

Dynamic Analysis of Macroeconomic Imbalances in Algeria amid Economic Shocks (2020–2024): An Approach Using the Aggregate Demand and Aggregate Supply (AD–AS) Model

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Received: 28-09-2025

Accepted: 01-12-2025

Abstract

The objectives of this paper are to analyse Algeria's macroeconomic imbalances from 2020 to 2024 and the effectiveness of its economic policies. Major shocks during this period include the COVID-19 pandemic; global oil price volatility; and disruptions in the supply chains. using the Aggregate Demand and Aggregate Supply (AD–AS) model. The study investigates the impact of these economic shocks on GDP, inflation, unemployment, changes in the short-run AD and AS curves, and the long-run aggregate supply (LRAS)

The results show that despite monetary and fiscal measures to address the crisis, economic shocks caused major macroeconomic imbalances ;harming growth and raising concerns about inflation and unemployment .To restore long-term stability, the essay suggests implementing structural changes to enhance supply-side performance, increase supply-side efficiency, and better coordinate fiscal and monetary policies.

Keywords:

Aggregate Demand;
Aggregate Supply (AD–AS) model;
Economic shocks;
fiscal policy.

JEL Classification Codes: E12; E32; E62; H30.

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1. INTRODUCTION

Significant imbalances in macroeconomic equilibrium have resulted from a number of significant economic shocks that have impacted the world economy in recent years. Between 2020 and 2024, a number of causes, including the COVID-19 pandemic, variations in the international oil price, and supply chain disruptions, affected the Algerian economy. The instability of Algeria's development paradigm, which primarily depends on oil revenues, was exposed by these combined shocks.

Because of this, it became crucial to analyse how the macro-economy reacts to shocks and evaluate the success of the economic policies put in place during these transitions using contemporary economic models. One of the most important analytical tools for comprehending the short- and long-term dynamics of the economy and differentiating the effects of these shocks and policy responses on GDP, inflation, and unemployment.

Using the AD-AS model, this article attempts to present an academic dynamic study of Algeria's macroeconomic imbalances from 2020 to 2024. The method focuses on how internal and external shocks interact with fiscal and monetary policy tools to affect important macroeconomic variables such as GDP, inflation, and unemployment. Additionally.

Research Problem:

Based on the above, the following research question can be posed: *How did the successive economic shocks (2020–2024) affect macroeconomic stability in Algeria, and to what extent were the policies adopted effective in addressing them according to the Aggregate Demand and Aggregate Supply (AD–AS) model?*

Research Hypothesis:

The AD–AS model indicates that the fiscal and monetary policies put in place were insufficient to restore Algeria's macroeconomic equilibrium, which had been steadily out of balance due to a series of economic shocks that occurred between 2020 and 2024.

Research Methodology:

Using a descriptive-analytical approach, this essay examines Algeria's macroeconomic imbalances and assesses the success of economic measures from 2020 to 2024. With an emphasis on examining the effects of economic shocks like COVID-19, price fluctuations, and supply chain interruptions, it details the development of important macroeconomic variables.

Using the Aggregate Demand and Aggregate Supply (AD–AS) model as the primary analytical framework, the study also evaluates the efficacy of monetary and fiscal policies implemented in response to these shocks. In order to comprehend the dynamics of the Algerian economy and assess its potential for production, this entails analysing the movements of the Aggregate Demand (AD), Short-Run Aggregate Supply (SRAS), and Long-Run Aggregate Supply (LRAS) curves. Using a descriptive-analytical approach, this essay examines Algeria's macroeconomic imbalances and assesses the success of economic measures from 2020 to 2024. With an emphasis on examining the effects of economic shocks like COVID-19, price fluctuations, and supply chain interruptions, it details the development of important macroeconomic variables.

The study uses the Aggregate Demand and Aggregate Supply (AD–AS) model to analyse how successfully the monetary and fiscal policies responded to these economic shocks. In order to comprehend the dynamics of the Algerian economy and assess

its potential for production, this entails analysing the movements of the Aggregate Demand (AD), Short-Run Aggregate Supply (SRAS), and Long-Run Aggregate Supply (LRAS) curves.

The study examines changes in macroeconomic indices like GDP, inflation, and unemployment using official data from the Bank of Algeria and the International Monetary Fund (IMF), supported by tables and graphs.

2. The conceptual and Theorecal Framxork of Economic Shocks Within the (AD–AS) Model:

2.1 Definition of the Aggregate Demand and Aggregate Supply (AD–AS) Model:

The Aggregate Demand/Aggregate Supply (AD–AS) model is considered the most developed and widely used model in macroeconomics. In addition to evaluating changes in these two variables, it additionally examines the supply and demand sides and explains how the economy's overall price level and national income are established.

The Aggregate Demand (AD) curve, which illustrates the inverse relationship between the amounts of output demanded and the general price level, is a representation of aggregate demand, which is established by the money and goods markets. Whether through investment, consumption, or government spending, an increase in overall spending raises GDP and employment levels.

The Aggregate Supply (AS) curve, on the other hand, represents aggregate supply and shows a direct correlation between the quantity of output supplied and the general price level. It becomes challenging to increase output sufficiently without risking the danger of inflation when the economy is close to full employment and aggregate demand is rising. (Boundless, 2025)

2.1.1 Definition of Aggregate Demand:

The general demand for final goods and services in a particular economy at a certain point in time is known as 'aggregate demand', or 'AD'. It includes any amount of the product or service purchased at any level of price, in contrast to other examples of demand. AD is just the total amount of demand in an economy. It is the demand of the entire gross domestic product (GDP) and is frequently referred to as the effective demand or aggregate expenditure (AE). (Boundless, 2025)

Demand Sources

- **Consumption (C):** The largest part of aggregate demand (40–60%) representing total consumer expenditure in the economy.
- **Investment (I):** A key component of aggregate demand, reflecting business spending on capital. It significantly influences economy activity and is affected by interest rate and taxes.
- **Government Spending (G):** the amount that the government spends on public goods and services (like welfare, education, defense). It's a fiscal policy tool used to support economic transformation.
- **Net Export (NX):** . Represent the difference between exports and imports (X-M).

2.1.2 Definition of Aggregate Supply:

Aggregate supply refers to the quantity of goods and services that firms are willing and able to supply. The relationship between this quantity and the price level is different in the long and short run. Therefore, we will have two curves:

- **Long-run aggregate supply (LRAS) curve:** A curve that shows the relationship in the long run between the price level and the quantity of real GDP supplied.

- Short-run aggregate supply (SRAS) curve: A curve that shows the relationship between the price level and the quantity of goods and services firms are willing to supply, holding constant all other variables
- that affect the willingness of firms to supply goods and services. (Valdosta State University, n.d, p. 17)

2.2 The Concept of Economic Shocks and Its types:

2.2.1 Economic Shock:

Refers to *events that affect the economy, which may originate either internally or externally*. Internal shocks are divided into **monetary shocks** and **real shocks**. External shocks, on the other hand, follow the path of **economic cycles**. (Valdosta State University, n.d, p. 17)

An economic shock refers to **any change in fundamental variables or relationships in the macro-economy that has a significant impact on macroeconomic outcomes and performance indicators**, such as unemployment, consumption, and inflation. Shocks are often **unexpected** and are usually the result of events considered **beyond the scope of normal economic transactions**. (Al-Ghalibi, 2011, p. 118)

2.2.1.1 Concept of Aggregate Demand Shock:

Shocks that produce a shift in the aggregate demand curve are known as aggregate demand shocks. (Ibrahim, 2025)

This change is brought about by an automatic rise in aggregate demand or expenditure levels. An upward movement in the aggregate consumption function, an upward shift in the investment function brought on by hopeful future projections, or a drop in interest rates (*per Keynesian theory*) might all cause such an automatic increase.

It can also happen when exports surpass imports or when government spending rises as part of a new fiscal policy.

The overall price level will rise because of an increase in intended aggregate spending or demand brought on by any one of these variables or by a combination of them. (Mishkin, s.d.)

2.2.1.2 Aggregate Supply Shocks: (Al-Mustathmir Platform, 2024)

An incident that raises the cost, complicates, or even eliminates production—at least for some industries—is referred to as a supply shock. An increase in the price of necessities like oil, for instance, raises the price of fuel, which raises the cost of using it for business.

Among the most prominent supply-side shocks are climate change and natural disasters like earthquakes, hurricanes, and floods, which have a detrimental impact on supply and production capacities. This also holds true for shocks brought on by human activity, such as wars and armed conflicts.

According to some economists, technical advancements or developments that have an immediate impact on productivity and the economy's capacity for production are frequently the cause of supply-side shocks.

3. The EFFECTS OF Shocks on the Macroeconomy Using the (AD–AS) MODEL:

3.1 The Effect of Aggregate Demand Shocks on Macroeconomic Variables and Their Types:

We can summarise the impact of an aggregate demand shock as follows:

Table 1.

Demand Shock	Effect on Real GDP (GDP _r)	Effect on Unemployment (UR)	Effect on General Price Level (PL)
AD↑ (Increase in AD)	GDP _r ↑ (Increases)	UR ↓ (Decreases)	PL ↑ (Increases)
AD↓ (Decrease in AD)	GDP _r ↓ (Decreases)	UR ↑ (Increases)	PL ↓ (Decreases)

Source: Prepared by the researcher

The table illustrates how changes in aggregate Demand components affect **real GDP, the unemployment rate, and the general prices level**. The (AD–AS) model identifies two types of demand shocks

3.1.1 Positive demand shock: This occurs because the AD curve shifts to the right due to an increase in aggregate demand. As a result, real output increases, unemployment decreases, and the overall level of prices rises. Demand exceeding the economy's short-term production capacity is the cause of this **inflationary gap**.

3.1.2 Negative demand shock: In this case, the AD curve shifts to the left as aggregate demand declines. As a result, there is an economic contraction marked by a drop in real GDP, an increase in unemployment, and a drop in the general level of prices, which is widely known as **deflation**.

3.1.3 Assessing the Effects of Supply Shocks on Key Macroeconomic Indicators

3.1.3.1 The impact of an aggregate supply shock

Table 2.

Supply shock	impact on rGDP	impact on unemployment	impact on price level
SRAS↑	GDP _r ↑	UR↓	PL↓
SRAS↓	GDP _r ↓	UR↑	PL↑

Source: Prepared by the researcher based on the previous information

The table above shows the impact of aggregate supply shocks on the main macroeconomic variables, through the movement of the short-run aggregate supply curve (ARAS).

The short-run aggregate supply curve moves to the right in the event of a positive supply shock (ARAS↑), such as a technological advancement or a drop in production costs. Consequently, the real GDP (GDP_r↑) rises, the unemployment rate (UR↓) falls, and the total price level (PL↓) falls. An improvement in economic performance free from inflationary pressures is indicated by this favourable situation.

However, the ARAS curve moves to the left in the event of a negative supply shock (ARAS↓), which can be caused by a rise in the price of raw materials or logistical or meteorological issues. Such an event leads to a decline in real output (GDP_r↓), a rise in the unemployment rate (UR↑), and frequently a decline in the level of prices (PL↓). In certain instances, there is a recession and a rise in prices, which is indicative of stagflation.

3.1.3.2 Long-Run Aggregate Supply (LRAS) Shocks:

The Long-Run Aggregate Supply (LRAS) curve represents the potential or natural level of output in an economy—i.e., the level of production that can be achieved when all resources (capital, labour, technology, and natural resources) are used

efficiently. This curve reflects the economy's maximum productive capacity in the long run, and it is vertical because it is not affected by the price level. LRAS shocks affect the underlying productive capacity of the economy in a permanent way. (Mankiw, 2019, pp. 297-300)

Permanent Negative LRAS Shock:

The LRAS curve shifts to the left because of this event, which permanently lowers the economy's potential productive capacity. This implies that even when all of the economy's resources are used to their greatest potential; it can produce fewer goods and services. (Blanchard, Amighini , & Giavazzi, s.d.)

Main Causes:

These shocks usually include: a permanent reduction in the size or quality of the labour force (due to lower birth rates or mass emigration of skilled workers); the permanent depletion of vital natural resources (e.g., the exhaustion of oil reserves in a country heavily dependent on them); a major slowdown in technological innovation that hinders productivity growth; or large-scale destructive natural disasters (e.g., earthquakes or tsunamis that destroy infrastructure and agricultural land).

Long-Term Economic Impact:

The natural level of output in the economy permanently drops. The general price level tends to rise in the absence of compensatory policies, and if the shock has a structural effect on the labour market, the natural rate of unemployment may rise.

Permanent Positive LRAS Shock:

Definition:

The LRAS curve moves to the right because of these occurrences, which permanently raise the economy's underlying

productive potential. This suggests that, over time, the economy can now create more goods and services more effectively.

Main Causes:

This type of shock occurs when there are improvements in the fundamental factors of production, such as:

- **Human Capital:** Through investment in education and vocational training.
- **Physical Capital:** Such as expanding infrastructure and modernizing production tools.
- **Technological Advancement:** Via innovation and digital transformation.

Institutional Reforms:

These include enhancing economic governance, streamlining regulations, and enhancing the business climate.

Long-Term Economic Impact:

The economy's normal level of output increases steadily. The general level of prices tends to decrease when offsetting policies are not in place. (Vaia, s.d.)

3.2 Macroeconomic Equilibrium:

When aggregate demand and aggregate supply are equal, or at the intersection of the Aggregate Demand (AD) curve with the Short-Run Aggregate Supply (SRAS) or Long-Run Aggregate Supply (LRAS) curves, macroeconomic equilibrium is reached. The output and price level at equilibrium are now established.

4. Analysis of the Algerian Economy Using the AD–AS Model (2020–2024)

4.1 Evolution of Macroeconomic Indicators (output; Inflation; Unemployment)in Algeria:

Table 3.

Year	Real GDP Growth (%)	Inflation Rate (%)	Unemployment Rate (%)
2020	−5.0	2.4	11.4
2021	3.8	7.2	11.4
2022	3.6	9.3	11.6
2023	4.2	9.3	11.4
2024*	3.8	7.6	11.4

Source: Prepared by the researcher based on statistics from the International Monetary Fund and the Bank of Algeria.

The table above illustrates the evolution of Algeria's primary macroeconomic indicators from 2020 to 2024. The data makes it clear that the overlapping effects of shocks and economic policies created a complex dynamic in the Algerian economy. In:

In 2020, the Algerian economy experienced a double shock and a severe recession:

- **Indicators:** As can be seen from the above table, real GDP shrank by a significant 5%. However, the unemployment rate stayed at 11%, suggesting that employment containment measures were in place or that the repercussions of the crisis were not yet fully apparent. At 2.4%, the inflation rate, meanwhile, stayed comparatively low.

- **Analysis according to the AD-AS model:** The above indicators illustrate that the Algerian economy was hit by a negative double shock.

- **Sharp negative demand shock (AD↓):** extensive lockdown procedures, a drop in investment and consumer expenditure, and the collapse of world oil prices brought this on. Reduced government revenue led to lower public spending and a leftward shift in the aggregate demand curve (AD), which in turn caused a sharp decline in GDP.

- **Negative supply shock:** The economy's productive capability and supplies were negatively impacted by production restrictions, supply chain disruptions, and the suspension of non-essential economic operations. The short-run aggregate supply curve (SRAS) moved to the left as a result.

- **Overall equilibrium:** The overall equilibrium in 2020 was characterised by deep recession and a sharp decline in output due to both negative shocks. The fact that inflation did not rise suggests that the decline in aggregate demand was substantial enough to offset any price pressures resulting from reduced supply or that the supply shock was still in its early stages and had not yet significantly impacted the general price level.

During the period 2021–2023: This period was marked by a relative recovery in GDP along with a rise in the inflation rate:

- **Indicators:** As seen in the preceding table, the Algerian economy saw positive real GDP growth over this time, reaching a recovery phase (3.8% in 2021, 3.6% in 2022, and 4.2% in 2023).

Concurrently, the rate of inflation rose significantly, rising from 2.4% in 2020 to 7.2% in 2021 and then 9.3% in 2022 and 2023. In the meantime, the unemployment rate hovered between 11.4% and 11.6%.

Analysis according to the AD-AS model:

- **Recovery in aggregate demand (AD):** The increase in oil prices around the world raised government revenue, which in turn gave the government more spending flexibility. This, together with the

restart of business operations, contributed to the Algerian economy's stimulation and caused the AD curve to move to the right.

- Persistent and renewed supply-side pressures: High inflation and growth during this time period indicate supply-side pressures on the economy, which could have been brought on by:

- Disruptions and delays in global supply chains due to the pandemic.
- Increases in shipping and logistics costs, as well as the global bill for food imports.
- The inability of production structures to keep up with rising demand without triggering inflation due to nearing full production capacity and the presence of bottlenecks.[†]

Overall Equilibrium:

A significant rise in the inflation rate coincided with economic expansion during this time, suggesting that the short-run aggregate supply (SRAS) curve did not change in tandem with the AD curve's rightward shift. This resulted in a new equilibrium with higher output and noticeably higher prices because of persistent supply-side pressures, including supply chain interruptions and stagnating productivity.

In 2024: Continued economic growth with declining inflation.

- Indicators: According to statistics, real GDP grew by 3.8% further, continuing on its upward trajectory. Meanwhile, the unemployment rate held steady at 11.4%, and the inflation rate dropped to 7.6%. This implies that fundamental disparities in the employment market still exist despite general progress.

[†] The term "**bottlenecks**" refers to obstacles that hinder the flow of goods and services, such as: complex procedures, lack of transportation, or slow import processes.

5. Impact of Algeria's Economic Policies (2020–2024) on Overall Equilibrium (AD–AS Model)

Algeria responded to the COVID-19 epidemic by enacting expansionary economic policies between 2020 and 2023. The administration implemented a number of fiscal strategies, such as longer-term stimulus plans and higher public spending. Concurrently, the Algerian central bank implemented liberal monetary policies, which included lowering the needed reserve ratio, easing lending requirements, and significantly increasing the amount of liquidity in the economy.

The dynamics of the aggregate demand (AD) curve were greatly impacted by these activities, which resulted in a rightward shift. The evolution of Algeria's main monetary and fiscal policy tools from 2020 to 2024 is displayed in a table. (International Monetary Fund (IMF), 2024) (Bank of Algeria, 2023)

Table 4.

Year	Government Spending (% of GDP)	Fiscal Deficit (% of GDP)"	Interest Rate (%)	Reserve Requirement (%)
2020	37.5%	−10.5%	3.25%	10%
2021	32.5%	−6.3%	3.00%	6%
2022	32.0%	−2.5%	3.00%	2%
2023	34.1%	−3.0%	3.00%	2%
2024	36.3%	−8.5%	3.00%	2%

Source: Prepared by the researcher based on statistics from the **International Monetary Fund (IMF)** and the **Bank of Algeria**.

5.1 Fiscal Policy Analysis: Government Spending and Budget Deficit

Fiscal policy data, such as government spending and the fiscal deficit as a percentage of GDP, obviously show a direct reaction to changes in the economy.

- **In 2020**, the decline in oil prices during the COVID-19 pandemic caused Algeria to experience two shocks. The administration kept public spending at a comparatively high level, 37.5% of GDP, in spite of the economic crisis and the dramatic 5.0% decline in real GDP. The budget deficit reached a record 10.5% of GDP as a result of this spending exceeding available income. This large deficit is a result of the government's attempt to boost the economy during the COVID-19 crisis as well as the challenge of reducing spending in the face of declining income, which suggests the existence of structural obligations.

- **During 2021–2022**, the economy began to improve. The budget deficit declined sharply from -6.3% to -2.5%, while government spending dropped from 37.5% to 32.5% and then to 32.0%. Rising global oil prices, which increased hydrocarbon revenues and gave the government more fiscal flexibility, were the main driver of this development rather than austerity measures.

- **In 2023–2024**, the government persisted in implementing fiscal expansionary measures. Public spending increased from 34.1% of GDP in 2023 to 36.3% in 2024, reflecting initiatives to achieve social obligations and boost economic growth through more investment in development projects. However, data indicates that the budget deficit has significantly increased; now standing at -8.5% of GDP. Either a drop in oil revenues or ongoing fiscal strains could be to blame for this.

By extending the aggregate demand (AD) curve to the right, this expansionary strategy promotes short-term output growth. However, there may be medium- and long-term threats to fiscal sustainability if this strategy is maintained without a successful diversification of revenue sources.

5.2 Monetary Policy Analysis: Interest Rate and Reserve Requirement

The Bank of Algeria's attempts to preserve economic stability, especially in the face of escalating inflationary pressures, are reflected in the employment of monetary policy tools, primarily the interest rate and the required reserve ratio.

- During the period 2020–2022, Following the COVID-19 shock, the Bank of Algeria implemented an accommodating monetary policy with the goal of boosting liquidity and promoting economic expansion. From 3.25% in 2020 to 3.00% in 2021, the benchmark interest rate was progressively lowered and stayed there until 2024. The required reserve ratio, on the other hand, was significantly reduced, going from 10% in 2020 to 6% in 2021 and then to 2% in 2022, where it stayed stable until 2024.

- In the 2023–2024 periods, even when inflation rates increased to 9.3% in 2022 and 2023, monetary policy tools stayed the same. Several interpretations are suggested by the interest rates (3.00%) and necessary reserve ratios (2%) stability:

- It's possible that the central bank used unorthodox or non-traditional methods to control liquidity.
- It might have placed more emphasis on economic expansion than on vigorously containing inflation,
- Or it might have believed that the inflation spike was just temporary and caused by external supply shocks—like rising food and energy costs worldwide—that are not directly under monetary policy's control.

This positive policy trajectory may also indicate that the **economy is making progress in addressing structural supply-side constraints** or that the **applied policies have started to yield results**, gradually helping to contain inflationary pressures.

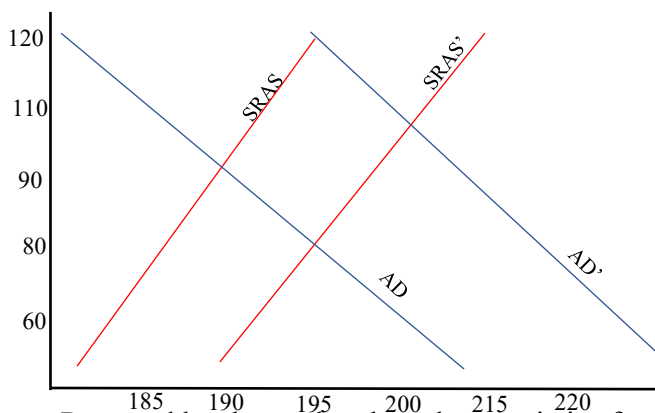
5.3 Comprehensive Dynamic Analysis of the Algerian Economy Using the AD-AS Model (2020–2024)

Algeria's economic statistics from 2020 to 2024 generally show a high degree of susceptibility to outside shocks, particularly the COVID-19 epidemic and fluctuations in world oil prices. During this time, the nation's economic reactions varied from a severe contraction to a patchy recovery.

A useful tool for determining the type of shocks—whether they came from the supply or demand side—and comprehending their impacts on production (GDP), inflation, and unemployment is the Aggregate Demand–Aggregate Supply (AD–AS) model.

Finding a balance between fostering economic growth and controlling rising inflation was a major challenge for the Algerian economy during the recovery phase, and this challenge was reflected in the fiscal and monetary policies that were put in place during that time. The dynamic trajectory of the Algerian economy during these years is depicted graphically below, along with changes in the AD and AS curves.

Fig.1.The intersection of AD and SRAS Curves



Source: Prepared by the student based on statistics from the International Monetary Fund and the Bank of Algeria

The changes in the aggregate demand (AD) and short-run aggregate supply (SRAS) curves, which are based on the monetary and fiscal policies that were put in place as well as the economic shocks that were experienced, illustrate the dynamics that the Algerian economy went through between 2020 and 2024.

On one hand, the expansionary fiscal policy—where government spending peaked at 37.5% of GDP in 2020 and 36.3% in 2024, along with a fiscal deficit that exceeded 10.5% in 2020 and 8.5% in 2024—helped stimulate aggregate demand, resulting in a rightward shift of the AD curve. Likewise, the accommodative monetary policy, through the reduction of the interest rate from 3.25% to 3.0% and the decrease in the required reserve ratio from 10% to 2%, supported bank credit and injected liquidity, which further fuelled consumption and investment, thus pushing the AD curve further to the right.

On the other hand, the supply side did not advance as quickly. Conversely, supply chain disruptions, increased import

prices, and a decline in industrial and agricultural output caused the economy to experience adverse supply shocks.

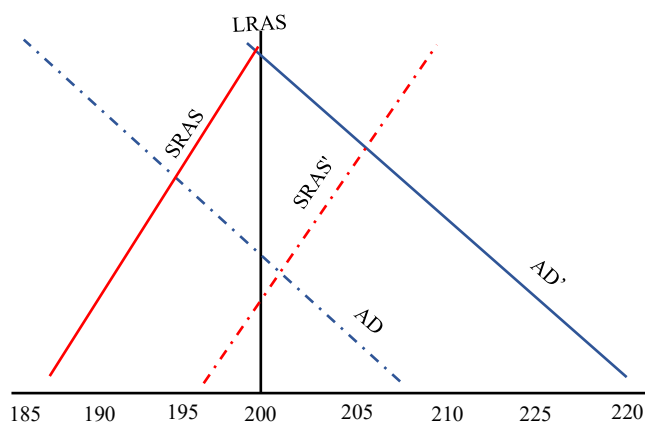
These factors led to a leftward shift of the SRAS curve, which translated into high inflation, reaching 9.3% in 2022 and 2023, with the unemployment rate remaining stable around 11.4%, reflecting a weak capacity to generate jobs despite economic growth.

The result: as seen by the combination of a leftward-shifting SRAS curve and a rightward-shifting AD curve, is nominal growth coupled with inflation and unemployment → features of **stagflation**.

Description and Analysis of the Long-Run Aggregate Supply Curve (LRAS) in the Algerian Economy during 2020–2024:

The LRAS curve represents the maximum productive capacity that the economy can achieve at full employment, without inflation. In other words, it is not affected by changes in the general price level in the short run but is instead determined by structural factors such as technological progress, the level of investment, labour market efficiency, and available resources.

Fig.2.the intersection of LRAS, AD and SRAS Curves (2020-2024)



Source: Prepared by the researcher

It is noted that there was no discernible change in the Algerian economy's LRAS curve between 2020 and 2024. The following elements help to understand this:

- No significant changes in productivity or technology were noted.
- The labour market continued to experience structural imbalances, with unemployment staying stable at 11.4% despite improved growth; public investments continued to be more concentrated on current expenditures than on productive infrastructure.
- Long-term productivity-boosting changes (including structural reforms, economic diversification, and improved capital efficiency) were not implemented.

The stability of the LRAS during this period implies that all movements in GDP and prices were mainly driven by shifts in AD or SRAS, reinforcing the short-term nature of the economic impact of the implemented policies and explaining why periods of growth did not translate into sustainable changes in unemployment or inflation.

Conclusion:

Using the Aggregate Demand – Aggregate Supply (AD–AS) model, the dynamic analysis of the Algerian economy from 2020 to 2024 showed a complex interplay between expansionary fiscal and monetary policies and external and internal economic shocks, including the COVID-19 pandemic and changes in oil prices. Deep imbalances in macroeconomic equilibrium, including GDP, inflation rates, and unemployment, resulted from these events. Rising oil income and higher government investment propelled the economy's relative recovery after a severe decline in 2020. It did, however, continue to have significant structural

unemployment and inflationary pressures, which were indicators of **stagflation**.

The research also demonstrated that, in spite of their contribution to crisis mitigation, the fiscal and monetary policies implemented were unable to produce a strong enough supply-side reaction to keep pace with the increase in spending. This demonstrated the weakness of the oil-revenue-based rentier development model and reaffirmed the pressing need for **structural changes**.

According to the AD–AS model, the results of the aforementioned analysis unequivocally confirm the theory that persistent macroeconomic imbalances have been caused by a series of economic shocks as well as insufficient fiscal and monetary measures. Adopting a thorough and long-term economic perspective is necessary for this.

- Recommendations:

The objective of these suggestions is to change Algeria's economy from one that depends on rent and outside swings to one that is more **resilient**, **productive**, and **diversified** and that can achieve inclusive, sustainable growth that benefits all facets of society.

- In order to increase long-run aggregate supply (LRAS) and increase the economy's resilience to external shocks, **diversify the economy** and expedite the implementation of profound structural reforms targeted at broadening the productive base beyond the hydrocarbons sector, such as manufacturing, services, tourism, and irrigation.
- To increase sectorial competitiveness, foster innovation and technology, **build robust local supply chains** to lessen

reliance on outside sources, and **invest in human capital** by raising the standard of education and career training.

- **Redirect fiscal policy** to increase spending on industries like manufacturing, infrastructure, and education in order to achieve sustainable growth, rather than concentrating on present expenses.
- **Enhance the effectiveness of monetary policy** by creating cutting-edge financing instruments that boost economic growth without putting undue pressure on inflation and by improving the accuracy of bank liquidity monitoring.
- **Adopt prudent and sustainable fiscal and monetary management:** Achieving monetary and financial stability throughout the short and long term should be the main goal of a macroeconomic policy framework. This entails establishing clear budgetary guidelines for public expenditure, broadening the sources of government income, and reorganizing the banking sector to better support profitable investment. Monetary policy should stimulate economic growth and preserve price stability without inciting excessive inflation.

- Final Note:

In summary, the AD–AS model offers a useful framework for comprehending the types of macroeconomic relationships that exist within the Algerian economy. In order to better properly describe the long-term effects of shocks and economic policies, this work does, however, pave the way for future **quantitative research** employing more intricate models (such **SVAR** or **DSGE**).

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