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MEASURING THE IMPACT OF ECONOMIC DIVERSIFICATION ON INFLATION RATES IN ALGERIA AN ECONOMETRIC STUDY DURING THE PERIOD (1999-2022) USING THE ARDL MODEL

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Abstract. *This study aims to determine the impact of economic diversification on inflation rates in Algeria during the period (1999-2022), in order to highlight the importance of adopting an economic diversification policy to control inflation rates at acceptable levels. Algeria, as one of the countries with a rentier economy that relies heavily on hydrocarbon revenues, the prices of which are determined in global markets based on factors external to the national economy, and which have experienced significant fluctuations during the study period, necessitates Algeria's search for new revenues through diversifying its economic resources and relying on sectors other than hydrocarbons, thus strengthening the productive apparatus which results in achieving acceptable inflation rates.*

Using the ARDL model, the study reached results, the most important of which is the existence of an almost long-term relationship with most sectors of the real economy, as they contribute to reducing inflation rates, although they are somewhat weak, and therefore they must be supported to achieve greater contributions to the gross domestic product and gradually move away from dependence on the hydrocarbons sector.

Keywords: *economic diversification, inflation, ARDL.*

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Introduction

For decades, the economies of rentier states have experienced high levels of inflation due to the weakness of their productive apparatus on one hand and their reliance on a single source of income on the other, which has made them heavily dependent on the dominance of major economies, with one of the effects of this dependence being high inflation rates. This situation has compelled the adoption of a series of measures to strengthen the local economy and reduce reliance on a single sector. Foremost among these is the policy of economic diversification, which aims to boost revenues from various sectors of the real economy: agriculture, industry, and services.

Algeria is one of these countries where hydrocarbon revenues account for a very large share, at 60%, and more than 50% of total public revenues. With the fluctuations in their prices, it clearly affects various macroeconomic variables of the Algerian economy, including inflation rates. Hence, it is necessary for the Algerian state to adopt a policy of diversifying its revenue sources, relying on increasing the contributions of various sectors of the real economy. This results in strengthening the local productive apparatus, which enables it to control and manage prevailing inflation levels.

In the context of the above, the importance of economic diversification for controlling inflation rates becomes evident, which was the subject of our study based on the following problem: ***To what extent does economic diversification affect inflation rates in Algeria during the period 1999-2022?***

Sub-questions:

• What is meant by economic diversification? And what are the motives for adopting an economic diversification policy?

• What are the types of inflation? And what are its determinants and causes?

What is the relationship between diversification in the revenues of various sectors of the Algerian economy and its inflation rates?

Hypotheses:

1. Economic diversification is an economic policy used by many countries to move away from the dominance of a single sector over revenues and to increase the contribution of other economic sectors to raising the gross domestic product.

2. There are many forms of inflation; some are based on its severity, others on its source, others on government intervention in price policy, and still others based on the economic sector.

3. Inflation is determined by several factors, including: public debt, the size of the money supply, the level of budget deficit and the level of prevalent corruption, the applied interest rate, and the prevailing exchange rate.

Literature Review

Definition of Diversification and its Types:

Economic diversification is one of the main methods for building a solid and flexible productive base, and due to its great importance, especially in rentier states, many researchers and economists, both Arab and foreign, have been interested in this important topic. The study begins with an outline of the key concepts of economic diversification:

Definition of Economic Diversification:

The concept of economic diversification has been addressed in many studies and scientific research as diversification is one of the main strategies for change, which imposes adding new activities offered by the firm (Lagarde, 2006).

The Arab Planning Institute defines it as: a development policy aimed at reducing various economic risks and increasing value added, improving the income rate, and is achieved by directing the economy away from relying on a single market, sector, or product, towards diversifying into various or new sectors or markets. In other words, economic diversification can mean diversifying the sources of gross domestic product, diversifying sources of general budget revenues, or diversifying external markets (Matezo et. al., 2021).

In its simple meaning, diversification is referred to as not putting all eggs in one basket. Relying on a single source or limited sources, as is the case in some countries, especially Arab ones that depend on a natural resource like oil and gas, makes any economy vulnerable to the risks of those sources. Therefore, if there is economic diversification in a country, relying on diverse and non-concentrated productive sectors, it will have a positive impact on diversifying income sources and increasing returns from production. Consequently, this may lead to an increase in income levels and more job opportunities, improving individuals' standard of living.

Types of Economic Diversification:

The types of economic diversification can be summarized as follows:

a) Diversification of the productive structure: This type involves achieving an increase in productivity and applies to economies that rely mainly on using natural resources in producing and

exporting primary products. The goal of this type is to diversify the economy by investing in new production sectors, which helps reduce dependence on a limited set of economic activities, thus avoiding the phenomenon of the “resource curse” or what is known as the “Dutch disease”. This economic diversification is achieved at two different levels.

Micro Level: Through diversifying and modernizing the product portfolio based on technological development, scientific research, and appreciation of competencies, thus achieving greater growth, profits, and high returns for the business sector.

Macro Level: Which is achieved by realizing the gross domestic product and generating national income through the participation of all economic branches and sectors?

b) Diversification of Markets/External Trade: Heavy reliance on a single market or a few markets generates negative effects on countries' economies, as changes in supply and demand may affect the economy more adversely than if there was a diverse mix of markets. Also, accessing new markets with new products can contribute to earning profits and achieving industrial competitiveness.

Determinants of Economic Diversification:

Following the types of economic diversification, the determinants are examined, which include the following elements:

Volume of Investments: The volume of investments and the rate of capital formation is an important determinant of the degree of economic diversification, and the lower the economic diversification index, the more it drives countries to increase the volume of investments.

1.3.2. Economic Growth Rate: Increasing economic growth rates contributes to increasing opportunities for diversification in production due to increased purchasing power, and this leads to raising diversification rates in the economy.

Foreign Trade Policies: The free trade policies applied in the country allow for an increase in the level of specialization, and over time, the importance of goods of comparative advantage increases in raising the economic diversification index and limiting the impact of external shocks.

Level of Stability of Macroeconomic Policies: Where the stability of economic policies in many cases increases the degree of diversification, such as controlling inflation rates and the applied exchange rate policies.

Good Governance: It is a fundamental factor for creating a suitable environment to promote economic diversity, through developing and implementing policies aimed at promoting growth in emerging sectors and developing them so that they contribute positively to the national economy.

Role of the Private Sector: The private sector has great importance in promoting economic diversification, through developing unexploited sectors and investing in research and development to find new activities that contribute to enhancing economic diversification. However, the effective performance of the private sector depends on improving government industrial policies and removing bureaucratic obstacles that stand in the way of a suitable business environment.

Mechanisms of Economic Diversification:

The basic drivers of the economic diversification policy are generally as follows:

Economic diversification results in raising economic growth rates by diversifying and increasing investment opportunities, which reduces investment risks.

Concentrating investments in a limited number of activities causes risks related to investment, and to reduce them, investments are distributed over a wide range of economic activities. Reducing risks leading to a decline in export earnings: a characteristic of countries with weak economies is their dependence on a single product or a limited number of products, and when the prices of these products fall, export revenues decline.

Measuring the Degree of Economic Diversification*:*

Indicators Measuring the Extent of Economic Diversification: Among the most important indicators indicative of evaluating economic diversity policies that can be cited are Structural change as a degree and rate indicated by the percentage of the natural resource sector relative to other sectors in the total gross domestic product, in addition to the growth or decrease in the

contribution of these sectors over time. It is also good to measure the real growth rate of GDP per sector:

- The relationship between the instability ratio of total GDP and the instability of resource prices, as diversification prevents stability in it over time.
- Prosperity in total employment volume per sector, and this measure is reflected in and changes with the sectoral composition of GDP.
- And there are many measures such as the ratio of natural resource revenues to total revenues, the value of the contribution of both the (Kripfganz, 2020) private and public sectors, the productivity measure, and measures of export orientation diversity (Guerroumi & Benlecheb, 2018).

Methods

Measuring the Degree of Economic Diversification:

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Measuring the Degree of Economic Diversification: Despite the existence of many indicators that point to the extent of economic diversification in a country, they do not provide us with an accurate picture of the degree of economic diversity, due to the diversity and multiplicity of indicators used in determining the extent of diversification. When comparing the extent of economic diversification among a group of different countries or within the same country during different periods, it is necessary to rely on a single indicator only to measure the degree of economic diversification. There are two main measures among those used to determine the degree of economic diversification. The first is the Herfindahl-Hirschman Index (HHI), and the second is the Vladimir Kossov Index.

Herfindahl-Hirschman Index: Known in abbreviation as (*HHI*) and considered the most common, it measures the structure and composition of a variable and its degree of diversity. It is used to measure diversity in the structure of a particular phenomenon and to highlight the structural changes that have occurred in its components. This coefficient is widely applied in measuring economic diversity. This coefficient was originally designed to measure the level of concentration in an industry or a specific sector, and it was widely used by American courts in the eighties to show the extent of monopoly in a particular industry or sector. HHI is defined by the following formula (Lapteacru, 2012):

$$HHI = \frac{\sqrt{\sum_{i=1}^{n}\left(\frac{X_i}{X}\right)} - \sqrt{\frac{1}{N}}}{1 - \sqrt{\frac{1}{N}}} \quad (1)$$

X_i - The value of the variable in the activity;

X - The total value of the variable in all activities;

N - The number of activities that make up the studied structural composition.

HHI − Herfindahl-Hirschman index, its values range between 0 and 1. There is complete diversity when it takes the value 0, meaning that all sectors contribute equally to economic growth. At the value 1, the amount of diversity is small, which is the case where output is concentrated in only one sector.

Vladimir Kossov Index (VKI): This index takes the following formula (Al-Musbah, 2008):

$$VKI = \frac{\sum_{i=1}^{n} X_i - \sum_{j=1}^{m} C_j}{\sum_{i=1}^{n} X_i + \sum_{j=1}^{m} C_j} \times 100\% \quad (2)$$

where:

X_i- export transactions

C_j- countertrade transactions (barter, clearing, offset, etc.).

Vladimir Kossov Index (VKI), where whenever the value VKI = 0 is reached, this indicates structural changes in the economy in question, and conversely, if the value of VKI deviates from 0, it indicates a lack of those structural changes.

Results

General Concepts about Inflation:

Definition of Inflation:

Inflation is defined as “a continuous and noticeable increase in the general price level in a country” (Ball & Mankiw, 2002). Also, inflation can be defined as the continuous decline in the real value of the monetary unit (Al-Safi et al., 2011). In turn, “J. Olive” defined inflation as the rise in the general level of prices, not the rise in prices of some goods (a rise that generates other rises).

Types of Inflation:

From the previous definitions of the phenomenon of inflation, it is clear that there are significant differences in viewpoints regarding this phenomenon. These differences are explained by the existence of several types of inflation classified according to several criteria, and these types share one characteristic, which is the inability of money to perform its functions completely (Friedman, 1963). The most important types of inflation will be reviewed below based on several criteria:

Based on the severity of inflationary pressure:

1. Creeping Inflation: Creeping inflation is known as: a rise in prices that does not cause a significant deviation in prices or revenues (Samuelson, 1960). However, it is believed that if price growth continues for an extended period, it may pose a significant risk. Nonetheless, a price increase at an annual rate not exceeding 3% is generally considered creeping inflation and does not lead to major economic imbalances.

2. Galloping Inflation: It is one of the most dangerous types of inflation for the national economy (Dornbusch, 1986). It is that inflation whose rate exceeds 50% monthly and is called hyperinflation.

3. Walking Inflation: Occurs when prices rise at rates between 5% and 10% annually, which necessitates controlling it, because it may enter price increases into a vicious circle leading to their rise at high rates (Shiller, 2019).

4. Imported Inflation: It is that rise in the domestic general price level resulting from the rise in the general world price level in international markets for imported goods and services.

Based on government intervention in the price mechanism: The state's control over the price mechanism, monitoring the movements of general price levels and how to influence them may determine some types of inflationary trends (Akerlof, 1996).

Introduction to the (ARDL) Model:

Within the framework of this study, the ARDL methodology developed by Pesaran & Shin (1999) is employed, as this method does not require the time series to be integrated of the same order. Pesaran believes that testing for cointegration using ARDL is done through the Bound Test method, which can be applied regardless of the characteristics of the time series, whether they are integrated of order X_i or integrated of order C_j, or a mixture of both. The only condition for applying this test is that the time series should not be integrated of order two VKI.

Estimation Steps According to the (ARDL) Model:

According to the study methodology, the ARDL method will be used in three stages. First, the extent of the long-run relationship among the study variables will be tested within the framework of the (UECM) model. Pesaran & Shin (1999) provide a modern approach to test the existence of an equilibrium relationship between variables under the unrestricted error correction model, and this method is known as the (bounds testing approach). The model takes the following form:

$$\Delta Y_t = \alpha_0 + \sum_{i=1}^{m} \beta_i \Delta Y_{t-1} + \sum_{i=0}^{n} \theta_i \Delta X_{t-1} + \lambda_1 Y_{t-1} + \lambda_2 X_{t-1} + \epsilon_t \quad (3)$$

Where the coefficients λ_1 and λ_2 represent the long-term relationship parameters, while β and θ represent the short-term parameters. They refer to the first differences of the variables, while *n* and *m* (the time lag periods of the variables) note that it is not necessary for the number of time lag periods of the variables in levels to be (n, m) (Kripfganz, 2020), and ϵ_t is the random error term. To test the existence of a long-term equilibrium relationship between the model variables, we calculate the Fisher (F) statistic through the Wald test, where the null hypothesis is tested, which states that there is no cointegration between the model variables, meaning the absence of a long-term equilibrium relationship, versus the alternative hypothesis that there is a cointegration relationship in the long term between the levels of the model variables.

Determining the Study Sample and Period:

The study sample includes the case of Algeria, while the study period extends from 1999 to 2022. These years were chosen because they marked the beginning of structural reforms in the country under study, the emergence of the initial steps toward economic reform, the development of the concept of economic diversification, and attempts to reduce dependence on hydrocarbons. On the other hand, data on the study variables were also available during this period.

Defining the study variables:

Table 1. Identification of the Study Variables

Independent variables		**Dependent variable**	
The value-added share of the industrial sector in the gross domestic product	**TIND**	Inflation rate	**TINF**
The value-added share of the agriculture sector in the gross domestic product	**TAGR**		
The value-added share of the services sector in the gross domestic product	**TSER**		
The value-added ratio of the export sector in the gross domestic product	**TEX**		

The standard study of Algeria during the period 1999-2022. Description of the variables and study of their stability. Descriptive study of the variables:

Table 2. Descriptive Study of the Variables of the Algeria Case Study

	I AGR	I EX	I IND	I INF	I SER
Mean	9.970833	34.83333	35.70833	4.179167	40.01667
Median	9.750000	36.10000	37.00000	4.100000	39.85000
Maximum	13.80000	48.80000	50.00000	9.300000	49.50000
Minimum	6.600000	17.50000	19.00000	0.300000	31.00000
Std.Dev	1.899766	8.926544	9.378417	2.237230	5.878159
Skewness	0.127964	-0.278523	-0.155406	0.611916	0.121325
Kurtosis	2.036543	2.253238	1.923003	3.082502	1.821593
Jarque-Bera	0.993749	0.867952	1.256527	1.504572	1.447523
Probability	0.608429	0.647928	0.533517	0.471288	0.484925
Sum	239.3000	836.0000	857.0000	100.3000	960.4000
Sum sq.Dev	83.00958	1832.713	2022.958	115.1196	794.7133
Observations	**24**	**24**	**24**	**24**	**24**

Source: Prepared by the researchers based on the outputs of the EViews 12 program

The results from Table 2 above show that the calculated F-statistic value of 6.36 exceeds both the lower bounds (I(0)) − 2.2; 2.56; 2.88; 3.29 − and the upper bounds (I(1)) − 3.09; 3.49; 3.87; 4.37 at all significance levels (10%, 5%, 2.5%, 1%). Therefore, the null hypothesis of no cointegration is rejected in favour of the alternative hypothesis of cointegration.

Development of study variables:

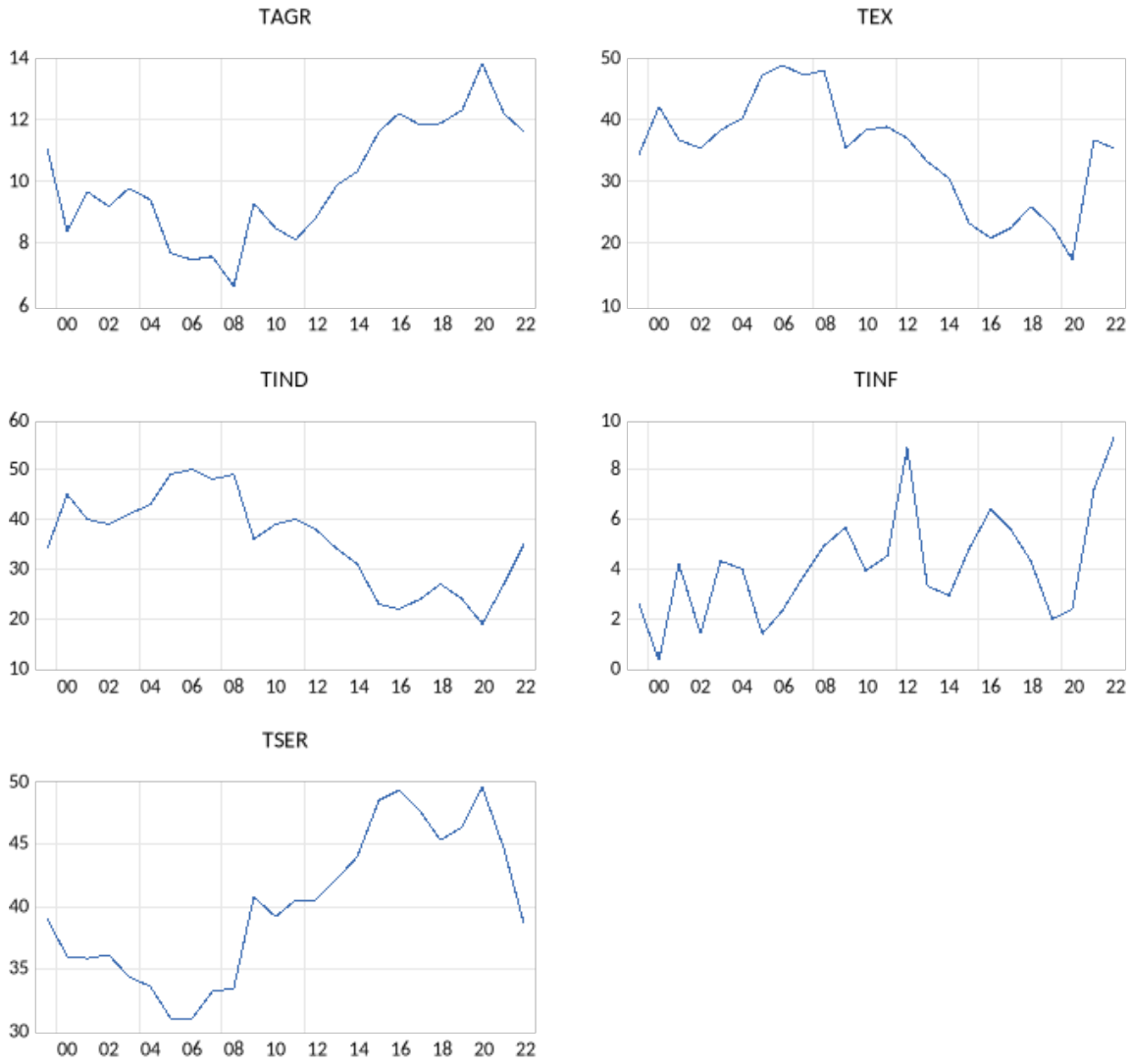

Figure 1. Descriptive Study of the Variables of the Algeria Case Study

Source: Prepared by the researchers based on the outputs of the EViews 12 program

Stability of Study Variables: To determine the stability of the study variables, the variables can be subjected to the Augmented Dickey-Fuller test and the Phillips-Perron test. Augmented Dickey-Fuller (ADF) Test (Table 3).

Table 3. Augmented Dickey-Fuller Test

ADF Test							
		At the level			The first difference		
Variables	**Degree of integration**	**Without a section or general direction**	**Just hang up**	**Intersection and general direction**	**Without a section or general direction**	**Just hang up**	**Intersection and general direction**
Tinf	(0)	0.4460	*0.0449	*0.0258	*0.0001	*0.0024	*0.0269
Tind	(01)	0.5662	0.5861	0.3416	*0.000	*0.0011	*0.0090
Tex	(01)	0.5436	0.4472	0.4409	0.000	*0.0002	*0.0016
Tser	(01)	0.6055	0.6774	0.7782	*0.0010	*0.0169	0.0788
Tagr	(01)	0.6130	0.5514	0.1621	*0.000	*0.000	*0.0002

Source: Prepared by the researchers based on the outputs of the EViews 12 program

Philips-Perron Test (PP):

Table 4. Philips-Perron Test

ADF Test							
		At the level			The first difference		
Variables	**Degree of integration**	**Without a section or general direction**	**Just hang up**	**Intersection and general direction**	**Without a section or general direction**	**Just hang up**	**Intersection and general direction**
Tinf	(10)	0.6700	0.1158	0.0828	*0.0000	*0.0000	*0.0000
Tind	(01)	0.5726	0.5861	0.3098	*0.0000	*0.0012	*0.0089
Tex	(01)	0.5679	0.4472	0.4409	*0.0000	*0.0003	*0.0016
Tser	(01)	0.6055	0.6389	0.7782	*0.0010	*0.0169	*0.0788
Tagr	(01)	0.6346	0.5854	0.1621	*0.0000	*0.0000	*0.0002

Source: Prepared by the researchers based on the outputs of the EViews 12 program

Model Estimation. Cointegration Test (Bounds Test) for the Inflation Rate Function:

Table 5. Bounds Test Table for the ARDL Model

F-Bounds Test		**Null Hypothesis: No level relationship**		
Test Statistic	**Value**	**Signif.**	**I(0)**	**I(1)**
F- Statistic	6.362341..	10%	2.2	3.09
	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: Prepared by the researchers based on the outputs of the EViews 12 program

The data from Table 5 indicates that the calculated F-statistic (6.36) exceeds both the lower critical bounds for (I(0)) (2.2, 2.56, 2.88, 3.29) and the upper bounds for (I(1)) (3.09, 3.49, 3.87, 4.37) at all significance levels (10%, 5%, 2.5%, 1%). Consequently, the null hypothesis of no cointegration is rejected in favour of the alternative hypothesis, which confirms its presence.

Subsequent tests (verification of estimated residuals). To ensure the validity of the model in terms of autocorrelation and homoscedasticity of errors, as well as the normal distribution of residuals.

The autocorrelation of errors through the LM test:

Table 6. Serial Correlation Table of Errors

Breuch-Godfrey Serial Correlation LM Test:			
Null hypothesis: No Serial correlation at up to 2 lags			
F.statistic	2.940404	Prob.F (2.5)	0.1431
Obs*R-squared	11.34998	Prob.Chi-Square (2)	0.0034

Source: Prepared by the researchers based on the outputs of the Eviews 12 program

The results show that the F-statistic probability of 0.14 exceeds the 0.05 threshold, indicating its statistical insignificance. Therefore, the null hypothesis of no error autocorrelation is rejected in favour of the alternative hypothesis of its presence.

Normality Test of Residuals (Jarque-Bera): Based on the Jarque-Bera statistic to determine whether the model residuals are normally distributed, as shown below:

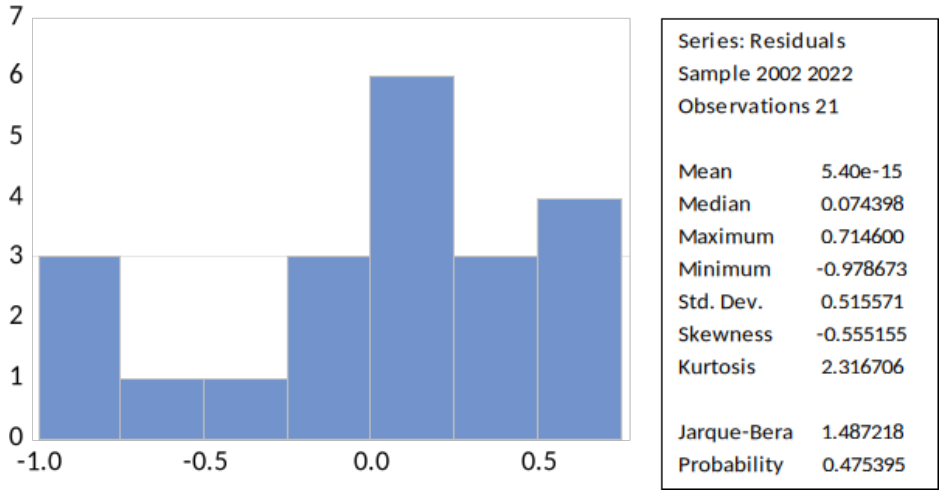

Figure 2. Normality Test of Residuals (Jarque-Bera)

Source: Prepared by the researchers based on the outputs of the EViews 12 program

From the Fig. 2 above, we observe that the parameter of the normal distribution of the estimated residuals is 1.487 with a non-significant probability estimated at 0.47, meaning that we reject the null hypothesis and accept the alternative hypothesis, which indicates that the residuals follow a normal distribution.

Estimation of the Inflation-Adjusted Model in Algeria F bound test: Based on the previous results, the model of the impact of economic diversification on the inflation equilibrium rate in Algeria can be estimated.

Table 7. Estimation of the Inflation-Adjusted Model in Algeria F bound test

ARDL Long Run Form and Bounds Test
Dependent Variable: D (T INF)
Selected Model: ARDL (3,0,2,2,2)
Case 2: Restricted Constant and No Trend
Date: 03/2024; Time: 18:29
Sample: 1999-2022
Included observations: 21

Conditional Error Correction Regression

Variable	**Coefficient**	**Std.Error**	**t-Statistic**	**Prob.**
C	82.69935	47.67162	1.734771	0.1264
TINF(-1)*	-2.383232	0.406007	-5.869934	0.0006
TIND**	-0.551208	0.446395	-1.234799	0.2567
TAGR(-1)	-4.469303	1.354388	-3.299869	0.0131

TSER(-1)	0.074395	0.465106	0.159952	0.8774
TEX(-1)	-0.361206	0.265176	-1.362137	0.2154
D(TINF(-1))	1.020115	0.247643	4.119299	0.0045
D(TINF(-2))	0.413961	0.186585	2.218618	0.0620
D(TAGR)	-0.496107	0.957410	-0.518177	0.6203
D(TAGR(-1))	2.081460	0.941398	2.211031	0.0627
D(TSER)	-0.464167	0.440703	-1.053242	0.3272
D(TSER(-1))	0.884791	0.360305	2.455671	0.0437
D(TEX)	0.208124	0.107141	1.942527	0.0932
D(TEX(-1))	1.044476	0.314263	3.323575	0.0127

* p-value incompatible with t-Bounds distribution
**Variable interpreted as Z= Z(-1) + D (Z)

Levels Equation
Case 2 : Restricted Constant and No Trend

Variable	Coefficient	Std. Error	Prob.	t-Statistic
TIND	-0.231286	0.194093	-1.191627	0.2722
TAGR	-1.875312	0.536702	-3.494138	0.0101
TSER	0.031216	0.193703	0.161153	0.8765
TEX	-0.151561	0.108022	-1.403061	0.2034
C	34.70050	20.57465	1.686566	0.1355

EC= T INF – (-0.2313*T IND-1.8753*T AGR +0.0312 * T SER – 0.1516 * TEX + 34.7005)

Source: Prepared by the researchers based on the outputs of the EViews 12 program

Estimating the Error Correction Model (ECM Test)

It is used to estimate the speed of error correction from the short term to the long term in the case of shocks, that is, the time required to return to the normal state in the long term.

Table 8. Estimation of the Error Correction Model (ECM)

ARDL Long Run Form and Bounds Test
Dependent Variable: D (T INF)
Selected Model: ARDL (3,0,2,2,2)
Case 2 : Restricted Constant and No Trend
Date: 03/2024; Time: 18:34
Sample: 1999-2022
Included observations: 21

Conditional Error Correction Regression

Variable	Coefficient	Std.Error	t-Statistic	Prob.
D(TINF(-1))	1.020115	0.175553	5.810865	0.0007
D(TINF(-2))	0.413961	0.134621	3.075019	0.0179
D(TAGR)	0.496107	0.343387	-1.444748	0.1918
D(TAGR(-1))	2.081460	0.556296	3.741640	0.0072
D(TSER)	0.464167	0.138245	-3.357576	0.0121
D(TSER(-1))	0.884791	0.130522	6.778886	0.0003
D(TEX)	0.208124	0.063053	3.300787	0.0131
D(TEX(-1))	1.044476	0.121855	8.571476	0.0001
CointEq(-1)*	-2.383232	0.294605	-8.089575	0.0001
R-squared	0.956634	Mean dependent var		0.242857
Adjusted R-squared	0.927724	S.D . dependent var		2.475797
S.E. of regression	0.665600	Akaike info criterion		2.321270
Sum squared resid	5.316276	Schwars criterion		2.768923
Log liklihood	-15.37334	Hannan – Quinn vriter.		2.418423
Durbin – Watson stat	2.818294			

* p-value incompatible with t- Bounds distribution

Source: Prepared by the researchers based on the outputs of the EViews 12 program

Analysis of the data in Table 8 indicates that the error correction coefficient (-2.38) is negative (which satisfies the necessary condition) and statistically significant (0.0001), meeting the sufficient condition. Based on this, it can be concluded that short-term shocks are corrected rapidly, at a rate of 238%, implying a return to long-run equilibrium in approximately 2 years, 4 months, and 17 days.

From the estimation of the balance of payments adjustment model, the following relationships are observed:

– An inverse relationship is identified between the inflation rate and the share of value added by the industrial and agricultural sectors in the gross domestic product, as well as the contribution of exports to GDP. An increase in the industrial sector's share by 0.23% and the agricultural sector's share by 1.87%, alongside a 0.15% rise in the share of exports in GDP, leads to a one-unit decrease in the inflation rate. This finding is consistent with the propositions of economic theory.

– This explains the increase in the level of economic diversification in Algeria during this period, which is based on the industrial and agricultural sectors to achieve self-sufficiency and export the surplus, with a view to increasing exports outside of hydrocarbons through entering the African market via Mauritania, establishing free trade zones with Mauritania, Mali, and Niger, as well as increasing trade relations with neighboring countries to the east, particularly Libya and Tunisia.

– There is a weak positive relationship with the contribution of the services sector to the GDP, where for every 0.03% increase, the inflation rate rises by one unit, which contradicts the principles of economic theories. The services sector (transport, health, and education) generally helps reduce inflation rates by contributing to the production cycle and creating added value that stimulates overall demand, thereby driving the productive apparatus. In the case of Algeria, however, the largest components of the services sector (health and education) are free public sectors governed by the social policies of the state rather than economic considerations, so their contribution is weak and their negative effect can be explained by the fact that they do not generate added value but consume the added value from other sectors.

Conclusion

Through the study of the topic of economic diversification, it appears that its goal is to break free from the reliance of GDP on a single source or a few highly volatile sources due to their link to international market fluctuations, and to move towards diversifying sources of output by increasing the contribution of various economic sectors in a way that drives development to be more sustainable. In the case of Algeria, through the study and analysis of economic diversification based on increasing the contribution of different sectors of the real economy to GDP, and thus strengthening the domestic production sector, which helps control inflation rates, the study indicates the existence of economic diversification in general in sectors outside hydrocarbons, linked to the performance of the agricultural sector, the industrial sector, and the services sector. However, their contribution to reducing inflation rates remains very weak, as inflation in Algeria is not purely a monetary phenomenon but is linked to structural problems in the economy. Based on the above, it can be said that Algeria is working to control inflation rates by pursuing an economic diversification policy during the study period, and GDP is not dominated by a single economic activity.

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