, December, 2022, pp. 28-47).

Based on the previous definitions, we can say that the Imports are a collection of goods and services produced by foreign countries, which are purchased by local consumers for the purpose of consumption and satisfying their needs. The value of these goods accrues to the benefit of the foreign country producing them (Ben Elbar, December, 2022, pp. 28-47).

2.2.2. The Importance of Importations for Economic growth

Imports hold significant importance in all economic activities, especially for goods and services that contain new technologies (Lemzoudi, 2005, p. 7). They serve as the main driver of economic development for any country. No country can produce everything it needs, even if it is industrially or agriculturally advanced (Qasim, 2014, pp. 23-50). Imports enable countries to obtain raw materials, consumer goods, intermediate goods, and capital goods that are not available domestically, either due to their scarcity, the country's inability to produce them, or the high production costs if produced domestically. Imports also facilitate the transfer of technology, knowledge, and foreign direct investment, which allows for increased innovation, productivity, and societal well-being.

However, it can be argued that imports, without a corresponding increase in exports and domestic manufacturing, may potentially deplete the country's economy over the long term (Sadok, 2002, pp. pp.11-42)

In addition, importing consumer goods to meet the needs of the national economy negatively affects domestic industries, as they are unable to compete with cheaper imported goods of higher quality, which are more suitable than domestic goods (Brihi, 2017, pp. 319-335). All these factors contribute to reliance on foreign sources and a rise in the trade deficit.

2. The Balance of trade

2.1. Definition of Balance of trade

The balance of trade is the difference between the monetary value of a country's exports and imports during a specific period of time (Sudhansu, May/June2020, pp. 339-418). It also refers to the balance of trade in goods and services, which includes purchases and sales of goods and services (Younis, 2007, p. 181). Purchases refer to imported goods, while sales refer to exported goods. The trade balance can be divided into the goods trade balance and the services trade balance. It can also be defined as the account that separates the value of exported goods from the value of imported goods (Nur Charif, 2016, pp. 62-71) .

2.2. Impact of Balance of trade on Economic Growth

The trade balance is considered as an important economic indicator that reflects the structure and stability of a country. If exports exceed imports, there is a surplus, indicating that the country has efficiency in manufacturing diverse productive activities, and active trade that leads to high growth (Guedel, June 2021, pp. 77-94). However, when imports surpass exports, a deficit occurs. It's important to highlight that a surplus doesn't always imply benefits for the country, nor does a deficit necessarily indicate unfavorable conditions (Kiyas , 2022, pp. pp.435-448) . Nevertheless, a sustained negative trade balance can lead to adverse effects on the economy (Yousri Ahmed, 1993, p. p.207)

3. Previous Studies

Sami Ben Jaddou's study (2020), titled "The Impact of Imports on Economic Growth in Algeria during the period (1980-2018)", aims to measure the impact of imports, classified as consumption, intermediate, and capital, on economic growth in Algeria. The study used several approaches such as the cointegration analysis and vector error correction model (VECM). The results of the estimations reveal the existence of a cointegration relationship between imports and economic growth represented by Gross Domestic Product (GDP). The estimation findings also suggest that the correlation between imports and economic growth in Algeria goes against economic logic, except for capital imports. Furthermore, the impact of capital imports on economic growth, represented by GDP, was weak throughout the period 1980-2018.

Saleh Oubaya's study (2019), titled "Exports, Imports and Economic Growth in Algeria", aims to study the relationship between exports, imports of goods and services, and economic growth in Algeria during the period (1980-2018). The study used time series data for the specified period and applies the autoregressive distributed lag (ARDL) model. The empirical results indicate the presence of a short-term causal relationship between exports, imports, and long-term economic growth, excluding exports.

Arshiya Amiri's study (2019), titled "Relationship between Exports, Imports, and Economic Growth in France (1990-2018)", investigates the potential relationship between exports, imports, and economic growth in France using time series analysis techniques. The results indicate that there is no significant relationship between gross domestic product and exports or imports in France during the period from 1990 to 2018. Arshiya Amiri and Ulf G. Gerdtham's study, titled "Relationship between Exports, Imports, and Economic Growth in France: Evidence from Cointegration Analysis and Granger Causality with Using Geostatistical Models", aims to present a new approach to explore linear and nonlinear Granger causality between exports, imports, and economic growth in France during the period 1961-2006. The results of both error correction vector and improved error correction vector models indicate the presence of a long-run relationship between exports, imports, and economic growth.

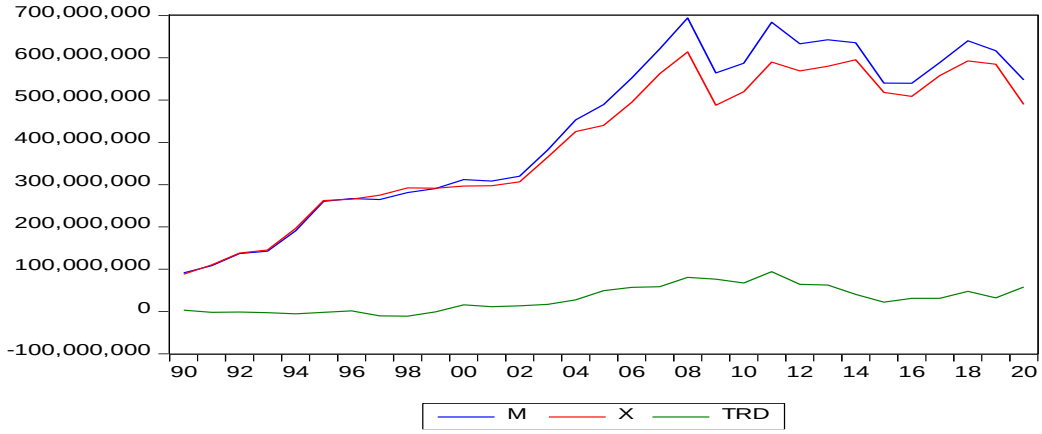
4. Comparative analysis of the Impact of Imports on the Balance of trade between Algeria and France for the period (1990-2020)

4.1. Study Sample and Research Variables

- *Data Nature and Sources*

The study collected annual data for the period 1990-2020 for both countries (Algeria and France). The data is mustered by in US dollars. For France, the data was derived from the World Bank, while for Algeria, it was obtained from the General Directorate of Customs.

Fig.1. The evolution of Imports, Exports, and the French Trade Balance (1990-2000)
Unit: US dollar



Source: Compiled by the researchers based on the outputs of the Eviews10.

Fig.2. The evolution of Imports, Exports, and the Algerian Trade Balance (1990-2000)
Unit: US dollar

Source: Compiled by the researchers based on the outputs of the Eviews10.

Study's Model

The study used a linear regression model to estimate the relationship between the dependent variable and the independent variable, resulting in a linear statistical equation used to explain the relationship between the two variables.

The linear statistical equation for this model is as follows:

TRD = ß0 + ß1M + Ɛ

When:

TRD: Trade Balance

ß0: Constant variable

ß1: Coefficient of the import variable
M: Imports
Ɛ: Random error

4.2. Measuring the Impact of Imports on the French Trade Balance

4.2.1. The statistical model used in the study

The study used the Error Correction Model (ECM) as the standard model for France.

4.2.2. Testing the Stationarity of Variables

Unit Root Test: To test the stationarity of the time series, the Augmented Dickey-Fuller (ADF) test was used. The test was conducted on both of the dependent variable (Trade Balance "TRD") and the independent variable (Imports "M"). The test results are summarized in the following table:

Table.1. The ADF Stationarity test results.

Serie		ADF Statistic at Level	Lags		ADF Statistic - First Difference		Lags
TRD		*0.5493*	0		*0.0000*		0
M		*0.8746*	0		*0.0001*		0

Source: Compiled by the researchers based on the outputs of the Eviews10.

The results in Table (1) show that the ADF test, at a lag length of zero, indicates that not all the time series are not stationary at a 5% significance level. However, after taking the first difference, all the time series are stationary at the same level of significance (5%). Therefore, we conclude that the time series are integrated at on first difference I (1) and hence we reject the null hypothesis that the time series have a unit root, and accept the alternative hypothesis.

Cointegration Test: We employ the cointegration test to analyze the long-term and short-term relationship among the variables under study. This analysis is conducted using the Engle-Granger method, implemented in two stages.

Stage 1: In this stage, we employ the least squares method based on minimizing the sum of squared errors at a 5% significance level to estimate the regression coefficients of the study' variables. The results of the test, as shown in Table (2) below, indicate the presence of a cointegration relationship between the variables at a 5% significance level. Therefore, we reject the null hypothesis (H0) and accept the alternative hypothesis (H1) indicating the presence of cointegration relationship implying a long-term equilibrium relationship.

Table.2. Long-Term Relationship Estimation

Dependent Variable: TRD		Included observations: 31		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-30046744	6641283	-4.524238	0.0001
M	0.138683	0.014082	9.848165	0.0000

Source: Compiled by the researchers based on the outputs of the Eviews10.

Stage 2: In this stage, the presence of cointegration is confirmed by extracting the residuals and testing their stationarity using the augmented Dickey-Fuller (ADF) test. The

results obtained in Table (3) indicate that the calculated test statistic has a greater absolute value than the critical values, and the p-values are less than the 5% significance level. Therefore, we reject the null hypothesis (H0) and accept the alternative hypothesis (H1). This means that the residuals are stationary, indicating the presence of cointegration between the study variables.

Table.3. Augmented Dickey-Fuller (ADF) Test for Residual Series.

Null Hypothesis: EC has a unit root	Exogenous: None	
maxlag=(7)،Lag Length: 0 Automatic - based on SIC		
	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.641757	0.0101
Test critical values: 1% level	-2.644302	
5% level	-1.952473	
10% level	-1.610211	
.*MacKinnon (1996) one-sided p-values		

Source: Compiled by the researchers based on the outputs of the Eviews10.

Estimating the Short-Term Relationship using the Error Correction Model (ECM): At this stage, we employ the Error Correction Model (ECM) to understand the dynamics of short-term changes in the series and to determine when the series approaches equilibrium in the long term. Estimating the short-term relationship involves using the ECM to estimate the common integration relationship between variables. The term "error correction" (EC(-1)) refers to the strength of long-term equilibrium restoration at a level of 1.73%. Therefore, statistically reasonable ECM allows for model adjustment towards long-term equilibrium, The ECM model reveals that in the short term, variations in France's balance of trade are explained to the extent of 13.53% by variations in imports, this variation is positive and statistically significant at the 5% level. The short-term relationship is thus written as follows: D(TRD) = -381484.1 + 0.135331 D(M) as illustrated in Table (4) below:

Table.4. Error Correction Model (ECM) Estimation Results.

Dependent Variable: D(TRD)	Included observations: 30 after adjustments			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-381484.1	.2157872	-0.176787	0.8610
D(M)	0.135331	0.041231	3.282249	0.0028
EC(-1)	-0.363818	0.143394	-2.537188	0.0173

Source: Compiled by the researchers based on the outputs of the Eviews10.

Model Fit Tests

A. Test for Autocorrelation of Residuals (Breusch-Pagan-GoodFrey Test): This test is used to ensure of the absence of autocorrelation in the residuals. The results in Table (5) below indicate that the p-values of both of the F-statistic and obs*R-squared are greater than the 5% significance level, suggesting the absence of autocorrelation in the errors. Therefore, we accept the null hypothesis that the data follows a normal distribution and reject the alternative hypothesis that the data does not follow a normal distribution.

Table.5. Heteroskedasticity Test for Residual Series.

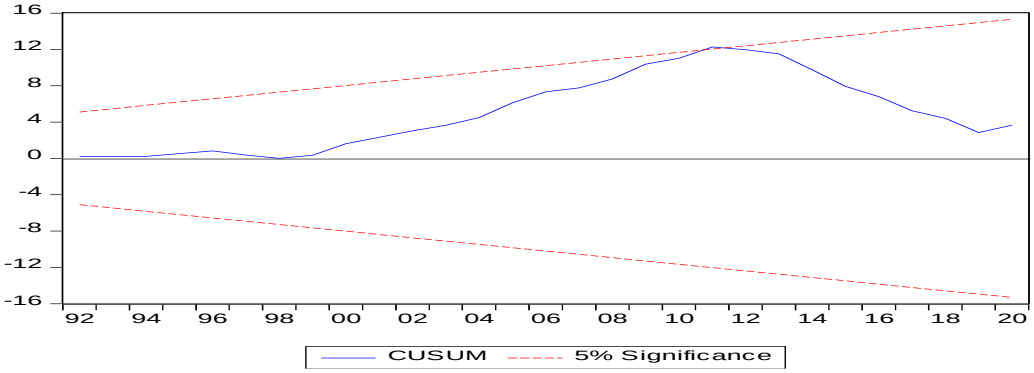
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	3.083210	Prob. F(1, 29)	0.0897
Obs*R-squared	2.979113	Prob. Chi-Square(1)	0.0843

Scaledexplained SS	1.563283	Prob. Chi-Square(1)	0.2112

Source: Compiled by the researchers based on the outputs of the Eviews10.

B-Test of Structural Stability of the Model's Parameters: The CUSUM test evaluates the consistency of the model coefficients. As depicted in Figure (3) below, it's apparent that the model maintains stability within a 5% significance level. Consequently, we uphold the null hypothesis (H0) and dismiss the alternative hypothesis (H1), affirming the model's stability

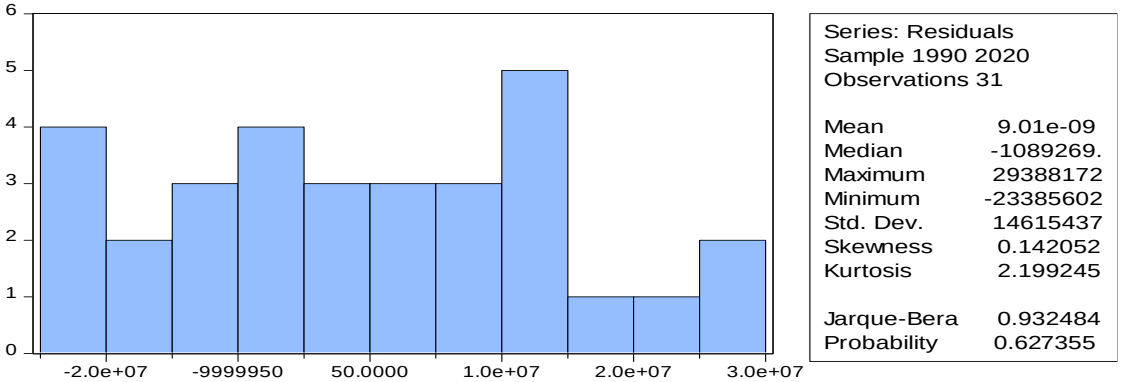
Figure.3. Structural Stability Test.



Source: Compiled by the researchers based on the outputs of the Eviews10.

Test for Normal Distribution of Errors: The test for normal distribution is used to assess the extent to which the data follows a normal distribution. The data is considered following a normal distribution when the p-value is greater than the 5% significance level. Figure (4) below shows that the p-value is greater than 5%, indicating that we can accept the null hypothesis and reject the alternative.

Fig.4. Normality Test for Errors.



Source: Compiled by the researchers based on the outputs of the Eviews10.

4.3. Measuring the Impact of Imports on the Algerian Balance of Trade

4.3.1: Model specification

To measure the relationship between imports and balance of trade in Algeria, the current study used the Autoregressive Distributed Lag (ARDL) model.

4.3.2. Test of Stationarity of the variables

Unit Root Test: The results in Table (6) show that the ADF test, at level, indicates that the series are not stationary at a 5% significance level. However, all the series are stationary at a 5% significance level with a lag order of zero (0). This is true for the balance of trade, while

the imports time series are not stationary at a 5% significance level with a lag order of one (1). However, the imports time series are stationary at a 5% significance level with a lag order of zero (0).

Hence, we infer that the time series are stationary and integrated at the first difference. Therefore, we reject the null hypothesis and accept the alternative one.

Table.6. Study of Variable Stability.

Serie		ADF Statistic at Level	Lags		ADF Statistic - First Difference	Lags
TRD		0.0911	0		0.0000	0
M		0.5646	1		0.0068	0

Source: Compiled by the researchers based on the outputs of the Eviews10.

Results of the ARDL Method estimation: The statistical tests for the regression equation presented in Table (7) below indicate the high quality of the estimated model. This is evident from the determination coefficient, 0.804221 = (R2) R-Squared, which means that 80% of the variations in the balance of trade and imports are accounted for. The remaining 20% represents the amount of error, which could be attributed to other variables not included in the model or data inaccuracies.

Table.7. ARDL Estimation Results.

Dependent Variable: TRD Included observations: 30 after adjustments				
Maximum dependent lags: 4 (Automatic selection)				
Model selection method: Akaike info criterion (AIC)				
Dynamic regressors (4 lags) Fixed regressors: C @TREND، automatic: M				
Number of models evalulated: 20 Selected Model: ARDL(1,1)				
Note: final equation sample is larger than selection sample				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
TRD (-1)	0.439797	0.116524	3.774286	0.0009
M	1.878679	0.410811	4.573095	0.0001
M (-1)	-2.275779	0.423256	-5.376836	0.0000
C	2338.022	2631.119	0.888603	0.3827
@TREND	693.4611	335.0435	2.069764	0.0490
*Note: p-values and any subsequent tests do not account for model selection				

Source: Compiled by the researchers based on the outputs of the Eviews10.

Test of Common Integration: The results in Table (8) below show the presence of a common integration relationship among the variables because of the greater value of the calculated value than the tabulated value at a significance level of 5%. Therefore, we reject the null hypothesis that states no common integration relationship between the variables and accept the alternative hypothesis, which confirms the presence of a common integration among the study variables.

Table.8. Johansen Cointegration Results.

	F-Bounds Test		Null Hypothesis: No levels relationship	
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	**10.65986**			
Actual Sample Size	30		Finite Sample: n=30	
		10%	4.427	4.957
		5%	5.377	5.963
		1%	7.593	8.35

Source: Compiled by the researchers based on the outputs of the Eviews10.

Estimation of the Long-Term Relationship: From the results in Table (9) below, we observe a negative economic impact of imports on the balance of trade and the statistical significance of this impact. An increase in imports by 1% leads to a 0.7088% increase in the

trade deficit. Additionally, we note that this relationship is statistically significant at the 5% level, while 0.05 > 0.0467.

Table.9. Long-Term Relationship Estimation.

Levels Equation Case 4: Unrestricted Constant and Restricted Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
M	-0.708851	0.338676	-2.093004	0.0467
@TREND	1237.874	658.2014	1.880692	0.0717
EC = TRD - (-0.7089*M + 1237.8739*@TREND)				

Source: Compiled by the researchers based on the outputs of the Eviews10.

The Short-Term Relationship and The Error Correction Model: We estimate the error correction coefficient using the ARDL Error Correction Regression, focusing on the model parameters. Two conditions must be satisfied: CointEq(-1) should have a negative sign and be statistically significant. The results obtained in Table (10) indicate that the error correction coefficient can be accepted at a 5% significance level. This means that it has both statistical and economic significance. The negative sign (0.560203) indicates the strength of the adjustment mechanism. Its value implies that 56% of short-term imbalances are corrected to return to the long-term equilibrium, which occurs twice a year, every six months.

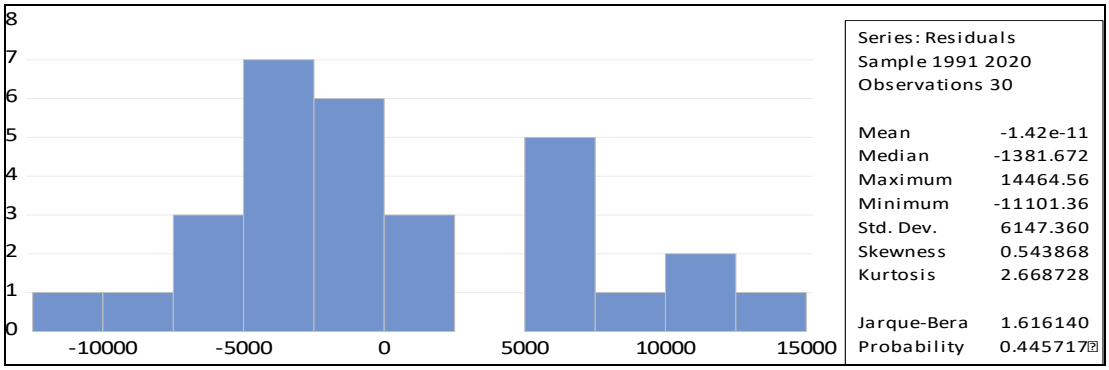
Table.10. Short-Term Relationship Estimation and Error Correction Model.

Dependent Variable: D(TRD)		Selected Model: ARDL(1,1)		
			Case 4: Unrestricted Constant and Restricted Trend	
Included observations: 30				
		ECM Regression		
			Case 4: Unrestricted Constant and Restricted Trend	
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3031.483	1376.679	2.202026	0.0371
D(M)	1.878679	0.358750	5.236736	0.0000
CointEq(-1)*	**-0.560203**	**0.095323**	**-5.876899**	**0.0000**
R-squared	0.602039	Mean dependent var		407.1680
Adjusted R-squared	0.572561	S.D. dependent var		9744.704
S.E. of regression	6370.973	Akaike info criterion		20.45153
Sum squared resid	1.10E+09	Schwarz criterion		20.59165
Log likelihood	-303.7730	Hannan-Quinn criter.		20.49636
F-statistic	20.42296	Durbin-Watson stat		1.873971
Prob(F-statistic)	0.000004			
* p-value incompatible with t-Bounds distribution.				

Source: Compiled by the researchers based on the outputs of the Eviews10.

Test of Normal Distribution of Residuals: To ensure that the residuals of the model follow a normal distribution, we use the Jarque-Bera test, which examines both the skewness and kurtosis coefficients.

Fig.5. Results of Jarque-Bera test of Normality of Residuals.



Source: Compiled by the researchers based on the outputs of the Eviews10.

The Figure (5) below shows that the Jarque-Bera value (JB) is equal to 1.616140 with a probability of 0.445717, which is greater than the 5% significance level. Therefore, we reject the null hypothesis and accept the alternative hypothesis.

The test for Autocorrelation of Errors: To ensure the absence of autocorrelation in the residuals of the regression equation, we use the LM test. The results in Table (11) below indicate the test results, with the statistical F probability value equal to 0.4343, which is greater than 0.05. Therefore, we accept the null hypothesis and reject the alternative hypothesis. Thus, there is no serial correlation among the errors.

Table.11. Autocorrelation Test of Residuals (LM Test).

Breusch-Godfrey Serial Correlation LM Test		
F-statistic	0.865030	Prob. F(2, 23)0.4343
Obs*R-squared	2.098732	Prob. Chi-Square(2)0.3502

Source: Compiled by the researchers based on the outputs of the Eviews10.

Heteroskedasticity Test AR (Autoregressive): This test is used to verify the assumption of homoscedasticity of the random error variance. The obtained results in Table (12) below indicate that the statistical F probability value is equal to 0.4343, which is greater than 0.05. This leads us to accept the null hypothesis and reject the alternative hypothesis. It means that the estimated model does not suffer from heteroskedasticity problem, indicating that the residuals have homoscedastic variance, and the differences between their variances are not significant.

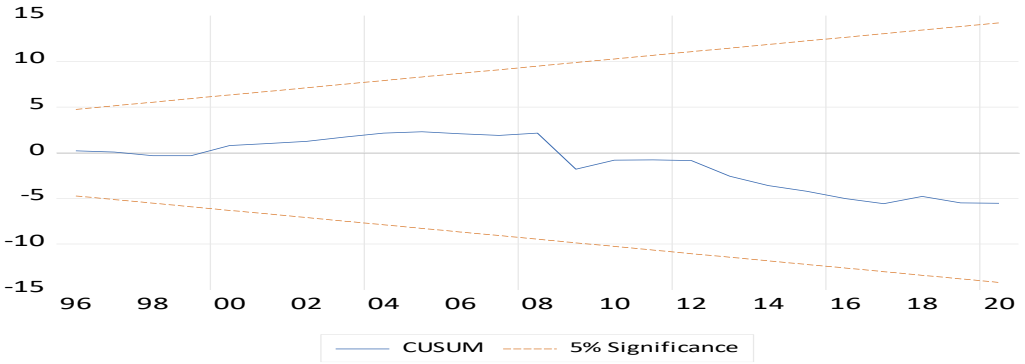
Table.12. Heteroscedasticity Test.

Heteroskedasticity Test: ARCH			
F-statistic	1.266249	Prob. F(1, 27)0.2704	
Obs*R-squared	1.299119	Prob. Chi-Square(1)	0.2544

Source: Compiled by the researchers based on the outputs of the Eviews10.

Model Stability Test: The structural stability of the estimated coefficients for the error correction model and the ARDL model is verified. Figure N° (06) representing the CUSUM test result, shows the graphical falls within the critical bounds. This indicates stability and consistency in the model, with alignment between the long-term and short-term results.

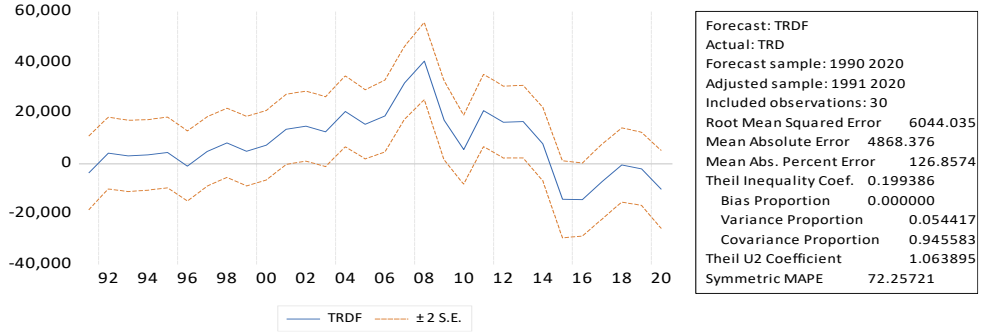
Fig.6. Structural Stability Test of the Model.



Source: Compiled by the researchers based on the outputs of the Eviews10.

Model Forecasting Ability Test: After ensuring that the data used in the study is free from any structural changes, we will use the *Theil inequality coefficient* (Theil's U) to confirm that the proposed model has good forecasting ability throughout the study period. The test results in Figure (7) below indicate that the Theil value is equal to 0, which matches the standard value of Theil, which is also equals to 0. The variance ratio is 0.945583Cp, which is close to the unity (1). Therefore, the model exhibits a high ability to forecast in the future, enabling informed economic decision-making to achieve the set objectives.

Fig.7. Model Predictive Ability Test.



Source: Compiled by the researchers based on the outputs of the Eviews10.

All stability test results, whether for France or Algeria, conducted using the Augmented Dickey-Fuller (ADF) test, showed that all the study' variables were non-stationary at the level but became stationary at the first differences.

The results of the estimations proposed by the actual research for Algeria and France confirmed the quality performance of the final model adopted to estimate the short and long-term effects and the nature of the relationship between the variables. In the case of France, table (2) shows that the determination coefficient has an estimated value of 0.76, indicating that the model is acceptable and has the ability to explain 76% of the variations in the trade balance. As for Algeria, the determination coefficient has an estimated value of 0.8042, which also indicates that the model (table 7) is acceptable and has the ability to explain 80.42% of the variations in the trade balance.

The research results, through all the tests conducted, whether diagnostic or suitability tests, demonstrated the existence of a long-term relationship between imports and the trade balance. The error correction model estimation for both Algeria and France allows for the adjustment

of variables towards long-term equilibrium. French imports are statistically significant and positively contribute to the trade balance in the long run, where a 1% increase in imports leads to a surplus of 0.138683%. On the other hand, Algerian imports have a negative impact on the trade balance, where a 1% increase in imports leads to an increase in the trade deficit by 0.7088%. Therefore, the relationship between imports and the trade balance is inverse for Algeria, contrary to France.

In the short term, the probability of the independent variable, French imports, is 0.0173, which is smaller than the allowed error range and statistically significant. Therefore, it can be relied upon as an explanatory variable for the trade balance. A 1% increase in French imports leads to an increase in the trade deficit by 0.36381%.

The probability of the independent variable, Algerian imports, is zero (0), which is smaller than the allowed error range and statistically significant. Hence, it can also be relied upon as an explanatory variable for the trade balance. A 1% increase in imports leads to an increase in the trade deficit by 0.7088%. Thus, we observe that the trade deficit in Algeria is twice as much as the trade deficit in France in the short term.

On the other hand, the speed of long-term equilibrium restoration for France, E(-1), is estimated at 0.36. This indicates that the behavior of the trade balance takes approximately 3 months to reach long-term equilibrium, with a speed of 36% of the trade balance imbalance. As for Algeria, the speed of long-term equilibrium restoration, CointEq(-1), is estimated at 0.5602, indicating that the behavior of the trade balance takes approximately 6 months to reach long-term equilibrium, with a speed of 56%. Therefore, we observe that the equilibrium restoration speed for France is shorter than that of Algeria.

5. Results

1- An increase of French imports may lead to increase productivity and economic growth, resulting in a surplus in the trade balance. Therefore, Algerian imports, which consist of consumer goods, may lead to a decline in economic growth and an increase in the trade deficit.

2- The variables studied, whether for France or Algeria, are not significantly different from each other and exhibit similar behavior, which has resulted in relative stability of the variables. This allows for making similar economic decisions and implementing appropriate trade policies.

3- There is a dynamic relationship in the short term for both France and Algeria, between imports and other economic variable (Balance of trade).

4- The impact of imports on the trade balance in Algeria is larger in the short term compared to France. This is due to the weak export performance, which heavily relies on petroleum exports, and the high consumption of locally produced goods. In contrast, France exhibits a different pattern.

5- French imports in the long term have a positive impact on the trade balance because they are imported for reprocessing, unlike Algeria, where imports have a negative impact as they are consumption imports.

6- Imports in the long term are considered a negative factor for Algeria and a positive factor for France.

7- In the short term, imports have a negative impact on the Algerian trade balance, and to a lesser extent, on the French trade balance.

8- The speed of equilibrium restoration in the French trade balance is shorter than that of the Algerian trade balance. This is due to differences in trade policies and the size of their economies.

6. Conclusion

The impact of imports on the trade balance varies depending on the nature of the imported goods' structural composition. If the imported goods are for consumption purposes, they have a negative effect on the trade balance. However, if the imports are for reprocessing and investment purposes, they have a positive effect on the trade balance. Therefore, imports should be directed and managed in order to play a significant role in economic growth. Through the study, it has been observed that French imports have a positive impact on the French trade balance because they are capital goods that strongly influence increased investment, production, and exports, leading to a surplus in the trade balance. On the other hand, Algerian imports have a negative impact on the Algerian trade balance, which records a deficit. This is due to the nature of Algerian imports, where food items represent a significant portion, hindering overall economic development.

- *Recommendations*

Based on the finding of our research, it is become evident that imports are a vital necessity for any country's economy, whether advanced or developing. This study confirms the significant importance and impact of imports on the trade balance. Accordingly, the key recommendations are as follows:

- Encouraging domestic production by supporting the private sector and start-up enterprises through tax incentives and simplifying customs procedures.
- Promoting foreign direct investment by using economic diplomacy to facilitate the localization of modern technology and enhance the efficiency of local products.
- Restricting and optimizing consumer imports by importing goods for production purposes and re-export.
- Lastly, conducting a comprehensive study to assess the impact of each type of imports on the trade balance. This will enable identifying the types of imports that have a negative effect on the trade balance, with the aim of implementing policies to replace such imports.

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