Assessment of the Economic Incentive Policy in Bridging the Food Gap in Algeria: The Period 2001–2023

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Abstract:

As the threat to food security continues to grow, governments have sought to reduce the food gap by employing available policy tools. This study aims to assess Algeria's economic incentive policy by focusing on exchange rate and agricultural subsidy policies during the period 2001–2023.

Using the Autoregressive Distributed Lag (ARDL) model, the estimation results indicate the absence of a long-term cointegration relationship among the variables. This implies that the level of the food gap in Algeria is not significantly affected by changes in either the exchange rate or agricultural subsidy values. This is attributed to the low elasticity of local supply and the reliance on natural resources in the agricultural production process. Therefore, governments must activate economic incentive policies through the development of an early warning system and the introduction of agricultural policies that enhance local supply.

Keywords: Food Security; Exchange Rate; Agricultural Subsidy Policy; ARDL Model

Jel Classification Codes: Q18, F31, C22

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1- Introduction :

Food security represents a real challenge faced by governments around the world, including Algeria. While the availability of natural resources in a country is generally seen as an indicator of its capacity to sustain local food production, various and diverse factors often hinder the achievement of this goal.

Despite Algeria's vast and diverse natural environment and its numerous potential resources for agricultural, industrial, fishing, and irrigation activities, the country is still classified among those lacking food security and remains a net importer of food products. This situation exacerbates the risk of ensuring basic life necessities for both current and future generations.

The financing of imported food staples reinforces the local economy's dependence on international market fluctuations through multiple channels. As a result, the country becomes vulnerable to imported economic effects such as successive food price fluctuations in the local market, imported inflation, and increased exposure of the domestic economy to the global market—leading to foreign currency outflows and the depreciation of the exchange rate.

In response, Algerian governments have sought to maintain a degree of control to confront external shocks and reduce their domestic impacts by adopting policies such as exchange rate flexibility and funding support programs for the development of local production.This leads us to the central question: Have these policies succeeded in influencing the level of the food gap?

1-1 Research Hypotheses:

To answer the question posed above, the following two hypotheses must be tested:

- There is no significant impact of the exchange rate policy on the level of the food gap.
- There is no significant impact of the agricultural subsidy policy on the level of the food gap.

1-2 Study Objectives:

By delving into governmental policies aimed at ensuring food security, the concept of a complementary relationship between the exchange rate of the national currency and the state of the food gap is reinforced. It also explores the potential of using this policy tool alongside others to curb rising indicators of food insecurity.

1-3 Study Outline:

To present the general framework of the research question and ways to address it, the following points will be covered:

- First: Pillards of the food gap
- Second: The relationship between the food gap and global prices
- Third: The impact of government intervention policies on reducing the food gap

2- Pillards of the Food Gap

Governments strive to ensure their populations' food needs are met by securing access channels insulated from economic instability—now a common factor across various economies. The best way to achieve this is through self-sufficiency in essential food items to prevent the emergence of food gaps.

Self-sufficiency refers to a society's ability to rely entirely on its own resources and capabilities to locally produce all its food needs. It is mathematically calculated as the ratio of local production to total food available for consumption and is achieved when this ratio reaches 100% (Bousmina, 2022).

As for food security, according to the Economist Intelligence Unit—which publishes the Global Food Security Index—it is defined as: "The ability of people, at all times, to have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs for a healthy life."

This definition aligns closely with the one published in Algeria's Official Gazette, Issue 46, Article 3, dated August 10, 2008, which defines food security as: "The ability of every individual to easily and regularly access adequate and safe food that enables them to lead an active life." (Laa'lam & Bennoun, 2023)

Meanwhile, the Arab Organization for Agricultural Development defines food security as: "The provision of food in sufficient quantity and quality to support activity and health, continuously and for every individual in the population, based primarily on local production and the comparative advantage of each country in producing specific food commodities, and ensuring availability at prices compatible with incomes and financial capabilities."

The difference between food security and self-sufficiency reflects the food gap, which arises when the growth rate of food demand surpasses that of food production. In such cases, the state is unable to meet its food needs locally and resorts to importing essential items. The greater the gap, the more it signals the economy's inability to meet food demands, and it is defined as: "The extent to which local food production suffices to meet domestic consumption needs."(Laa'lam & Bennoun, 2023). It expresses the magnitude of the economic problem faced by the country and is subject to the basic market variables of supply and demand.

The food gap rests on core market factors: first, the supply or local production of food goods; second, the level of consumption, or what is known as domestic demand for food goods. Added to this are the surplus or deficit conditions affecting both components, often leading to the international market being the optimal solution. Here, a third factor -price- emerges, equally important as the previous ones, and together these factors determine the economic and strategic food security status of the country.

2-1 Determinants of the Food Gap

The determinants of the food gap are defined based on the core market variables—demand, supply, and price—and are presented as follows:

- Demand for Food Products:

The demand side of the food security equation is influenced by both economic and non-economic factors, such as consumer habits, cultural norms, and psychological patterns, which have a partial impact. The key economic factors, however, are linked to population density, real output levels, and individuals' disposable income.

- The Supply Side of Food Products: This is expressed in terms of the availability of food products, whether from local production, strategic reserves, or even external sources. Numerous factors affect supply, the most significant of which are government policies aimed at encouraging agricultural production and farming subsidies, in addition to the sector being a fertile ground for effective technological innovation.
- Price: Due to the variety of basic foods and their connection to natural factors, countries often turn to international markets to meet their qualitative and quantitative food needs. Prices are mostly determined by international market balances, and importing or producing countries are usually unable to control these prices, given the many factors influencing overall supply and demand.

2-2 Market Intervention Tools in the Food Sector

To reduce the size of the food gap, governments must intervene in influencing the core market variables.

- On the demand side, its determinants move inversely with economic growth factors such as GDP, real individual income, and naturally growing population density. The findings of Moulahcen & Bougueroua (2017) confirmed that GDP is the most significant determinant of demand for Algerian food imports during the period 1990–2011.

As for the correlation between population growth and the food gap, a study by Kemmoumi & Ben Aada (2018) revealed that this relationship is very weak—no more than 1%. This may be because the growth rate of the food gap is accelerating faster than the population growth rate, and the food gap is more influenced by supply and price rather than demand.

- To Influence the Local Supply of Food Products: Governments tend to encourage agricultural production by funding various support programs, both local and foreign, often provided by institutions such as the International Fund for Agricultural Development, the World Bank, or others (Moustafawi & Ibrahimi Ben Harath, 2024). These programs can take many forms, including:

- Optimal investment in natural resources, diversification of agricultural crops, and maximum use of farmland by facilitating access to all points of activity and linking them to agricultural production requirements.

- Use of modern technology to deal with climate fluctuations, as all countries are now facing serious climate change risks, especially in agriculture. Therefore, scientific research findings must be utilized to mitigate these effects, while promoting national efforts in modern farming and irrigation techniques.
- Issuing laws and executive decrees to regulate agricultural investment operations.
- Providing support to farmers to encourage them to remain active in agriculture and to attract new investors to the sector by offering concessional loans.
- Ensuring financial coverage for losses resulting from climate fluctuations, particularly as this poses the greatest risk to farmers.
- Facilitating the importation of agricultural machinery and tools and easing procedures for obtaining farmland.

The efforts of the Algerian state to encourage agricultural production and provide local food requirements are reflected in the allocation of developmental programs with considerable financial envelopes within various growth plans, as shown in the following table:

Table N°1: Agricultural Sector Allocations During the Period 2000–2019 (in Billion Dinars)

Growth Program	2000–2004	2005–2009	2010–2014	2015–2019
Funding for the Agricultural Sector	65.4	312	1000	1216

Source: Official website of the Ministry of Agriculture and Rural Development: madrp.gov.dz

The government has continuously funded the agricultural sector with significant amounts to optimally exploit the various natural resources available in Algeria. This is demonstrated by the multiplication of support value—where the agricultural allocations during the fourth plan exceeded 1200 billion dinars compared to only 65 billion dinars in the previous growth plan.

In parallel, a number of different developmental programs were introduced with the aim of improving productivity in existing agricultural practices or investing further in land resources. These initiatives include utilizing water returns to rationalize irrigation water use and alternative water sources through three major projects in the field of complementary cereal irrigation; developing cost-effective irrigation technologies and the use of treated water; as well as establishing new projects designed to activate a modern method of organization and coordination among workers, encourage local milk production and its derivatives, and improve grain storage (Ben Aissa, 2019).

- To Mitigate the Effects of Price Volatility: Global food prices experience numerous and varied fluctuations due to the different factors affecting them. These fluctuations directly contribute to the prices of food products in local markets. Studies have indicated that many countries, including Arab states and Algeria, are increasingly affected by global price influences on the local food gap, while the supply and demand factors have only a marginal effect. For instance, the study by Bousmina (2022) confirmed that more than 75% of the growth

of the food gap in Algeria during the period 2004–2021 is explained by global fluctuations in food commodity prices, and that the food gap responds immediately to these fluctuations. Similar results were found in the studies of Azawi & Masoudi (2023), Ben Zagdah & Boushouit (2021), Qattab (2023), as well as the study by Boushouit & Ameur (2019) on Arab countries.

Thus, governments intervene to maintain stability in local consumer goods markets by influencing both local and external imbalances:

✓ Means of Intervention to Maintain Domestic Market Stability:

To ensure a margin of stability for its citizens and achieve levels of food security, governments work to stabilize local markets—sometimes at the expense of the trade balance and public expenditure accounts. Governments resort to price support policies by enhancing real incomes and combating poverty through the reduction of prices for widely consumed products, the provision of financial assistance to vital sectors such as agriculture and industry, supporting production and producers, and increasing the competitive capacity of domestic production sectors. This support generally takes two forms, as noted by Azawi & Masoudi (2023):

- Direct Support: Such as supporting the prices of agricultural products at the consumption level, setting ceiling prices for basic food products, supporting agricultural product prices at the production level, and assistance in cases of natural disasters.
- Indirect Support: Such as tax support on agricultural production and protection measures for agricultural products.

✓ Instruments for Maintaining Overall Economic Balance:

The study by Aqbi (2023) showed that imported inflation in Algeria during the period 1990–2020 was affected by several factors including the exchange rate of the Algerian dinar against the US dollar, global food commodity prices, and even the levels of imported inflation from previous years with a lag of up to four years. These results are attributed to the fact that policies aimed at maintaining local market balance are often pursued at the expense of overall economic balances such as the trade balance, public expenditure, inflation levels, and the currency's value.

Economic policies focus on reducing budget deficits and balance of payments shortfalls. To achieve this, governments adopt various measures to control the money supply and implement exchange rate policies. One common measure is to depreciate the local currency against foreign currencies—especially those of countries that import their products—in order to gain a competitive advantage in the international market, thereby increasing export volumes and enlarging the foreign currency reserve used to cover import costs.

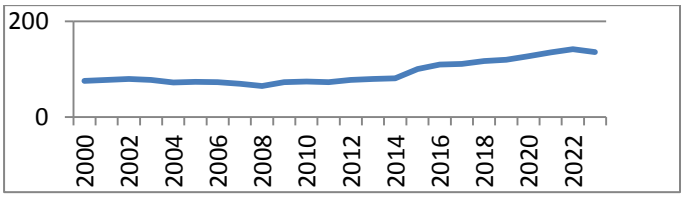
However, to prevent these policies from producing adverse effects, certain balances must be observed. As demonstrated in the study by Belaazouz Tarouq (2014), low purchasing power and rising prices have contributed to the expansion of the food gap in North African countries. The key balances include:

- The availability of external demand flexibility for exported goods' prices.
- The ability of the domestic supply of export goods to be highly elastic in meeting rising global demand for exports.
- Stability in domestic prices for exported goods so that export activities do not lead to a rise in internal prices for these goods.
- That a reduction in the local currency's exchange rate is not met with similar countermeasures by the exporting countries of the same goods.
- The effect of the local currency's exchange rate on imports will make imported goods seem more expensive in local currency, thereby reducing imports.
- And if a decrease in the volume of imports occurs, it is primarily related to the nature of these imports and the elasticity of local demand for them. If they are necessary goods, their import volume may not decline with exchange rate fluctuations; hence, such policies could feed into inflationary tendencies and further destabilize the situation.

In Algeria, the Central Bank is considered the main controller of the foreign exchange market. The remaining commercial banks and non-financial institutions are market participants. Since the adoption of the managed float system in 1996, the dinar has been determined by daily supply and demand exercised by all commercial banks, including the Central Bank and financial institutions, with mandatory Central Bank intervention to prevent a deterioration in the dinar's value.

The following figure illustrates the evolution of the nominal exchange rate of the Algerian dinar based on data reported by the Bank of Algeria:

Figure N°1: Evolution of the Exchange Rate in Algeria for the Period 2000–2024



Source: Prepared by the researchers based on data published on the official website of the Bank of Algeria.

The Central Bank of Algeria continues to employ a managed float exchange rate policy aimed at currency devaluation. This strategy seeks to reduce the outflow of foreign currency, improve the trade balance, decrease the import bill, and enhance the price competitiveness of locally produced goods.

3- The Food Gap in Algeria and Global Food Prices

Countries are classified in terms of food security based on several indicators, including the per capita food production rate, the daily caloric and protein intake per person (nutrition index), the proportion of the population not engaged in agriculture relative to national income, and the country's ability to finance its food imports through export revenues. This latter indicator is expressed as the ratio of export revenue to the value of imported food commodities (Belazouz & Tergou, 2014).

Although Algeria is endowed with abundant natural resources that could enable it to achieve self-sufficiency in several food commodities and even generate surpluses in others, the structural nature of the economy hinders this potential. Consequently, Algeria continues to rely heavily on food imports. Agricultural exports represent only 5% of total imports—a modest share that does not ensure local food stability (M1). According to the 2020 report of the Arab Organization for Agricultural Development (AOAD), the trade balance for major food commodities such as grains, barley, oils, and legumes was as follows:

Table N°2: Trade Balance Status for the Year 2020

Commodity	Grains	Wheat & Flour	Barley	Legumes	Sugar	Oils	Coffee & Tea	Dates	Vegetables
Trade Balance (Million USD)	3832.3	2676.3	107.5	272.6	659.4	801.9	320.79	142 (2021)	22.7
Self-Sufficiency (%)	30	30.5	81.2	30	0	25.2	0	100	99

Source: Arab Organization for Agricultural Development Report, 2020.

It is generally observed that the basic food basket is wholly or partially supplied through imports. In a society highly reliant on wheat, where local coverage does not even meet one-third of demand, consumers are vulnerable to sharp price fluctuations, especially in the absence of national price regulation mechanisms. This vulnerability acts as a transmission channel, shifting the burden of low self-sufficiency in basic food items from household budgets to the state budget.

In contrast, commodities for which Algeria maintains self-sufficiency include barley, dates, and vegetables. However, these products typically face lower demand levels compared to essential staples like wheat or sugar, due to the prevailing dietary patterns of Algerian consumers. Moreover, in quantitative terms, the surplus from these locally produced goods does not offset the value of Algeria's food imports.

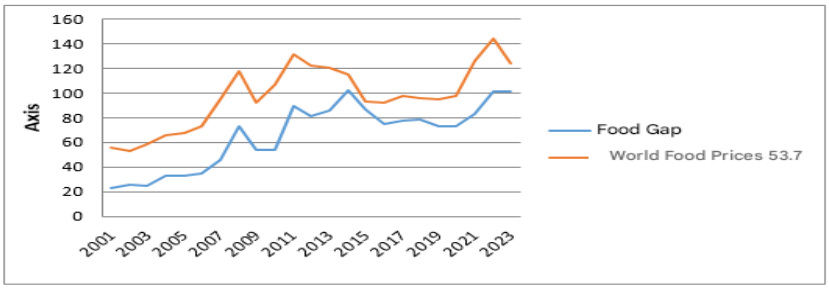
These outcomes have been recorded despite Algeria's possession of vast physical resources, including arable land suitable for cultivating wheat, cereals, legumes, and barley, as well as access to equivalent volumes of water from underground aquifers, seas, and dams. In parallel, the government provides both financial and legal support aimed at promoting agricultural development.

The food gap in 2001 was valued at approximately USD 2.3 billion, a significant figure when compared to export revenues, which stood at only USD 30 million. By 2023, the food gap had surged beyond USD 10 billion, while

exports reached merely USD 269 million. These figures reflect Algeria's acute economic exposure and the increasing difficulty of narrowing this gap, given that it has multiplied tenfold over two decades.

The following table illustrates the growth trajectory of both the food gap and global food prices.

Figure N°2: the growth trajectory of both the food gap and global food prices.



Source: Compiled by the researchers based on data published on the official website of the Bank of Algeria.

The consistency of the general trend in the evolution of both the food gap and global food prices in recent years is primarily due to the nature of Algeria's commodity imports, which largely consist of strategic and sensitive food products that are vulnerable to external shocks, and are met with minimal or nonexistent local coverage to mitigate such fluctuations. Examples include wheat, dairy products, and sugar. In 2014, for instance, the food gap in Algeria widened despite a drop in global food prices, a situation primarily attributable to a decline in local grain production. This highlights the fragility of the national food situation, as the country lacks reserves to face unexpected events and is heavily reliant on external markets.

Meanwhile, global food price spikes—often mirrored by expansions in the food gap—are triggered by various economic, natural, and political factors. Examples include:

- Economic causes: Such as the 2008 price surge due to declining commodity stockpiles and the global financial crisis. Prices stabilized the following year.
- Natural causes: Such as climate change and reduced rainfall, which led to a spike in 2011 due to global food shortages caused by drought.
- Political causes: For instance, the Russia–Ukraine war, which drove up wheat prices in 2021, as both countries are among the world's major wheat exporters.

Tracking the trajectory of Algeria's food gap reveals two key features: first, a persistent upward trend in its value; second, a direct dependency on global markets. Each reinforces the other and jointly drives the economy toward a state of food insecurity. In response to this situation, the Algerian government has initiated various economic policy tools—such as a managed float exchange rate policy and increased funding for agricultural projects—which this study focuses on.

4- Estimating the Impact of Government Intervention Policies on Reducing the Food Gap

4-1 Methodology and Tools Used:

To assess the impact of government intervention policies on Algeria's food gap, the study employs the Autoregressive Distributed Lag (ARDL) model developed by Sun (1998) and Pesaran, Shin, and Smith (2001), in order to determine the nature of the long-term relationship between the studied variables across various lag periods—a key advantage of the ARDL model.

a. Variables and Study Period:

The relationship between the following variables is examined by ARDL model for the period 2001–2023, as the following equation

$$\mathbf{FDG_t = \alpha + \sum_{i=1}^{p} \beta_i\, FDG_{t-1} + \sum_{j=1}^{q1} \gamma_i\, EXR_{t-j} + \sum_{k=0}^{q2} \delta_k\, GR_{t-K} + \varepsilon_t}$$

where

Table N°3: Definitions of Study Variables

Variable	Description	Data Source
FDG	Food gap of the economy (difference between agricultural imports and exports)	Annual reports of the Bank of Algeria available at: https://www.bank-of-algeria.dz/rapports-annuels/
EXR	Nominal exchange rate	Same source
GR	Agricultural investment expenditure (Gross Fixed Domestic Expenditure)	FAO Statistics available at: https://www.fao.org/faostat/en/#data

Source: Compiled by the researchers.

b. Diagnostic Testing for Variables:

- Testing for Variable Stationarity

To ensure the stationarity of the variables and to confirm that none are integrated of order two I(2)—which would render the ARDL method inappropriate—an Augmented Dickey-Fuller (ADF) unit root test was conducted for all variables.

The results presented in the table above indicate that none of the variables are stationary at their level form. To address the unit root problem, the variables were re-estimated at their first differences, where they all became stationary according to both the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests, The following table presents the results:

Table N°4: Results of Stationarity Tests for the Study Variables

Variable	Trend Assumption	Test	Level (Prob./Value)	First Difference (Prob./Value)
FDG	Individual Intercept	ADF	0.58 / 1.06	0.00 / 14.98
		PP	0.72 / 0.64	0.00 / 22.57

	Individual Intercept and Trend	ADF	0.43 / 1.68	0.00 / 11.27
		PP	0.40 / 1.80	0.00 / 26.53
	None	ADF	0.86 / 0.30	0.10 / 4.17
		PP	0.96 / 0.06	0.00 / 20.31
EXR	Individual Intercept	ADF	0.98 / 0.02	0.03 / 6.82
		PP	0.98 / 0.02	0.03 / 6.61
	Individual Intercept and Trend	ADF	0.70 / 0.70	0.04 / 6.00
		PP	0.70 / 0.69	0.06 / 5.32
	None	ADF	0.99 / 0.01	0.00 / 10.39
		PP	0.99 / 0.01	0.00 / 10.08
GR	Individual Intercept	ADF	0.98 / 0.02	0.02 / 7.63
		PP	0.53 / 1.24	0.02 / 7.63
	Individual Intercept and Trend	ADF	0.98 / 0.03	0.03 / 6.59
		PP	0.97 / 0.05	0.03 / 6.58
	None	ADF	0.97 / 0.04	0.00 / 9.67
		PP	0.94 / 0.10	0.00 / 9.67

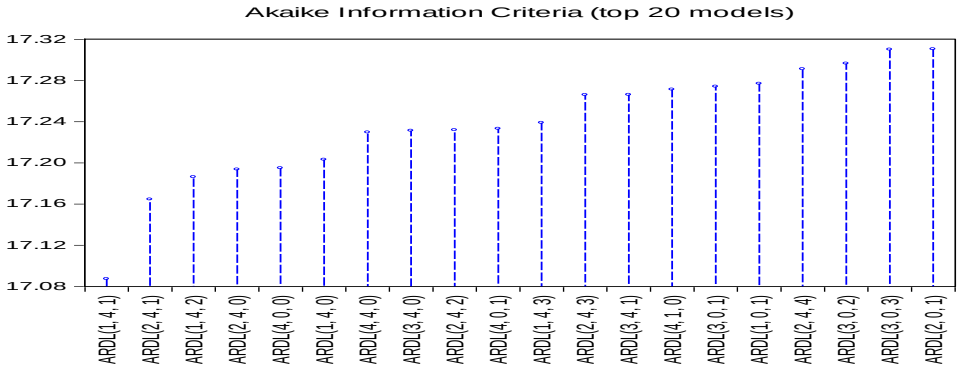
Source: Compiled by the researchers based on outputs from EViews software.

The stationarity of all model variables at the first difference, i.e., they are integrated of order one I(1), suggests the potential existence of at least one long-run equilibrium relationship among them. To verify this hypothesis, the Autoregressive Distributed Lag (ARDL) approach was adopted. This method is particularly suitable for small sample sizes and has the added advantage of incorporating lagged values of the variables, which helps to uncover dynamic relationships that may not be detected through contemporaneous estimations such as the Johansen cointegration test.

- Optimal Lag Length Selection Test:

Since the estimation method relies on determining the lag structure of the variables, it was first necessary to identify the optimal lag length among the various possible combinations. Based on the Akaike Information Criterion (AIC), Among twenty models with different lag length combinations, the AIC test indicates that the best specification for estimation is (1, 4, 1). the results of the test were as follows:

Figure N°3: Results of the OLLS Test



Source:Lütkepohl, H. (2005). ***New Introduction to Multiple Time Series Analysis*. Springer.**

- **Cointegration Test Using the Bounds Test Approach:**

The long-term relationship among the variables is determined based on the results of the diagnostic tests through the estimation of the Bounds Test. This test examines the null hypothesis, which states that no cointegration relationship exists in the long run. The hypothesis takes the following form:

Table N°5: Bounds Test Results

Significance	I0 Bound	I1 Bound	F-statistic
10%	3.17	4.14	0.901193
5%	3.79	4.85	
2.5%	4.41	5.52	
1%	5.15	6.36	

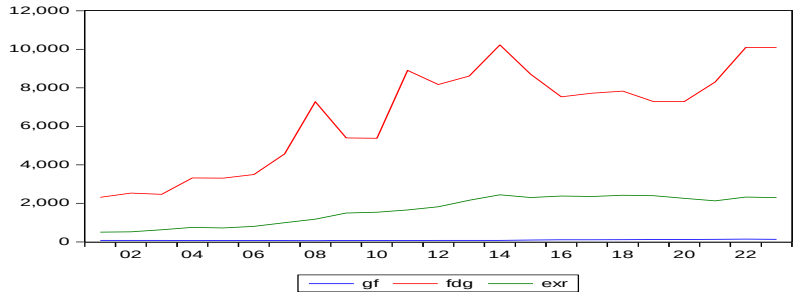
Source: Prepared by the researchers based on EViews output.

From Table 5, which presents the Bounds Test results, it is evident that the F-statistic value is 0.90, which is lower than the minimum critical value at the 10% level (3.17).

This result supports the acceptance of the null hypothesis, indicating the absence of a long-run cointegration relationship between the food gap and the key government intervention variables—namely, the exchange rate policy and agricultural investment expenditure. This implies that the food gap is influenced by other factors not included in the current model, despite the fact that exchange rate policy and agricultural investment are among the most influential tools of government intervention.

Consequently, this leads to a lack of consistency in the general growth trend throughout the study period. This observation is further illustrated in the following figure:

Figure N°3: General Trend in the Evolution of Variables



Source: Prepared by the researchers based on EViews output.

The growth of the food gap during the study period is characterized by persistent fluctuations along an overall upward trend. It is also subject to sharp shocks at various intervals, which serves as clear evidence of the lack of responsiveness to government intervention policies. In contrast, the exchange rate and agricultural investment expenditure variables display greater stability, maintaining a general upward growth trend.

5- Results and discussion

The extrapolation of results, showing the absence of impact from both the exchange rate level and agricultural support values, confirms the food gap's dependence on external factors beyond local policy

boundaries. This dependency is linked to global prices and fluctuations in the international food market amidst the failure of local policies. This is similar to the situation in several Arab countries as discussed in the studies by (Al-Tayeb and Bouzid, 2016) and (Bouchouit and Amir, 2019), and in Algeria, as evidenced in the studies by (Bousmina, 2022), (Azawi and Massoudi, 2023), and (Ben Zghda and Bouchouit, 2021).

On the other hand, the study by (Mustafaoui and Brahmi Ben Harath, 2024) revealed that the implementation of agricultural financing programs did not succeed in improving food security levels. Meanwhile, (Benkheznadji and Mazouzi, 2024) showed that the positive impact of agricultural expenditure policy on food security was weak, suggesting the need for a redirection of agricultural support policies. In contrast, (Ben Shaida, 2023) concluded that there was a negative relationship between agricultural investment and food security in both the short and long term, based on the study period of 1999-2021. Generally, the absence of real impacts from developmental programs is due to the minimal growth in agricultural output compared to the growing demand for food, meaning the production elasticity is low compared to the elasticity of demand for food (Ben Issa and Kabiri, 2018) and (Ben Issa, 2019).

The reasons for the inefficiency of local policies stem from several factors, including that the prices of exported agricultural goods tend to be stable compared to the more sensitive imported goods, which are more susceptible to poverty indicators. Additionally, the high volumes of imported goods contribute to neutralizing the impact of rising prices of exported goods, which are limited in quantity. Furthermore, the government's policy of supporting basic goods and financing them from the general treasury prevents the real food prices from reaching consumers, and as a result, no behavioral change in consumption patterns occurs due to price fluctuations.

6- Conclusion:

The Algerian government is working diligently to ensure local food security by guaranteeing the stability of necessary food levels, independent of international fluctuations. To this end, several programs have been implemented, including monetary intervention policies through exchange rate adjustments and support for local agricultural activities. In order to assess the impact of these incentives on food security, a model of the mentioned variables was estimated.

The results from the ARDL model estimation for the period 2001-2023 confirmed the absence of long-term and short-term relationships. The research analysis showed that the food gap in Algeria remains directly linked to fluctuations in the global food market, indicating the ineffectiveness of government policies in securing local food security. This is due to low production elasticity compared to the high elasticity of food demand, particularly given the stability of exported agricultural prices and the stability of basic consumer goods for citizens as a result of the adopted support policies for essential consumer goods.

To mitigate the effects of the current situation and move towards activating government incentives, it is essential to adopt modern agricultural strategies to ensure food security. This includes activating food diversification policies, expanding grain storage systems, and enhancing the operation of agricultural lands to meet changes in local demand. Additionally, governments can work on developing early food warning systems that help reduce the impact of global price fluctuations.

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