

Analysis of the Relationship Between Fiscal Policy and Economic Growth in Algeria: an Econometric Study Using the ARDL Model During the Period (1990-2024)

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Abstract :

This study analyzes the impact of fiscal policy on economic growth in Algeria during the period (1990-2024), by focusing on its basic tools such as government spending and tax revenues, in addition to foreign direct investment and population. Standard results using the ARDL model showed the existence of a long-term equilibrium relationship between these variables and GDP, as it was found that government spending contributes positively to stimulating growth in the short term but loses its effectiveness in the long term, while tax revenues have a positive and significant impact in the short and long term. The results also showed that foreign direct investment has a temporary negative impact in the short term and then turns into a positive impact in the long term, while the impact of population growth was negative. The study confirms that fiscal policy plays an important role in supporting economic growth, but it requires more efficient direction towards productive investment and improved resource management to ensure sustainable economic growth.

Key Words: Fiscal policy, economic growth, government spending, tax revenues, foreign direct investment.

JEL Classification : E62, O47, C32, O55.

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Introduction :

The relationship between fiscal policy and economic growth is a topic of great interest in financial and economic studies, and it has been approached from various perspectives. One of the most prominent economic schools of thought that has addressed this issue is Keynesianism, led by John Maynard Keynes, who considered fiscal policy an effective tool for addressing economic imbalances. This is due to its numerous instruments, which are among the most important tools of economic management in achieving economic development and growth, and in eliminating problems that hinder economic stability. In order to establish a flexible fiscal policy, many countries strive to provide the necessary resources, especially given the challenges of adapting to current global developments. These developments range from globalization and the emergence of the World Trade Organization to the proliferation of regional blocs, and culminate in the current

global crisis and popular movements that have impacted many economies. Like other developing countries, Algeria has demonstrated a strong desire to formulate a flexible fiscal policy through its efforts to create a favorable environment. These efforts include economic reforms, working to ensure political and security stability, enacting incentive-based laws and legislation, and participating in promotional events—all stemming from a belief in the importance of fiscal policy in driving economic growth. Based on the above, this study's central question is:

To what extent do fiscal policy tools influence economic growth in Algeria during the period 1990–2024?

Study hypotheses

- Government spending has a positive impact on economic growth in the short term.
- Tax revenues have a positive and significant impact on economic growth in the short and long terms.

Study method: The study relied on the descriptive and analytical approach in the theoretical aspect by presenting the concepts related to fiscal policy, its objectives and tools, in addition to analyzing previous literature, while in the applied aspect the standard approach was relied upon to measure the impact of fiscal policy on economic growth using the autoregressive distributed lag (ARDL) model.

Study objectives: This study aims to achieve a set of scientific and practical objectives related to analyzing the impact of fiscal policy on economic growth in Algeria, which can be summarized as follows:

- Analysis of the relationship between fiscal policy and economic growth in Algeria.
- Measuring the impact of government spending on economic growth in the short and long term, and determining its effectiveness in stimulating economic activity.
- Evaluating the role of tax revenues in supporting economic growth and achieving financial stability.
- Study the impact of foreign direct investment on economic growth, and analyze its temporal nature (short-term and long-term).
- Analyzing the impact of population growth on gross domestic product and the extent of its contribution to supporting or hindering economic growth.

I. Theoretical framework of fiscal policy:

1. Definition of fiscal policy:

Fiscal policy is defined as " the government's policy regarding public revenues, public expenditures, and public debt, with the aim of achieving economic stability and growth". (Dalton, 1954, p. 15)

Fiscal policy is defined as " the government's use of taxation and public spending tools to influence the level of aggregate demand and economic activity." (Keynes, 1936, p. 297)

Fiscal policy refers to "the government's use of budgetary policy to achieve the objectives of resource allocation, equitable distribution, and economic stability." ". (Musgrave & Musgrave, 1989, p. 6)

Fiscal policy is defined as: "The policy of using public finance tools, such as public spending programs and public revenues, to influence macroeconomic variables such as national output, employment, savings, and investment, in order to achieve desired effects and avoid undesirable effects on national income and output, employment levels, and other economic variables." (Penna, 2002, p. 21)

Fiscal policy also expresses: "The program that the state deliberately plans, using its revenue sources and expenditure programs, to produce desirable effects and avoid undesirable effects on all variables of economic, social and political activity in order to achieve the goals of society." (Hariz, 2014, p. 36)

Fiscal policy: "The use of specific government financial activities to develop and stabilize the economy. These activities are the tools of fiscal policy, namely taxes, expenditures, public debt management, and the general budget, and they must be consistent with and integrated with monetary, economic, and credit controls." (Kafi, 2017, p. 19)

2. Objectives of Fiscal Policy:

Fiscal policy seeks to achieve the objectives of public policy through the use of its various tools. With the expansion of the state's role in economic activity, it has become essential for the government to ensure its activities are coordinated and aligned with those of individuals, unifying goals and efforts to avoid conflict or competition. Therefore, fiscal policy must strive to achieve balance in the various aspects of the national economy, including social and overall equilibrium. In addition, fiscal policy plays a role in achieving other objectives within the broader framework of macroeconomic policy, which include: (Abdul Muttalib, 2002, p. 23)

- **Fiscal balance:** Utilizing and allocating state resources with maximum efficiency. The tax system should be adaptable to the needs of the public treasury in terms of flexibility and sufficiency, while considering the taxpayer's interests in terms of fairness in distribution, regularity of collection dates, and cost rationalization. Furthermore, borrowing should only be resorted to in order to achieve productive and developmental goals.

- **Economic equilibrium:** This is achieved through optimum production levels, which requires the government to strike a delicate balance between the activities of the public and private sectors to ensure maximum output. The more efficient and productive private enterprises prove to be compared to public enterprises, the less direct government intervention should be required, limiting its role to guidance and regulation through fiscal policy tools such as subsidies and, when necessary, taxes. Furthermore, the social benefits derived from government spending should not be less than those that could have been achieved had resources remained in the hands of individuals.
- **Social balance:** The meaning of social balance is that society reaches the highest possible level of well-being for individuals, within the limits of the capabilities of this society, and what social justice requires in terms of distributing products to individuals in a manner closer to justice and equality.
- **General balance:** General balance is the balance between total national spending and total national output at constant prices, at a level that allows the employment of all available factors of production. The tools used by the government are numerous and varied to reach this goal, the most important of which are taxes, loans, subsidies, exemptions, and participation with individuals in the formation of projects, and others.

3. Types of fiscal policy:

There are two types of fiscal policy: (Mankiw, 2016, pp. 331-332)

- **Expansionary fiscal policy:** This is a fiscal policy adopted by countries and governments in cases of economic recession and contraction, whereby they reduce taxes and increase government spending in order to influence aggregate demand and thus increase consumption and production, which leads to increased employment and the elimination of unemployment.
- **Contractionary fiscal policy:** This is a fiscal policy undertaken by countries and governments in cases of increased aggregate demand and inflation. It involves increasing taxes and reducing government spending, thereby reducing aggregate demand and bringing the general price level down to a certain point.

4. Fiscal policy tools:

Fiscal policy tools are the means used by the government to influence economic activity and achieve economic stability. . (Samuelson, & Nordhaus,, 2010, p. 304)

4.1. Government Spending:

Government spending is the primary and most direct tool of fiscal policy. It encompasses all expenditures made by the state to provide public goods and services, such as education, healthcare, and defense, in addition to investment spending directed towards infrastructure development and productive projects. This type of spending holds particular importance in Keynesian thought, as it is viewed

as an effective means of stimulating aggregate demand during economic recessions through the multiplier effect, where an increase in government spending leads to a greater increase in national income. Conversely, the state may reduce government spending during periods of inflation to mitigate pressures on demand and prices. Mankiw points out that the effectiveness of government spending depends on the nature of the expenditures and the efficiency with which they are directed, ensuring that they achieve social benefits that outweigh their economic costs.

4.2. Taxes:

Taxes are the primary tool for public revenue and play a pivotal role in financing government spending and influencing the economic behavior of individuals and institutions. Taxes are divided into direct taxes, such as income and profit taxes, and indirect taxes, such as value-added tax (VAT) and customs duties. Tax policy affects the disposable income of individuals and, consequently, their consumption, saving, and investment decisions. During recessions, a government can adopt an expansionary tax policy by reducing tax rates to stimulate aggregate demand, while tax increases are used as a contractionary tool to curb inflation or reduce budget deficits. McConnell and Brown emphasize that fairness and efficiency are among the most important criteria to consider when designing a tax system.

4.2. Government Transfers:

Government transfers occupy an important place among fiscal policy tools, even though they do not represent direct productive spending. They include payments made by the state to individuals without any corresponding goods or services, such as unemployment benefits, pensions, and social assistance. These transfers aim to improve the living standards of low-income groups, reduce poverty and inequality, and indirectly support aggregate demand by increasing household purchasing power. Blanchard points out that government transfers are a fundamental element in achieving the social dimension of fiscal policy, especially in modern economies. (Gruber, 2019, pp. 16-17)

4.3. Public Debt:

When public expenditures exceed revenues, the government resorts to public debt as a fiscal policy tool. This is done through domestic or external borrowing or the issuance of government bonds. Public debt is typically used to finance budget deficits or to fund major investment projects that contribute to long-term economic growth. However, excessive borrowing can lead to an accumulation of debt service burdens and have negative effects such as crowding out private investment and threatening fiscal sustainability. Therefore, economists emphasize the need for prudent public debt management and linking it to the productive capacity of the economy. (Michael & Others, 2017, p. 732)

4.5. The General Budget:

The general budget is the overarching framework through which fiscal policy is implemented. It includes estimates of public revenues and expenditures over a specific period, usually a fiscal year. The budget reflects the economic and social orientations of the state and is used to determine the size of the deficit or surplus, thus assessing the overall impact of fiscal policy on the economy. Musgrave argues

that the general budget is not merely an accounting document, but an economic tool used to achieve the three functions of the state: allocation, distribution, and economic stability. (Michael & Others, 2017, p. 728).

II. Previous studies:

1. **(Zervas & Thomakos, 2026)** aims to analyze the divergent effects of government spending and tax components on the supply side of the Greek economy during the period from the first quarter of 1999 to the fourth quarter of 2019, using structural vector autoregression (SVAR) methodology to estimate the value-added response of different economic sectors (industry as a tradable sector, and services as a non-tradable sector) to financial shocks. Through the analysis of variables including total spending and its sub-components and tax revenues, along with macroeconomic variables, the study concluded that government spending tends to primarily stimulate the services sector (non-tradable), while the tax burden exerts a sharp contractionary effect with a multiplier of up to (-2), disproportionately targeting the industrial sector (tradable). This leads to the conclusion that the fiscal mix adopted in the economic adjustment programs—which focused on increasing taxes, reducing wages, and government consumption—was "self-destructive," as it undermined the productive base and deepened the recession instead of supporting the shift towards an export-led growth model.
2. **(Lee, 2026)** aims to examine the effectiveness of fiscal policy in South Korea and its role in achieving economic stability, with a particular focus on "state-dependent economics" (distinguishing between recession and recovery periods) and analyzing the impact of unexpected shocks and different spending components, covering a period from the first quarter of 1979 to the fourth quarter of 2021. To achieve this objective, the study used key macroeconomic variables including GDP, private consumption, investment, and government spending components (consumption, investment, and transfers), relying on the standard "local projection" model based on the methodology of Auerbach and Gorodnichenko (2013), which allows for the non-linear estimation of fiscal multipliers based on the business cycle. The results concluded that fiscal policy is more effective and influential during recessions (slack) compared to recovery periods (boom), as unexpected government spending shocks showed a greater stimulating effect than expected changes, and the effectiveness of spending components varied. Government investment spending achieved the highest fiscal multiplier (exceeding 3 during recessions), while direct government procurement was generally more effective than government transfers.
3. **(Gnahe, 2025)** aims to investigate the non-linear relationship and determine the optimal size of government financial spending allocated to disaster relief and its impact on economic growth, applying it to the case of China using panel data for 31 provinces during the period from 1990 to 2021. The

study's analysis relied on the per capita real GDP growth rate as the dependent variable, while using the size of disaster relief spending as the threshold variable and main independent variable, while controlling variables including capital growth, labor force growth, total factor productivity growth, and institutional level. To achieve this, the researcher employed a theoretical framework based on the Stochastic General Equilibrium (DSGE) model and applied the Dynamic Panel Threshold Model to address internal issues. The results concluded that there is an inverted U-shaped relationship between the two variables, with an optimal threshold point for spending being identified at 0.856%. Spending below this threshold significantly boosts economic growth (by 1.373% for every 1% increase), while this positive effect fades and becomes negligible when the threshold is exceeded, indicating the need for the government to adhere to a moderate spending range to ensure economic efficiency.

4. **(Nyiwul, Hu, & Koirala, 2025)** examines the complex dynamics between natural resource dependence and economic growth across a global sample of 150 countries during the period 1990–2021, with a particular focus on the mediating role of fiscal policy. Econometric analyses (using Panel IV and SVAR models) confirmed the existence of a “resource curse” that hinders growth, but also revealed that expansionary fiscal policy acts as an effective tool for mitigating this curse. However, the study highlights a fundamental economic dilemma: while increased government spending successfully addresses the consequences of resource dependence, it also has a direct negative impact on economic growth (often attributed to crowding out), partially offsetting the gains achieved. The robustness of these findings is confirmed across different resource types (such as oil, minerals, and forests), with the effect being most pronounced in resource-rich developing countries, while developed countries are largely immune to this curse thanks to their strong institutional and economic structures.

III. Econometric study:

This study relies on a set of variables that define the relationship between the independent variables: (GOV) government spending, (TAX) tax revenues, (POP) population, (FDI) foreign direct investment, and the dependent variable, (GDP) gross domestic product, according to statistics and data available at the World Bank level. Through this standard study, we attempt to understand the relationship between fiscal policy and economic growth in Algeria during the period (1990-2024). Accordingly, the study model was formulated as follows:

- $GDP = f(GOV, TAX, FDI, POP)$
- GDP : Gross Domestic Product (Dollars)
- GOV : Government spending (dollars)
- POP : Population
- FDI : Foreign direct investment (dollars)
- TAX : Tax revenues (dollars)

The logarithm was included:

$$LGDP = \beta_0 + \beta_1 LGOV + \beta_2 LTAX + \beta_3 LFDI + \beta_4 LPOP + \mu_i$$

1. Stability tests:

Before estimating the model, we test the stationarity of the time series to ensure that all variables are stationary of order zero (I(0)) or order one (I(1)) and to ensure that there is no complete time series of order two. This is to ensure the condition for applying the ARDL model.

Table 1 : Time Series Stationarity Test

	Level		1 st Difference		
	ADF	PP	ADF	PP	
LFDI	0.95 (0.90)	1.12 (0.92)	-6.49 (0.00)***	-6.54 (0.00)***	(1)I
LGDP	1.92 (0.98)	1.67 (0.97)	-4.79 (0.00)***	-4.84 (0.00)***	(1)I
LPOP	0.15 (0.72)	1.31 (0.99)	-2.25 (0.03)**	-3.29 (0.00)***	(1)I
LGOV	1.88 (0.98)	1.62 (0.97)	-4.96 (0.00)***	-5.02 (0.00)***	(1)I
LTAX	1.27 (0.94)	1.24 (0.94)	-5.11 (0.00)***	-5.12 (0.00)***	(1)I
GDP	-0.84 (0.79)	-0.83 (0.79)	-5.07 (0.00)***	-5.08 (0.00)***	(1)I

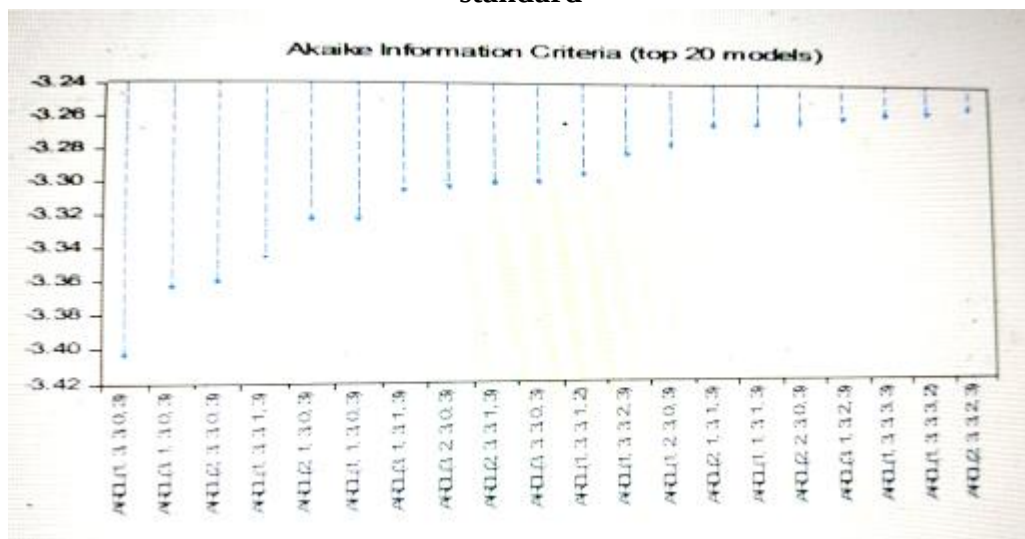
Source : Based on the output of Eviews 10

From Table No (1), the ADF test indicated the stability of all variables at the first difference (1) I, and therefore it can be said that all the variables under study are complementary to the same degree. As for the PP test, it indicated the stability of all variables at the first difference (1) I, and therefore it can be said that all the variables under study are complementary to the same degree, and therefore the ARDL model can be used.

The ARDL model is a model introduced by Pesaran & Shin (1999) and Pesaran et al. (2001) and further developed by Shin & al. (2014). It is based on the Autoregressive Distributed Lag (ARDL) model.

2. Selecting the best lag periods for variables in the ARDL model estimation:
electing the best lag period according to the (AIC) standard is done as follows:

Fig. 1 : Results of selecting the best slowdown periods according to the (AIC) standard



Source : Based on the output of Eviews 10

Figure 1 shows that the best model according to the (AIC) standard is (1,3,3,0,3) ARDL.

3. Bounds test:

Table No (2) shows the results of the cointegration test using the Bounds test methodology. The results indicate that the calculated value of F-statistic is greater than the critical values of the upper bound at most of the significance levels (10%, 5% and 1%). Therefore, we reject the null hypothesis “no cointegration” and accept the alternative hypothesis “there is a long-term equilibrium relationship” between the study variables.

Table 2: Bounds test

F-statistic (calculated)		
16.07		
Critical values	Minimum I(0)	Upper limit I(1)
At a significance level of 10%	2.2	3.09
At a significance level of 5%	2.56	3.49
At a significance level of 1%	3.29	4.37

Source : Based on the output of Eviews10

4. Estimating the Autoregressive Distributed Lag (ARDL) model:

Table 3: Results of the ARDL model test

Dependent Variable: LGDP
 Method: ARDL
 Date: 02/20/26 Time: 13:52
 Sample (adjusted): 1993 2024
 Included observations: 32 after adjustments
 Maximum dependent lags: 3 (Automatic selection)
 Model selection method: Akaike info criterion (AIC)
 Dynamic regressors (3 lags, automatic): LGOV LPOP LTAX LFDI
 Fixed regressors: C
 Number of models evaluated: 768
 Selected Model: ARDL(1, 3, 3, 0, 3)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LGDP(-1)	0.323804	0.108599	2.981636	0.0084
LGOV	0.395551	0.108634	3.641140	0.0020
LGOV(-1)	-0.480929	0.136030	-3.535471	0.0025
LGOV(-2)	0.173147	0.102114	1.695635	0.1082
LGOV(-3)	-0.115148	0.061187	-1.881915	0.0771
LPOP	-12.04408	13.62853	-0.883740	0.3892
LPOP(-1)	-0.109476	24.02433	-0.004557	0.9964
LPOP(-2)	-23.02163	26.31485	-0.874853	0.3938
LPOP(-3)	34.61967	13.58465	2.548441	0.0208
LTAX	0.845464	0.112666	7.504174	0.0000
LFDI	-0.012816	0.011711	-1.094361	0.2891
LFDI(-1)	-0.002531	0.013202	-0.191728	0.8502
LFDI(-2)	0.025656	0.012681	2.023271	0.0591
LFDI(-3)	0.022789	0.010567	2.156644	0.0456
C	8.815495	4.821313	1.828443	0.0851
R-squared	0.998140	Mean dependent var	25.49118	
Adjusted R-squared	0.996609	S.D. dependent var	0.650656	
S.E. of regression	0.037892	Akaike info criterion	-3.403187	
Sum squared resid	0.024408	Schwarz criterion	-2.716123	
Log likelihood	69.45099	Hannan-Quinn criter.	-3.175445	
F-statistic	651.6853	Durbin-Watson stat	2.182463	
Prob(F-statistic)	0.000000			

Source : Based on the output of Eviews10

From Table No (3), we note that the explanatory power and coefficient of determination (R^2) of this model reached 99.81%, meaning that the independent variables explain 99.81% of the dependent variable, and the remaining percentage is due to factors outside the model or to variables not included in the model.

5. Model diagnostic tests:

Before conducting the long-term and short-term relationship assessment, a Serial Correlation LM Test (SCT) must be performed to detect the presence of an autocorrelation problem between the residuals. If there is an autocorrelation between the residuals, the model studied and proposed for studying the relationship between the research variables cannot be accepted. The Autocorrelation Test, the

Instability of Variance Test, the Normality of Residuals Test, and the Model Characterization Test all demonstrate the model's effectiveness.

5.1. Identifying the presence of a self-correlation problem between the estimation residuals:

Table 4: Autocorrelation test between residues

Breush-Godfrey serial correlation LM Test			
F-statistic	0.40	Prob. F(2,15)	0.67
Obs*R-squared	1.62	Prob. Chi-Square(2)	0.44

Source : Based on the output of Eviews10

We note from Table No. (4) the results of the (LM Test) that the Fisher probability value is 0.74, which is greater than the significance level of 5%, meaning that the null hypothesis “there is no autocorrelation between the residuals” can be accepted, and therefore the alternative hypothesis “there is an autocorrelation between the residuals” is rejected.

5.2. Test for instability of variation:

Table 5: Test of Variance Instability

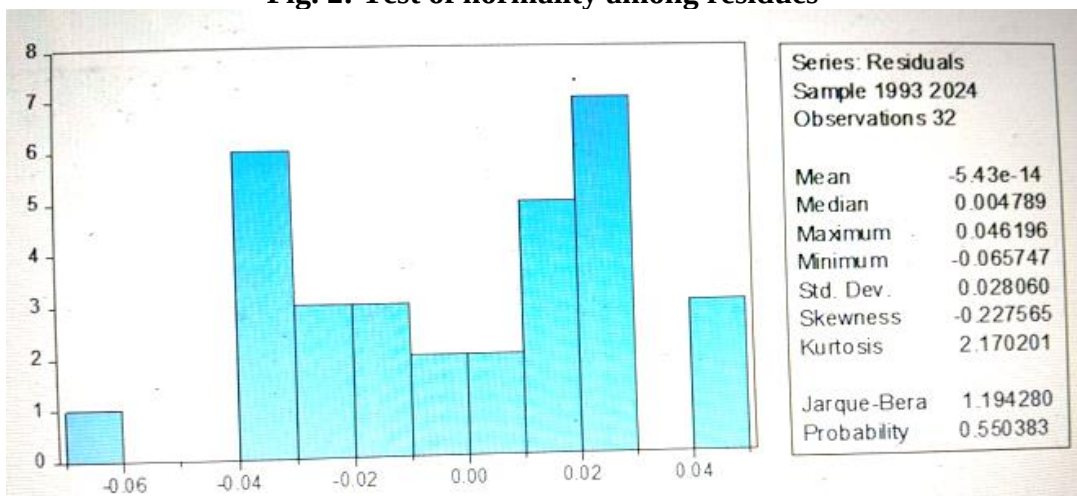
Heteroskedasticity Test ARCH			
F-statistic	0.17	(Prob. F(1,28))	0.67
Obs*R-squared	0.19	Prob. Chi-Square (1)	0.66

Source : Based on the output of Eviews10

We note from Table No. (5) that the Fisher probability value is 0.67, which is greater than the significance level of 5%, meaning that the null hypothesis (non-invariance of variance) can be accepted, and therefore the alternative hypothesis can be rejected.

5.3. Testing the normality of the distribution among the residues:

Fig. 2: Test of normality among residues



Source : Based on the output of Eviews10

We note from Figure 2 that the probability value jarque-bera is 0.55, which is greater than the significance level of 5%. Therefore, the residuals of the regression estimate follow a normal distribution.

5.4. Model description:

Table 6: Model Description

Ramsey RESET Test			
	Value	df	Probability
t-statistic	0.70	16	0.49
F-statistic	0.49	(1,16)	0.49

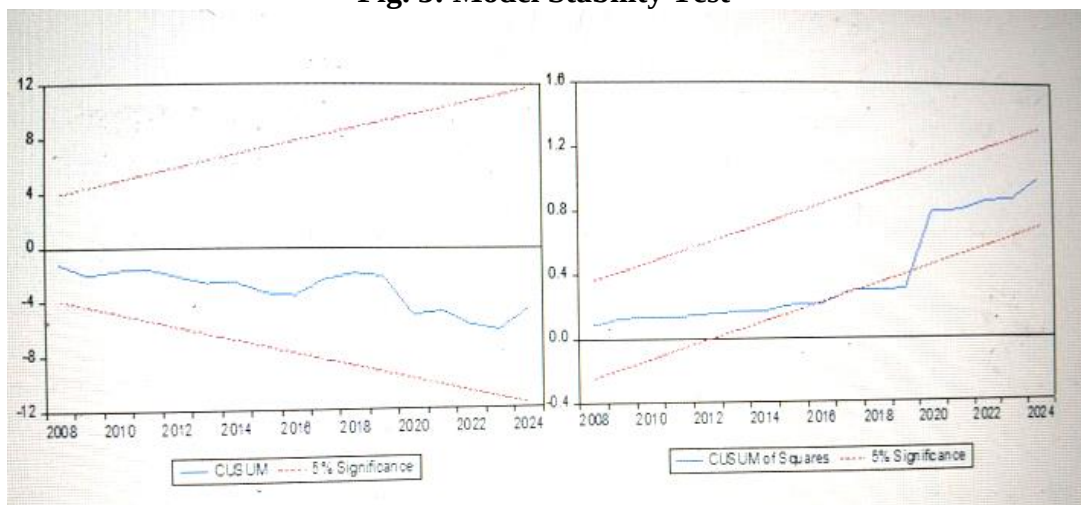
Source : Based on the output of Eviews10

From Table No (6), the probability value is 0.49, which is greater than the significance level of 5%, which confirms the acceptance of the null hypothesis: "The model is appropriately and correctly defined".

6. Model stability test:

To ensure that the data used in this study are free from any structural changes, it is necessary to use one of the appropriate tests for this purpose, such as: the cumulative sum of repeated residuals (CUSUM) as well as the cumulative sum of squares of repeated residuals (CUSUM of Squares). Accordingly, the structural stability of the estimated coefficients of the error correction formula for the distributed time gap autoregression model is achieved if the graph of the tests for both CUSUM and CUSUM of Squares falls within the critical limits at the 5% level.

Fig. 3: Model Stability Test



Source : Based on the output of Eviews10

From Figure (3), we note that the CUSUM (Cumulative Sum of Recurring Residues) test and the CUSUM (Cumulative Sum of Squares) test for this model

are considered a linear mean within the limits of the critical region, indicating a kind of stability in the model at a significance level of 5%. It is clear from these two tests that there is stability in the model between the long-term results and the short-term results.

7. Results of long-term and short-term relationship assessment:

After ensuring the model is free from structural problems related to serial linkage and stability, we will conduct long-term and short-term testing.

Table 7: Results of short-term relationship assessment

Variable	Coefficient	t-Statistic	Prob
<i>D(LGOV)</i>	0.39	3.64	0.00
<i>D(LGOV (-1))</i>	-0.17	-1.69	0.10
<i>D(LGOV (-2))</i>	0.11	1.88	0.07
<i>D(LPOP)</i>	-12.04	-0.88	0.38
<i>D(LPOP (-1))</i>	23.02	0.87	0.39
<i>D(LPOP(-2))</i>	-34.61	-2.54	0.02
<i>D(LTAX)</i>	0.84	7.50	0.00
<i>D(LFDI)</i>	-0.01	-1.09	0.28
<i>D(LFDI (-1))</i>	-0.025	-2.02	0.05
<i>D(LFDI (-2))</i>	-0.022	-2.15	0.04
<i>CointEq(-1)</i>	-0.67	-6.22	0.00

Source : Based on the output of Eviews10

Table 8: Results of long-term relationship assessment

Variable	Coefficient	t-Statistic	Prob
<i>LGOV</i>	-0.04	-0.30	0.76
<i>LPOP</i>	-0.82	-1.68	0.11
<i>LTAX</i>	1.25	6.49	0.00
<i>LFDI</i>	0.04	2.97	0.00
<i>GDP</i>	0.16	7.55	0.00
<i>C</i>	13.03	1.62	0.12

Source : Based on the output of Eviews10

From Table (7) and (8) we observe the following:

- A significant positive relationship exists between government spending and GDP (a direct relationship) in the short run at a significance level of 5%. This relationship becomes inverse and insignificant in the long run at the same level. A 1% increase in government spending leads to a 0.39% increase in economic growth in the short run, while a 1% increase in government spending leads to a 0.040% decrease in economic growth in the long run. This result can be explained according to Keynesian theory, which asserts that government spending is a key

tool for stimulating aggregate demand, leading to increased production, employment, and income through the fiscal multiplier effect. This effect is expected in the Algerian economy due to the state's significant role in economic activity and the economy's heavy reliance on public spending to finance projects, infrastructure, and stimulate productive activity. However, in the long run, this suggests that the effectiveness of government spending may only be temporary. This can be explained according to classical economic theory and the theory of competition, where the expansion of government spending may lead to an increase in public borrowing and higher interest rates, which limits private investment and negatively affects long-term economic growth, especially if the spending is not directed towards highly efficient productive projects.

- There is a negative but insignificant relationship between population size and GDP (an inverse relationship) in both the short and long run at a significance level of 5%. A 1% increase in population leads to a 12.04% decrease in economic growth in the short run and a 0.82% decrease in the long run. This indicates that population growth does not necessarily lead to increased economic output. Economically, this can be explained by the fact that population growth can strain economic resources if it is not matched by increased productivity, employment opportunities, or human capital. This aligns with some economic growth theories, specifically Malthusian growth theories, which suggest that rapid population growth may outpace the growth rate of economic resources, leading to a decrease in per capita GDP.

- A positive and significant relationship exists between tax revenues and GDP (a direct relationship) in both the short and long term at a significance level of 5%. A 1% increase in tax revenues leads to a 0.84% increase in economic growth in the short term and a 1.25% increase in the long term. This result can be explained by the fact that tax revenues are a primary source of funding for government spending and public investments, thus boosting economic activity. Furthermore, increased tax revenues may reflect improved formal economic activity and a more developed tax administration, which contributes to financial stability and stimulates economic growth. Increased taxes support sustainable economic growth, and an effective tax system enhances the state's financial stability, provides the necessary resources to finance infrastructure and public services, and improves the efficiency of economic institutions, all of which positively impact long-term economic growth.

- There is a negative and insignificant relationship between foreign direct investment (FDI) and GDP (an inverse relationship) in the short run at a significance level of 5%. This relationship becomes positive and significant in the long run at a significance level of 5%. A 1% increase in FDI leads to a 0.012% decrease in economic growth in the short run, while a 1% increase leads to a 0.04% increase in economic growth in the long run. This can be explained economically by the fact that foreign investments require a period of time before generating productive returns. Initially, they may be accompanied by the transfer of profits abroad or weak integration into the domestic economy, leading to a temporary negative impact on GDP. However, this impact does not necessarily reflect the true

long-term effect of FDI. The shift to a positive and significant impact in the long run reflects its role in technology and knowledge transfer, improving productivity, increasing employment opportunities, and boosting capital. This aligns with the theory of endogenous growth, which emphasizes that FDI is a significant source of technological advancement and improved economic efficiency.

- Regarding the error correction limit (CoinEp(-1)), a negative and significant signal (-0.67) appeared at a significance level of 5%, which confirms the existence of a long-term equilibrium relationship (the existence of cointegration) between the study variables, which indicates that errors in equilibrium are corrected in a period of time less than one year.

Economic Interpretation :

The results showed a negative long-term impact of public spending on economic growth. This can be attributed to the dominance of operating expenses (especially wages) in the structure of public spending at the expense of investment spending and financing of productive projects. This reflects the rentier nature of the Algerian economy. The emergence of a negative long-term signal based on the benchmark results indicates a problem in the allocation of financial resources for spending and their failure to be directed towards more productive investments. On the other hand, despite their size, public capital expenditures and investments have focused heavily on basic infrastructure (roads, buildings, ports, etc.) without being transformed into productive projects capable of increasing production, diversifying income sources, and raising the value of exports.

Conclusion :

This study reveals that fiscal policy is among the economic activities that have witnessed significant progress and have garnered the attention of economists in the past and present in most countries due to its potential impact on economic growth. In Algeria, fiscal policy is closely linked to global oil prices, and government spending plays a vital role in economic activity and the overall development trajectory of any country. Within this framework, Algeria, like other nations, has sought to formulate a flexible fiscal policy and allocate funds to productive development projects, particularly after implementing several reforms encompassing economic, political, and regulatory aspects, all aimed at achieving sustainable development in Algeria. This study yielded the following results:

- The study confirms the existence of a long-term equilibrium relationship between fiscal policy variables and economic growth, indicating that changes in government spending and tax revenues sustainably affect the growth trajectory.
- The results showed that government spending plays a positive and stimulating role in economic growth, especially when it is directed towards productive investments and infrastructure.

- The study showed that tax revenues can have a dual effect; they support the financing of public spending, but they can negatively affect economic activity if they rise excessively.
- The results revealed the importance of foreign direct investment as a supporting factor for growth, as it contributes to technology transfer, increased productivity, and job creation.
- The study showed that stability in fiscal policies and improving their efficiency contribute to achieving sustainable economic growth, and enhance the economy's ability to cope with external shocks.

Recommendations:

A number of important policy recommendations can be drawn:

- **Restructuring government spending:** The need to shift the focus of spending from current consumption expenditures to long-term productive investments in infrastructure, education, health and scientific research.
- **Reforming the tax system:** expanding the tax base, improving collection efficiency, and reducing reliance on fuel revenues.
- **Improving the foreign investment environment:** Addressing institutional and bureaucratic challenges to attract quality foreign investments with strong links to the local economy.
- **Population policies:** Adopting policies to address demographic challenges through intensive investment in human capital and the creation of productive employment opportunities.
- **Economic diversification:** Reducing dependence on the hydrocarbon sector and developing diverse productive sectors capable of creating sustainable added value.

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