THE IMPACT OF FOREIGN DIRECT INVESTMENT (FDI) ON ECONOMIC DEVELOPMENT: THE CASE OF ALGERIA

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ABSTRACT

The study aimed to determine the impact of foreign direct investment (FDI) on economic development in Algeria in the short and long term by analyzing the incoming flows during the study period and demonstrating this effect by using the FARDL model. The study found that FDI positively affects the Gross domestic product (GDP) in the long term, meaning it contributes to increasing economic development, as well as in the short term, where FDI had a positive impact on the GDP, thereby contributing to the increase in economic development in Algeria.

Keywords: Foreign Direct Investment, Economic Development, Gross Domestic Product, FARDL Model, Long-term and Short-term Effects.

JEL Classification: E2, E21, O16

INTRODUCTION

FDI is one of the most important sources of external financing that countries rely on to accelerate the development process due to its potential impact on the economy of the host country.

This impact includes effects on production, employment, income, prices, exports, and imports, which in turn affects the economic development of the host country and achieves welfare in the host country.

The importance of FDI increased in 1990 as the opening of global markets facilitated the free flow of capital between countries. Policy makers around the world seek to attract FDI to address a range of challenges, including achieving high development rates, which is one of the main challenges facing developing countries.

Algeria, like other developing countries in its strategy to support development, seeks to attract as much FDI as possible by providing a suitable environment for attracting FDI through offering a set of incentives and facilities to foreign investors.

Study problem:

The problem of this study can be formulated in the following main question:

What are the long-term and short-term effects of FDI on economic development in Algeria?

LITERATURE REVIEW

Previous Studies

Governments of countries have shown interest in the role of FDIs in economic development. Since economic development is one of their main objectives, they have been motivated to develop policies that attract FDI during the economic development process in these countries (Vo, Anh, & Zhang, 2019).

Researchers have conducted numerous studies to understand this role using data from several countries or a single country. Unfortunately, they have not yet reached a consensus on the empirical results. In a study by (Kovačević, Rebić, & Kurušić, 2021) related to a single country, examined the impact of FDI inflows on the economic development of Serbia during the period 2010-2019. The study found a positive link between the inflow of FDI and the development of Serbia's GDP, and a positive link between the inflow of FDI and the value of exports, and also shows a positive link between the development of investments in the manufacturing industries and development in productivity, employment, and total trade value. The same result was obtained in the United States with a significant impact of FDI on economic development (Parviz, 2004).

In analyzing FDI and economic development, evidence appears to support the hypothesis that FDI can have a negative impact on economic development, a study by (Dey & Awal, 2017) found no positive impact of FDI on economic development in Bangladesh during the period 1990-2015.

As for the different studies by researchers based on using comprehensive data for several countries. A study by (Hlavacek & Bal-Domanska, 2016) examined the impact of FDI on economic development in Central and Eastern European countries during the period 200-2012.

It concluded that FDI plays a unique role in the economic transformation because it contributes to the economic development of Central and Eastern European countries and becomes a tool for integrating economies undergoing transition into global production chains.
In a study conducted by (Khawar, 2005) FDI and economic development: A comprehensive analysis of several countries covering the period 1970-1992. The results, regardless of any requirements for human capital, found that FDI has a significant and positive link with per capita real income. In addition, the coefficient of the FDI variable was much larger than the coefficient of the domestic investment variable, reflecting the significant potential for the positive impact contributed by FDI.

On the other hand, there is a negative context that may be present in the link between FDI and economic development using data for several countries, and a study by (Herzer, 2012) covered 44 developing countries during the period 1970-2005, found that FDI has a negative effect on development in developing countries.

Similarly, a study by (Velonjara & Gondje-Dacka, 2019) found that the effect of FDI on economic development is negative and statistically significant for 9 countries in West Africa, during the period 2000-2016.

In the short and long term, a study by (Ayenew, 2022) confirmed that the impact of FDI on economic development is significant and positive in the long term, and statistically insignificant in the short term, in 22 Sub-Saharan African countries.

A study by (Mohamed, Liu, & Nie, 2021) focused on finding the link between technological innovation, FDI, and economic development in Egypt during the period 1990-2019, found a statistically significant positive link between the share of total capital formation and FDI in economic development in the long term, and the innovation index and inflation rate had a negative impact in the long term, with a very high speed of adjustment towards equilibrium. A study by (Huong, Duong, & Thuy, 2018) researched the effects of human resources and FDIs on economic development in Vietnam, showing that unemployment rates have a negative impact on economic development in the long and short term.

Life expectancy does not affect economic development in the long and short term. And that FDI has a negative impact on economic development in the long term, and a positive effect in the short term. A study by (Jannah, Suriani, & Yulindawati, 2022) aimed to find out how foreign investment and labor affect economic development in Indonesia, concluded that economic development is significantly and positively affected by FDI in the short term, and in the long term the effects are negligible. While labor has a significant negative effect in the short term on development, and no effect in the long term.

Trends of FDI and the Level of Economic Development in Algeria

The Evolution of FDI in Algeria

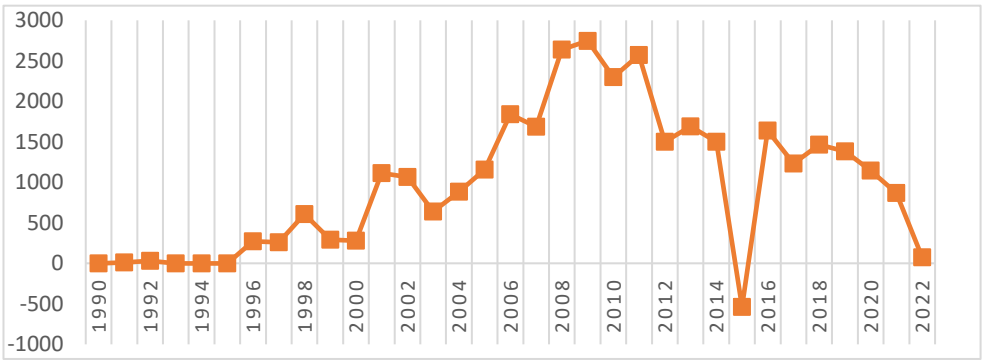
Since the 1980s, Algeria has adopted a series of major reforms in line with the measures taken by international financial institutions represented by the International Monetary Fund and the World Bank to overcome the problems faced by the economy and thus enter into a market economy.

All these measures aim to attract as much FDI as possible due to its importance in supporting local resources and accelerating development.

The figure below shows the flows of FDI to Algeria during the study period:

Figure 1: Inflows of FDI to Algeria during the period 2022-1990)

Unit: Million USD



Source: Compiled by the researcher depending on: the World Bank database https://data.worldbank.org.

From figure number (01), we see that the curves reflecting the inflows of FDIs to Algeria have taken various forms.

From figure (01), it can be seen that the curves reflecting the flow of FDI to Algeria show different forms.

In the period from 1990 to 1994, the flow was almost nonexistent due to the political tensions experienced by the country at that time, which were accompanied by poor economic performance and deterioration of the security situation despite the economic reforms undertaken by the Algerian state. With Algeria's structural adjustment agreement with the International Monetary Fund in 1995, FDI rose to 270 million USD in 1996. The flows recorded fluctuating values until the year 2001, which exceeded the billion-dollar mark due to the improvement in the country's political situation and the amendments to the investment law to provide a suitable climate to encourage investors through Order 01-03, accompanied by an increase in hydrocarbon revenues and accumulation of foreign exchange reserves. This, in turn, had a positive impact on FDI flows, reaching 2.75 billion USD in 2009.

Table (01): Evolution of GDP Development Rates in Algeria during 1990-2022 (%)

Years	GDP Development Rate	Years	GDP Development Rate
1990	0.800001	2007	3.4
1991	-1.2	2008	2.4
1992	1.800002	2009	1.6
1993	-2.1	2010	3.6
1994	-0.9	2011	2.9
1995	3.799995	2012	3.4
1996	4.099998	2013	2.8
1997	1.1	2014	3.8
1998	5.100004	2015	3.7
1999	3.200002	2016	3.2
2000	3.8	2017	1.3
1200	3	2018	1.2
2002	5.6	2019	1
2003	7.2	2020	-5.1
2004	4.3	2021	3.4
2005	5.9	2022	3.1
2006	1.7		

Source: Source: Compiled by the researcher depending on: the World Bank database https://data.worldbank.org.

However, with the issuance of the supplementary finance law in the same year, the activity of investors was affected as this law restricted the freedom of foreign investment. In the following years, FDI flows declined until 2015, due to the drop in oil prices in 2014, which caused a significant shock to the Algerian economy, which relies heavily on oil revenues, not to mention the depreciation of the dinar and the increase in the budget deficit.

Afterwards, in 2016, oil prices rose again, and with the improvement of macroeconomic balances, the flow of FDI increased compared to 2015, reaching 1.47 billion USD in 2018. For the rest of the years, investment witnessed a decline, reaching 751 million USD in 2022, due to the fall in oil prices and also due to the global health crisis of COVID-19, which affected the economies of the world in general.

Evolution of Economic Development Rates in Algeria

The following table shows the development rates of GDP (GDP) in Algeria during the period from 1990 to 2022.

From table number (01), we observe that during the period 1990-1994, the development of GDP was very low, and at times negative. This decline is attributed to the oil crisis that occurred in the late eighties, which affected fuel prices, especially since Algeria's economy heavily depends on the hydrocarbon sector.

This was accompanied by a decrease in currency value due to the deterioration of the security situation resulting from the political crisis during that period. Then, between 1996 and 1999, GDP development increased compared to the previous period, reaching 5.1% in 1998, due to the improvement in fuel prices. With the beginning of the new millennium, as a result of numerous reforms introduced by the government in the form of development programs such as the Economic Development Support Program, Economic Recovery Program, and the Five-Year Development Program which extended until 2014, development rates significantly increased along with the rise in oil prices, where GDP development reached 7.2%, the highest rate during the study period. The years 2008 and 2009 saw a decrease to 2.4% and 1.6% respectively, due to the global financial crisis in 2008 that affected the global economy. In the following years, the rates remained relatively stable until 2020, where it sharply dropped to a negative value of -5.1% due to the direct and indirect impacts of the global health crisis COVID-19. As for the last two years of the study period, GDP development rates witnessed an increase of 3.4% and 3.1% respectively compared to 2020. This is due to the significant increase in economic activity, especially in the hydrocarbon sector.

TESTING THE IMPACT OF FDI ON ECONOMIC DEVELOPMENT IN ALGERIA DURING 1990-2022

This section discusses the role played by FDI in influencing economic development in Algeria, utilizing econometric methods for proof through the use of the Autoregressive Distributed Lag (ARDL) model.

Data Description of the Study

Data description is one of the stages in constructing an econometric model. It involves defining the variables used in the model and also specifying the study period.

Based on a review of theoretical literature and previous empirical studies, the GDP (GDP) index was determined to measure economic development, which enables understanding the impact of FDI on economic development. For the study sample, Algeria was chosen, and the period from 1990 to 2022 was adopted due to the availability of data related to the study variables during this period.

Study Variables and Data Collection Sources

The study relies on an independent variable, which is FDI, and a dependent variable, which is economic development, represented by the GDP index as shown in the following table along with data sources:

Table 2: Study Variables and Data Sources

Indicator	Definition of Variables	Source
Independent Variable		
FDI (FDI)	Net inflows of FDI as a percentage of total GDP.	World Bank Database
Dependent Variable		
GDP (GDP)	The sum of gross value added by all resident producers in the economy.	World Bank Database

Source: Compiled by the researcher

Descriptive Statistics and Stability Study

Before estimating the study model, it is necessary to know the characteristics of the data adopted in the study and the direction of the link between the two variables.

Descriptive Statistics of Study Variables

To clarify the main characteristics of the data used in the study, the obtained results are summarized in the following table:

Table 3: Descriptive Analysis Results of Study Variables

Variables	Arithmetic Mean	Arithmetic Median	Standard Deviation	Maximum Limit	Minimum Limit
FDI	9.80E+08	1.06E+09	8.75E+08	2.75E+09	-5.38E+08
GDP	1.15E+11	1.17E+11	6.21E+10	2.14E+11	4.18E+10

Source: Compiled by the researcher depending on: outputs of EViews 12.

The results for the variables shown in the previous table are as follows:

- **FDI (FDI):** The data on FDI in Algeria are concentrated around their mean, with a mean of 9.80E+08 USD, which is greater than the standard deviation of 8.75E+08;
- **GDP (GDP):** The data on GDP in Algeria are concentrated around their mean, with a mean of 1.15E+11, which is greater than the standard deviation of 6.21E+10;

Data Stability Study

Unit root tests are the most important method for determining the degree of integration of the data. Therefore, the Augmented Dickey-Fuller (ADF) test was used to detect the presence of a unit root in all study variables.

The test hypotheses are formulated as follows:

- **Null Hypothesis H_0:** There is a unit root, i.e., it is non-stationary.
- **Alternative Hypothesis H_1:** There is no unit root, i.e., it is stationary.

Table 4: ADF Unit Root Test Results

At the Level		FDI	GDP
Constant	t-Statistic Prob	-2.3207	-0.5512
		0.1719	0.8678
		n0	n0
General and Steady Trend	t-Statistic Prob	-2.1484	-1.9575
		0.5006	0.6015
		n0	n0
Without General and Steady Trend	t-Statistic Prob	-0.8989	0.8497
		0.3189	0.8891
		n0	n0
At the First Difference		d(FDI)	d(GDP)
Constant	t-Statistic Prob	-8.1534	-4.9987
		0	0.0003
		***	***
General and Steady Trend	t-Statistic Prob	-8.3091	-4.9121
		0	0.0022
		***	***
Without General and Steady Trend	t-Statistic Prob	-8.293	-4.7642
		0	0
		***	***

Source: Compiled by the researcher depending on: outputs of EViews 12.
Note: *, **, *** indicate significance levels of 10%, 5%, and 1%, respectively, n0 not significant.

Table number (04) shows that the variables are not significant at the 5% level, meaning they are non-stationary at level due to the presence of a unit root, which means accepting the null hypothesis. After re-testing the variables at the first difference, both series were stable at the 1% significance level, i.e., free from the unit root, leading to the acceptance of the alternative hypothesis and the rejection of the null hypothesis. Therefore, the study variables are integrated of order one I (1).

Results of Estimating the Study Model

To understand the impact of FDI on economic development, the model is estimated, and various diagnostic tests are conducted to ensure the authenticity of the estimated results.

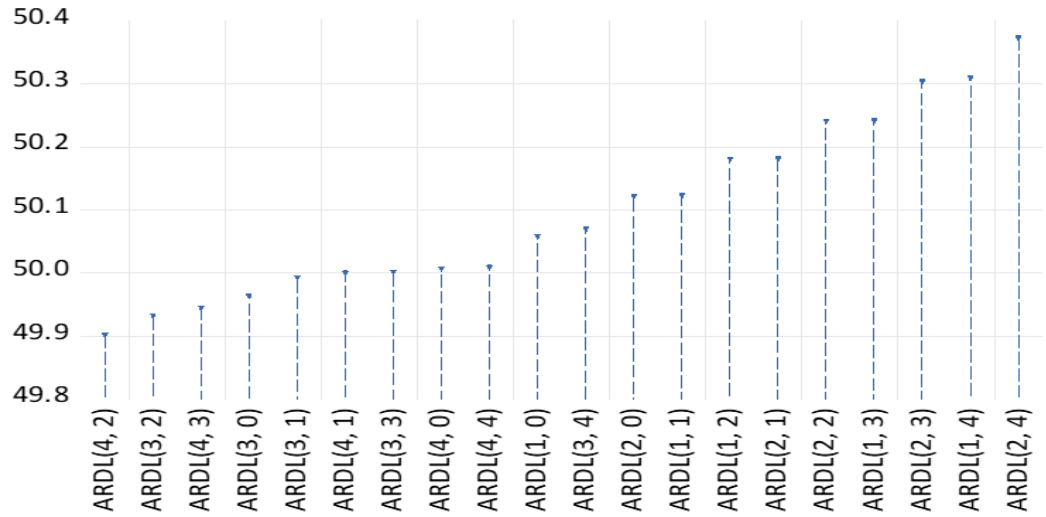
Estimation of the FARDL Model

The stability study results reveal that the study variables, economic development (GDP) and FDI (FDI), are integrated of the same order I(1), suggesting the possibility of a long-term cointegration link between these variables within the FARDL methodology framework, which is considered one of the best models for studying cointegration.

Choosing the Optimal Lag Length for the FARDL Model

Before estimating the model, it's crucial to determine the optimal lag periods. Based on the Akaike Information Criterion (AIC), the FARDL (4,2) model was chosen as it provides the lowest value for this criterion among a set of models as shown in the following figure:

Figure 2: Optimal Lag Length for the ARDL Model



Source: Compiled by the researcher depending on: outputs of EViews 12.

Determining the Decimal Value for the FARDL Model

Table 5: Determining the Decimal Value for the FARDL Model

The Test	Value
KSTAR	3.9099

Source: Compiled by the researcher depending on: outputs of EViews 12.

Table 05 presents us with the optimal partial frequency, noting that the frequency parameter achieving the minimum AIC value is 3.9099.

Bound Test for Cointegration

To test the existence of a long-term equilibrium link between the study variables, the Bound Test is used within the Augmented ARDL framework, because the critical values according to the ARDL methodology do not provide us with true values due to the presence of a decimal value in theF ARDL model. This test is conducted according to three hypotheses as follows:

Overall F-Bounds Test

The test results are as follows:

Table 6: Overall F-Bounds Test Results

Overall F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	8.916042	10%	4.04	4.78
k	1	5%	4.94	5.73
		2.5%	5.77	6.68
		1%	6.84	7.84
Actual Sample Size	29		Finite Sample: n=35	
		10%	4.225	5.05
		5%	5.29	6.175
		1%	7.87	8.96
			Finite Sample: n=30	
		10%	4.29	5.08
		5%	5.395	6.35
		1%	8.17	9.285

Source: Compiled by the researcher depending on: outputs of EViews 12.

From Table (06), the critical value reached 8.91, which is higher than the upper value at a 5% significance level, meaning we reject the null hypothesis and accept the alternative hypothesis, which states the existence of a long-term equilibrium link.

T-Bounds Test

The test results are as follows:

Table 7: T-Bounds Test Results

t-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
t-statistic	-3.545169	10%	-2.57	-2.91
		5%	-2.86	-3.22
		2.5%	-3.13	-3.5
		1%	-3.43	-3.82

Source: Compiled by the researcher depending on: outputs of EViews 12.

From Table (07), the critical value reached 3.54 in absolute terms, higher than the upper value in absolute terms at a 5% significance level, meaning we reject the null hypothesis and accept the alternative hypothesis, indicating a long-term equilibrium link.

Exogenous F-Bounds Test

This test examines the exogeneity of the independent variable, and the results are as follows:

Table 8: Exogenous F-Bounds Test Results

Exogenous F-Bounds Test		Null Hypothesis: No exo. levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
		Asymptotic: n=1000		
F-statistic	17.62414	10%	2.67	5.31
k	1	5%	3.79	7.21
		2.5%	4.95	8.84
		1%	6.53	11.05
Actual Sample Size	29	Finite Sample: n=30		
		10%	2.88	5.34
		5%	4.22	7.51
		2.5%	5.61	9.56
		1%	7.70	12.34

Source: Compiled by the researcher depending on: outputs of EViews 12.

From Table (08), the critical value reached 17.62, higher than the upper value in absolute terms at a 5% significance level, meaning we reject the null hypothesis and accept the alternative hypothesis, indicating that the independent variable FDI is exogenous.

Through the three Bound Test results within the Augmented ARDL framework, we acknowledge the existence of a long-term equilibrium link between the variables FDI and GDP using the FARDL model.

Results of Estimating Long-Term and Short-Term Parameters

From the outputs of the Unrestricted Error Correction Model (UECM) as follows:

Table 9: UECM Estimation Results

ARDL Long Run Form and Bounds Test
Dependent Variable: D(GDP)
Selected Model: ARDL(4, 2)
Case 2: Restricted Constant and No Trend
Date: 09/26/23 Time: 12:07
Sample: 1990 2022
Included observations: 29

Conditional Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.09E+09	6.56E+09	0.000000	0.0000
GDP(-1)*	-0.283788	0.080049	-3.545169	0.0022
FDI(-1)	33.78141	8.046810	4.198112	0.0005
D(GDP(-1))	-0.247528	0.193030	-1.282334	0.2152
D(GDP(-2))	-0.631897	0.189197	-3.339895	0.0034
D(GDP(-3))	-0.285785	0.202407	-1.411932	0.1741
D(FDI)	15.56184	5.182985	3.002487	0.0073
D(FDI(-1))	-11.32589	6.092671	-1.858936	0.0786
COS(2*@PI*3.9099999...	1.32E+10	5.11E+09	0.000000	0.0000
SIN(2*@PI*3.90999999...	-6.34E+09	4.24E+09	0.000000	0.0000

Source: Compiled by the researcher depending on: outputs of EViews 12.

The parameters can be separated for ease of economic interpretation as follows:

Long-Term Parameters:

The following table shows the results of the long-term estimation:

Table 10: Long-Term Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	119.0373	21.30500	5.587294	0.0000
C	1.79E+10	2.09E+10	0.857964	0.4016
EC = GDP - (119.0373*FDI + 17937338261.5320)				

Source: Compiled by the researcher depending on: outputs of EViews 12.

From Table (10), there's a statistically significant positive effect of FDI (FDI) on economic development (GDP); a one-unit increase in FDI leads to an increase in GDP by 119.03 units, aligning with most empirical study results and the economic theory that suggests FDI increases the potential for rapid development in developing countries due to its ability to finance from both domestic and foreign sources, exceeding the capacity of local competitors, enabling foreign projects to finance new investments, thereby enhancing development potential in these countries.

Short-Term Parameters

The following table presents the short-term estimation results:

Table (11): Short-Term Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDP(-1))	-0.247528	0.179818	-1.376551	0.1847
D(GDP(-2))	-0.631897	0.179157	-3.527050	0.0023
D(GDP(-3))	-0.285785	0.186139	-1.535336	0.1412
D(FDI)	15.56184	4.483988	3.470537	0.0026
D(FDI(-1))	-11.32589	5.583227	-2.028556	0.0568
COS(2*@PI*3.9099999...	1.32E+10	4.76E+09	0.000000	0.0000
SIN(2*@PI*3.90999999...	-6.34E+09	3.92E+09	0.000000	0.0000
CointEq(-1)*	-0.283788	0.060923	-4.658168	0.0002

Source: Compiled by the researcher depending on: outputs of EViews 12.

From the table above, the error correction coefficient value is -0.28, less than one and negative with statistical significance at a 5% level, indicating the presence of a long-term equilibrium link as 28% of imbalances are corrected each year, meaning all imbalances are corrected within three years and six months.

It's also noted that FDI has a positive effect in the short term on GDP in Algeria, aligning with studies like (Huong, Duong, & Thuy, 2018).

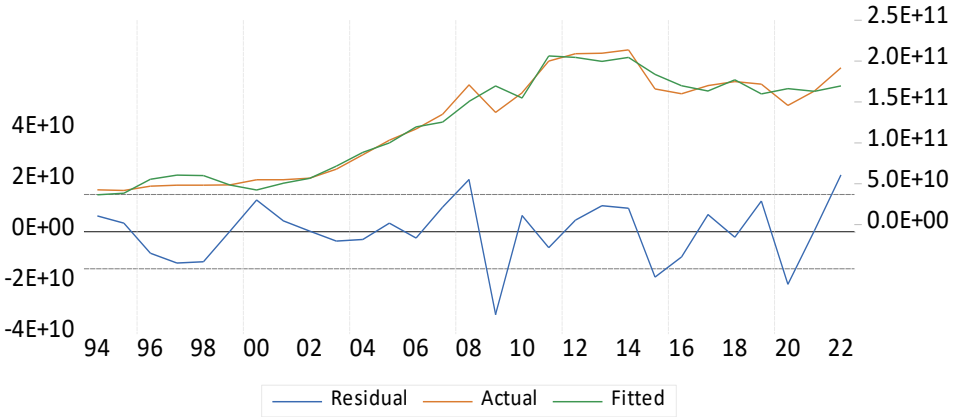
Diagnostic Tests for the FARDL Model

To validate the model's results, it must undergo a series of diagnostic tests as follows:

Actual and Estimated Values

The actual and estimated values are shown in the following figure:

Figure (03): Actual and Estimated Values



Source: Compiled by the researcher depending on: outputs of EViews 12.

From figure number (03), there is a match between the series of actual and estimated GDP (GDP) using the FARDL method, suggesting our model selection is sound.

Normal Distribution of the Model Residuals

This test helps to determine whether the residual series follows a normal distribution or not, thus the test hypotheses are formulated as follows:

- **Null Hypothesis H_0:** The random errors follow a normal distribution.
- **Alternative Hypothesis H_1:** The random errors do not follow a normal distribution.

The result of this test is observed in table number (12).

Table 12: Jarque-Bera Normal Distribution Test

Type of Test	Value	Probability
The Normal Distribution of Residuals	2.016717	0.364817

Source: Compiled by the researcher depending on: outputs of EViews 12.

From table number (12), the p-value is greater than 5%, meaning the null hypothesis is accepted, i.e., the residuals follow a normal distribution.

Homoscedasticity of the Residuals

To detect whether the residuals suffer from heteroscedasticity, making statistical inference more reliable, the following tests are used, and the test hypotheses are formulated as:

- **Null Hypothesis H_0:** There is no variance in error.
- **Alternative Hypothesis H_1:** There is variance in error.

Table 13: ARCH Test for Error Variance Homogeneity

Type of Test	Value	Probability
F-statistic	0.595908	0.4471
LM-statistic	0.627368	0.4283

Source: Compiled by the researcher depending on: outputs of EViews 12.

From the table above, the p-value for the tests is greater than the 5% level, hence we reject the alternative hypothesis and accept the null hypothesis, indicating no variance in error.

Autocorrelation of Errors

This test allows us to detect if there is an autocorrelation problem among errors, and the test hypotheses are:

- **Null Hypothesis H_0:** There is no autocorrelation among errors.
- **Alternative Hypothesis H_1:** There is autocorrelation among errors.

The result of this test is observed in the following table.

Table (14): Breusch-Godfrey Test for Error Autocorrelation

Type of Test	Q-Stat	Probability
F-statistic	2.235328	0.1374

Source: Compiled by the researcher depending on: outputs of EViews 12.

From table number (14), the p-value of the F-statistic is greater than 5%, hence we reject the alternative hypothesis and accept the null hypothesis, meaning there is no autocorrelation among errors.

Model Parameter Stability

The model parameter stability can be confirmed through the following two tests:

Suitability of the Model's Functional Form

The results of this test are documented in the following table:

Table 15: Test for the Suitability of the Model's Functional Form

Ramsey RESET Test			
Equation: FOURIERARDL			
Omitted Variables: Squares of fitted values			
Specification: GDP GDP (-1) GDP (-2) GDP (-3) GDP (-4) FDI FDI (-1) FDI (-2) COS(2*@PI*3.90999999999996*@OBSNUM/@OBSSMPL) SIN(2 *@PI*3.90999999999996*@OBSNUM/@OBSSMPL) C			
	Value	Df	Probability
t-statistic	0.202577	18	0.8417
F-statistic	0.041037	(1, 18)	0.8417
Likelihood ratio	0.066041	1	0.7972

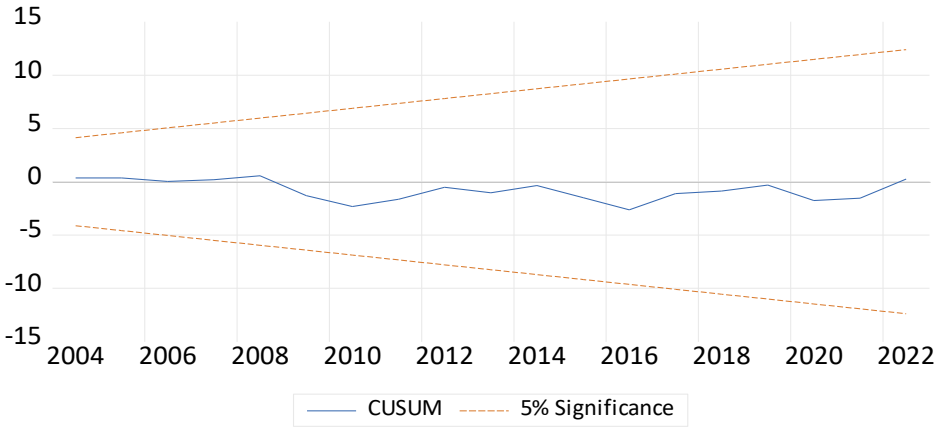
Source: Compiled by the researcher depending on: outputs of EViews 12.

From table number (F), all three statistics have accompanying probabilities greater than 0.05, thus we accept the null hypothesis, which states the model's functional form is suitable.

Structural Stability Tests

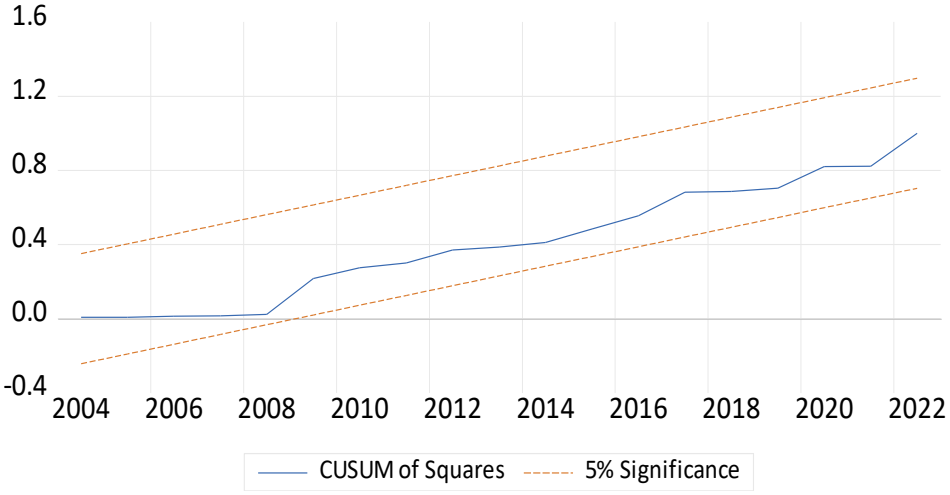
Through the results of the CUSUM Test and CUSUM of Squares, we observe that the plots for these tests lie within the 5% confidence bounds (between two straight lines), indicating structural stability. The following figures illustrate the above.

Figure 4: CUSUM Test Results



Source: Compiled by the researcher depending on: outputs of EViews 12.

Figure 5: CUSUM of Squares Test Results



Source: Compiled by the researcher depending on: outputs of EViews 12.

CONCLUSIONS

Through the econometric study, the impact of FDI on economic development in Algeria during the period 1990-2022 was identified, with the following results:

- Tracking the evolution of FDI flows to Algeria, it is noted that the direction of flows has undergone various changes. They decreased due to the economic and political disturbances experienced by the country and increased due to the reform programs implemented by the state.
- There is a statistically significant positive effect of FDI on the GDP in the long term;
- There is a statistically significant positive effect of FDI on the GDP in the short term;
- The error correction coefficient indicates the presence of a long-term equilibrium link between FDI and the economic development rate, with 28% of the imbalances corrected each year. In other words, all imbalances are corrected within three years and six months;
- FDI also has a positive effect in both the short and long term on the GDP in Algeria.

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