

The Effectiveness of monetary policy under the persistent public budget deficit in Algeria (2015-2022)

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Abstract:

This study aims to highlight the effectiveness of monetary policy in achieving its final objectives under the conventional and unconventional programs and mechanisms used to finance the public budget deficit in Algeria during the period (2015-2022).

We found that these programs and mechanisms have made monetary policy in the service of persistent budget deficit financing, leading a limitation of the effectiveness of monetary policy in achieving its final objectives.

Keywords: *monetary policy effectiveness, monetary policy objectives, public budget, budget financing programs.*

Jel Classification: *E52. E58.H62.*

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1. Introduction

Monetary policy is one of the most important economic policy tools on which countries depend to Manage cash supply and credit, in order to achieve various economic purposes as monetary stability, the promotion of economic growth rates, the treatment of various economic imbalances and other problems facing the economy, which made it occupy the forefront of the economic policy tools that are relied upon in setting final goals and achieving economic stability.

In Algeria, like other countries, its public budget suffers from the persistence deficits, as a result of the efforts of the public authorities to achieve economic and social balance at the expense of financial balance. As a result of the decline in the country's income due to the collapse of oil prices in global markets, and the severe economic recession left by the global health crisis Covid-19, Algeria adopted a set of different traditional and unconventional means to finance this deficit during the study period, starting from the Revenue Regulation Fund until the Special Program for Refinancing in 2021, which pose a real challenge to monetary policy in controlling the growth of the money supply and achieve final goals effectively.

Based on the above, we can pose the following main problem:

What are the effects of budget deficit financing methods on the effectiveness of monetary policy in Algeria during the period (2015-2022)?

Based on the main problem, we pose the following sub-questions:

- How did the public budget deficit develop over the period (2015-2022)? And what are the methods that were used to finance it?
- To what extent did the methods of financing the budget deficit affect the monetary variables in Algeria?

To answer these questions, We will use the descriptive analytical methodology, by divided the research paper into three main axes. The first one contains the theoretical and legislative framework for monetary policy in Algeria, while the second treats the general budget deficit and the methods of its financing during the period (2015-2022).The third axis deals with the analysis of the effectiveness of the monetary policy in Algeria ,under the budget deficit, during the same period.

The study is important through the effective role of monetary policy in financing Algeria's public budget deficit, in view of the need to maintain economic stability, which lead us to highlight the extent to which it can effectively achieve its objectives under this problematic situation.

2.The theoretical and legislative framework for monetary policy in Algeria

2.1. The concept of monetary policy:

Monetary policy is defined as “all monetary and non-monetary decisions and measures, aimed at influencing the monetary system” (Haoulia, 2015, p. 37) In another way, it expresses the total measures taken by the Central Bank for the purpose of monitoring credit and controlling the money supply in order to achieve the economic objectives underlined.

2.2. The objectives of monetary policy in Algeria:

Considering monetary policy as one of the tools of economic policy, therefore, we observe that it works to achieve the goals referred to by the term "Caldor's Magic Square", which represents the final goals of any economic policy, in general, the objectives of monetary policy are as follows:

- **Achieving stability in the general level of prices:** This is to avoid falling into the problems of inflation, which negatively affects economic and social stability, thereby, losing confidence in economic policy;
- **Equilibrium in the Balance of Payments:** Reducing the volume of credit and Aggregate Demand results in a lower overall level of prices in the economy, thereby encouraging exports and reducing imports, in addition, rising interest rates attracts foreign capital, which contributes to reducing the balance of payments deficit;
- **Full employment:** to achieve full employment and reduce unemployment, the monetary authorities raise the level of money supply, resulting in increased investment and increased level of employment as well as activating aggregate demand; (Benabi, 2017, p. 61)
- **Economic Growth:** It expresses the increase in the level of real GDP of an economy, as a result of optimal utilization of economic resources, by **influencing** investment without this being a cause of inflation. (Attar & Boukemoum, 2022, p. 695)

However, it is worth noting that there is an almost clear agreement among economists on the impossibility of achieving these goals together, because of the contradiction between them, and determining on which goal to work on any of these goals, depends on the economic situation of each country.

2.3. The development of the monetary policy legislation in Algeria:

Monetary policy in Algeria underwent a radical change after the issuance of The Law on Money and Credit 10-90 in 1990, through which the Central Bank was rehabilitated in terms of its basic tasks and functions, in order to reflect the transition to a capitalist economy, including: (Algerian Official Gazette, 1990, p. 520)

- Working towards the good management of the money market by its intervention through quantitative and qualitative tools, as well as limiting government interventions in the financial and banking sector;
- Rehabilitation of the Central Bank's role in managing monetary and credit affairs by encouraging investments and allowing the establishment of private national and foreign banks, as well as the establishment of a real capital market (stock exchange);
- Revaluation of the local currency to serve the national economy, as well as ensuring relative flexibility in determining the interest rate by banks.

After then many amendments were made to the Monetary and Loan Law, such as:

- **Amending the Money and Credit Law 2001:** Through the enactment of Ordinance 01-01 in 2001, through which the Board of Directors of the Bank of Algeria was separated from the Board of Monetary and Loan, the first became the one entrusted with the management and control of the Central Bank, while The second became responsible for the role of monetary authority. (Algerian Official Gazette, 2001, p. 04)
- **Amending the Money and Credit Law in 2003:** Ordinance 03-11, amending and supplementing the provisions of the Monetary and Loan Law 90-10 in 2003, regulated the functions of the Central Bank as a monetary authority in keeping with the existing economic conditions at the time. Therefore, Article 35 of it was formulated as follows: "The Bank of Algeria's mission is in the fields of money , credit , the management of foreign exchanges, providing and maintaining the best conditions for rapid growth in the economy while ensuring the internal and external stability of money (Algerian Official Gazette, 2003, p. 04). So We can conclude from the foregoing that the main objective of this amendment is to achieve monetary and economic stability.
- **Amending the Money and Credit Law in 2010:** The most important thing in this amendment was through Article 02 amending and supplementing Article 35 of Ordinance 03-11 of 2003, which stipulated that stability in the general level of prices is the final goal of monetary policy. That means targeting inflation directly by the monetary authority. (Algerian Official Gazette, 2010, p. 11)
- **Amending the Monetary and Loan Law in 2017:** After Decline in the Revenue Regulation Fund balance and the ineffectiveness of the bond loan operations in 2016, which were allocated to finance the government budget deficit. Consequently, the public authorities adopted the unconventional financing mechanism by Article 45 of Law No, 10-17 of 11 October 2017. (Algerian Official Gazette, 2017, p. 04)

2.4. Legal framework for monetary policy management tools in Algeria 2015-2022:

The use of monetary policy tools in Algeria was linked to oil prices in the global market, and the consequent changes in the level of liquidity at the local level. Therefore,

since 2016, there has been a radical change in the management of monetary policy, as it moved from the use of tools to absorb excess liquidity to the use of tools to pump liquidity. To ensure the refinancing of the banking system, in light of these circumstances, and after reactivation rediscounts as one of the monetary policy tools used to refinance commercial banks with liquidity, Article 20 bis of Regulation No, 20-09 of 28 December 2020, "The principal refinancing operations are subject to the guidance rate of the Bank of Algeria". (Bank of Algeria, 2020, p. 01). It was almost stable from 2016 until 2022, with a rate of 3.75%, and the Bank of Algeria relisted open market operations in March 2017, to pump liquidity with different maturity dates, while making the seven-day interest rate the main channel for managing monetary policy, and starting from November 2017, the Bank of Algeria turned to the unconventional financing mechanism to pump liquidity (Bank of Algeria, 2017, p. 96), to issue another regulation under No, 21-02 of June 10, 2021, which includes the implementation the special refinancing program. (Bank of Algeria, 2021, p. 02)

2.5. The relationship between the independence of the central bank and the effectiveness of monetary policy:

The independence of the central bank in implementing its policies is one of the most important requirements for the effectiveness of monetary policy, so we will address this effectiveness through the role of the central bank and its independence in implementing monetary policy.

2.5.1. Effectiveness and flexibility of monetary policy tools:

To achieve the final objectives of monetary policy, it is necessary to go through the intermediate objectives, which requires a high degree of flexibility and effectiveness in implementing these tools, Flexibility relates to ability of the central bank to adjust and change these tools whenever the economy needs to, while effectiveness relates to the extent to which monetary policy can influence economic activity, in order to achieve the final goals of monetary policy. (khalil, 2012, p. 168)

2.5.2. The independence of the central bank and the credibility of monetary policy:

The Central Bank is independent in the implementation of monetary policy when it is away from the dominance of fiscal policy, therefore not using monetary policy as a tool to finance the public budget deficit, because there is an inverse relationship between the latter and the central bank's independence. Also, the latter guarantees the credibility of monetary policy in the implementation of the Central Bank's tasks and the achievement of the established goals, especially the goal of controlling the inflation rates. Overall, monetary policy success in any economic system requires , in addition, to the independence of the central bank, the following conditions: (Rocho, 2020, p. 39)

- Determining the final goals of monetary policy accurately (targeting), and the availability of developed financial and monetary markets;
- The flexibility of the productive system to changes in the economy, especially, the monetary ones.

3. the public budget deficit of Algeria and financing methods for (2015-2022)

3.1. The concept of balance deficit: The budget deficit expresses a state of imbalance in the state's public budget, as a result of the inability of public revenues to cover public expenditures. There are several reasons for the general budget deficit, which we mention as follows: (Tobin, 2015, p. 172)

- Expansion of the state's role in public spending, under the slow pace of economic growth and the decline in public revenues, in addition to the high volume of tax evasion;
- The increase in military, political and social expenditures.
- The deterioration of the purchasing power of money, and the rise in perceptions of government corruption.

3.2. Analysis of the public budget deficit in Algeria for 2015-2022:

To analyze the state of the balance of the public budget in Algeria during the study period, we present the following table:

Table N°1: The evolution of the public budget deficit situation in Algeria for (2015-2022)

Unit: billion DA

Years	public revenue	public expenditures	budget balance	GDP	budget balance/GDP (%)
2015	4552.5	7656.3	-3104	16592	18.71
2016	5011.5	7297.4	-2286	17515	13.05
2017	6047.8	7282.6	-1235	18576	6.65
2018	6389.4	7732	-1343	20259	6.63
2019	6601.5	7741.3	-1140	20501	5.56
2020	6289.7	7823	-1533	18384	8.34
2021	5331.8	8642.6	-3311	22022	15.03
2022	7000.8	11610	-4609	24753	18.62

Source: Prepared by researchers, based on:

- Situation Report of Operations of SROT 2000-2019;
- Bank of Algeria, reports "Economic and Monetary Development (2015-2021)", and quarterly statistical bulletin, N. 60, September 2022.

Through the data of the above table, we notice that the public budget in Algeria was characterized by a deficit throughout the study period. The deficit moved from 3103.8 billion DA in 2015, equivalent to 18.71% of the GDP and 68.1% of total public revenues, to 1139.8 billion DA in 2019, constituting 5.56% of the GDP. As a result of the decline in petroleum revenues since mid-2014, Algeria has adopted a deflationary fiscal policy that seeks to reduce public expenditures and public investment and satisfied only with operations that are of the highest priority nature, and searches for other normal resources for public revenues such as raising fees, but in the years 2021 and 2022 and due to the severe economic recession, resulting from the global health crisis, Algeria returned to adopting an expansionary economic policy. Consequently, the public budget deficit amounted to 3,310.8 billion DA and 4,609.2 billion DA, respectively, accounting for 18.6% of the GDP in 2022.

3.3. Methods of financing the budget deficit in Algeria for 2015-2022:

3.3.1. Financing the budget deficit by the Revenue Regulation Fund:

The Revenue Regulation Fund is a mechanism for managing financial surpluses resulting from the difference between the reference oil price and the market price, in line with the absorptive capacity of the national economy and the preservation of the country's financial equilibriums. (Hadj Moussa, 2021, p. 22) The following table shows the use of The Revenue Regulation Fund to finance the budget deficit during the period (2015-2022):

Table N°2: The contribution of the Revenue Regulation Fund to financing the public budget deficit in Algeria for (2015-2022)

Unit: billion DA								
Years	2015	2016	2017	2018	2019	2020	2021	2022
Fund revenues	4960.3	2172.3	784.4	437.4	305.5	305.5	987.7	1631.8
Uses of fund to finance the budget deficits	2886.5	1387.9	784.4	131.9	0	0	0	0
Budget deficit coverage %	93.0	60.7	63.5	9.8	0.0	0.0	0.0	0.0

Source: Prepared by researchers based on:

- Situation of Funds of Regulations (FRR) 2000-2019;
- Bank of Algeria, report "Economic and Monetary Development 2021";
- Minister of Energy and Mines Mohamed Arkab, Intervention in the National People's Assembly, November 2022 via the website: mrp.gov.dz, accessed 10-06-2022.

Through the data of the above table, we notice the effective role of the Revenue Regulation Fund in financing the public budget deficit for (2015-2017), Through ranged ratio Contribution to covering the budget deficit between 60% And 93%, but at the end of 2017, the fund's balance was depleted after withdrawing the remaining 784.4 billion DA as a result of the decline in the revenue Regulation fund's resources after the drop in

oil prices since mid-2014. Similarly to 2018, the budget deficit was financed in amount of 131.9 billion DA by the Fund. Since then petroleum surpluses for the revenue Regulation fund growth were used directly to finance the budget deficit in the same year. With the increase in the balance of the fund in 2022, to more than 1,600 billion DA, raises the possibility of using it again to correct the imbalance of the public budget in the coming years.

3.3.2. Financing the budget deficit using the bond loan:

The bond loan mechanism was officially launched in Algeria on April 17, 2016 under the name "National Borrowing for Economic Growth", which aims to bring the cash mass outside the banking system in order to finance public projects, including financing the public budget deficit. (Metidji, 2021, p. 788)

The bond loan operations enabled to collect about \$5 billion, equivalent to 568 billion DA after the end of bond subscriptions in October 2016, which is a modest outcome compared to the budget deficit recorded in 2016, which amounted to 2285.9 billion DA, which made the government continue to search for new mechanisms to finance this deficit and avoid resorting to external borrowing.

3.3.3. Financing the budget deficit by the unconventional financing mechanism:

A. The concept of the unconventional financing mechanism in Algeria:

In the light of the general economic situation, as previously mentioned, Algeria adopted the unconventional financing mechanism that allow the Central Bank to issuing money without coverage or real consideration, in order to provide the necessary liquidity for the public treasury. As stipulated in article 45 bis of Law No. 10-17 of October 11, 2017, Bank of Algeria purchases Public Treasury Bonds by the Treasury directly in order to cover the needs of treasury financing and internal public debt financing in addition to financing the National Investment Fund, which should lead in the end to the equilibrium of the Public Treasury and balance of payments. (Algerian Official Gazette, 2017, p. 04)

B. The proceeds of the unconventional financing in Algeria during Period (2017-2022):

In the light of the continuing public budget deficit, which amounted to 2285.9 billion DA in 2016, then 1234.8 billion DA in 2017, and 1533.3 billion DA in 2020, the total proceeds of unconventional financing in 2019 amounted to about 6556.2 billion DA, it was directed in detail as follows: (Bank d'Algerian, 2019, pp. 04-05)

- 2470 billion DA were allocated to finance the public budget deficit over the three years from 2017 to 2019, and 1813 billion DA contributed to the payment of the public

debt related to the Sonatrach and Sonelgaz companies, in addition to the payment of the debts of the bond loan.

-The National Pension Fund also benefited (CNR) An amount of 500 billion DA, while the amount of 1773.2 billion DA was directed to the National Investment Fund to finance programs AADL and Structural Projects.

In terms of its allocation, the amount of 945.1 billion DA has been kept in the public treasury account at the Bank of Algeria, therefore it has not yet injected into the economy. For 656.7 billion DA, it remained in the FNI account with the public treasury, with the aim of using it when needed, and 3114.4 billion DA was injected into the economy. In general, these amounts did not keep up with the public budget deficit during this period. However, it posed a challenge for the central bank in ensuring price stability.

3.3.4. Financing the budget deficit through “the Special Refinancing Program”:

In the light of the turbulent economic situation, due to the continuing global health crisis Covid-19 and the resulting economic recession, and the growing public budget deficit for the thirteenth year in a row, the Bank of Algeria implemented in 2021 an accommodative monetary policy with the aim of stimulating the economy.

A. The concept of “the Special Refinancing Program”: It expresses an exceptional measure launched by the Bank of Algeria pursuant to Regulation No. 21-01 of June 10, 2021, it is reflected in the temporary waiver of the Bank of Algeria's liquidity to the banks, not exceeding 2100 billion DA. The Vesting period of these loans is one-year renewable twice. Funding is done only through Bonds issued by the public treasury within the framework of the purchase of loans compiled by public banks. (Bank of Algeria, 2021, pp. 01-02)

B. The proceeds of the Special Refinancing Program in 2021: Since the launch of the Special Refinancing Program in June 2021, the total proceeds of refinancing operations amounted to 1,680 billion DA by the end of 2021.

With reference to the public budget deficit, which amounted to 3310.8 billion DA in 2021, we found that the deficit was financed by 520 billion DA through the investments of Algeria's Bank by absorbable treasury bonds, while the financing of the deficit through Treasury bonds owned by public banks within the framework of the purchase of loans compiled, amounted to 1171.2 DA, which represents 35% of the budget deficit, and it is equivalent to 70% of the volume of funds injected to banks within the framework of the special program refinancing, while only 30% is actually directed to increase bank liquidity.

This really shows that this program adopted by the Bank of Algeria represents a part of the aspects of the unconventional monetary policy, which aims to finance the budget deficit in the first place, support the banking system, as well as boosting the real economy after the coronavirus pandemic. (Bank of Algeria, 2021, p. 44)

4. Analysis of the effectiveness of monetary policy in Algeria in the light of the budget deficit during the period (2015-2022)

4.1. Analysis of the impact of the budget deficit on the monetary mass and its counterparties in Algeria during the period (2015-2022):

Money supply management and its counterparties represents a challenge for monetary policy in the light of the continuing budget deficit, whether the central bank should buy government bonds in the primary or secondary market and how much money should be injected or withdrawn from the money market, in order to maintain fiscal balance. The following table shows the evolution of the monetary mass and its counterparties in Algeria during the period (2015-2022) under the budget deficit.

Table N°3: The evolution of the monetary mass (M2) and its Counterparties in Algeria for (2015-2022)

Unit: billion DA

Years	Monetary Mass M2	Growth M2 %	Foreign Assets	Public Credits	Economy Credits	GDP	Budget Balance
2015	13704.5	0.1	15375.4	567.5	7277.2	16591.9	-3103.8
2016	13816.3	0.8	12596	2682.2	7909.9	17514.6	-2285.9
2017	14974.6	8.4	11227.4	4691.9	8880	18575.8	-1234.8
2018	16636.7	11.1	9485.6	6325.7	9976.3	20259	-1342.6
2019	16506.6	-0.8	7598.7	7019.9	10857.8	20501.1	-1139.8
2020	17659.6	7.0	6518.2	9353.5	11182.3	18383.8	-1533.3
2021	20087.5	13.8	6559	12903.2	9839.2	22021.5	-3310.8
2022	21488.2	7.0	7690	12700.6	10198.7	24753.1	-4609.2

Source: Prepared by researchers based on:

- Bank of Algeria, reports "Economic and Monetary Development (2015-2021)", and quarterly statistical bulletin, N. 60, September 2022.

Through the above table, we notice that the money supply representing local liquidity decreased in 2015, and 2016, due to the decline in net foreign assets as a result of the drop in oil prices, however, the resumption of refinancing operations by the Bank of Algeria since March 2017 within the framework of unconventional financing (2017-January 2019) led to an increase in the money supply by 8.4% and 11.1% in the years of 2017, and 2018, respectively. With respect to 2020, and in the light of the increase in

loans directed to the government, the money supply grew by 7% compared to a decrease of 0.8% in 2019, after the implementation of the special program for refinancing banks in 2021, in which it accepts only the Treasury Bonds owned by public banks within the framework of the purchase of loans compiled. Consequently, the money supply grew significantly in 2021 and 2022, by 13.8% and 7%, respectively. With reference to the counterparties of the monetary mass, the persistence of the budget deficit led to a rise in the use of Treasury Bonds as a cover for currency issuance, what made loans to the government the primary cover of the monetary mass M2, followed by loans to the national economy.

In the end, the money supply in Algeria is directly linked to programs and mechanisms, aimed at one way or another at financing the public budget deficit, whether, it is financing internally through the central bank, or through commercial banks, if it is not at the expense of the private sector's monetary mass.

4.2. Analysis of the interest rate relationship with the budget deficit in Algeria during the period (2015-2022):

According to economic theory, the interest rate is directly proportional with the public budget deficit. In Algeria, we found that nominal interest rates remained constant for the duration of the study, the interest rate on loans was fixed at 8%, and the interest rate on deposits remained another stable at 1.75%. Despite the high volume of public borrowing from the domestic market to finance deficits in the general budget and the sharp decline in liquidity in many years, the real interest rates depend only on the inflation rates recorded, we therefore conclude that the interest rate is not affected by changes in the balance budget, because interest rate policy in Algeria is less effective in influencing economic activity as a result of the inflexibility of the real economic sector, where there is no active and sophisticated financial market, making the interest rates an unnecessary means for Algeria's decision makers. (World Bank, 2022)

4.3. The extent to the Achievement the final goals of monetary policy in Algeria for (2015-2022):

In order to know the extent of the effectiveness of monetary policy in Algeria, it is necessary to study its effectiveness in achieving its final goals in view of the financial situation, which is characterized by the persistent budget deficit. These goals are represented in reducing unemployment and the ability to achieve regular growth rates, achieving external balance and targeting inflation as a directly goal of monetary policy, The following table shows the development of macroeconomic indicators during this period.

Table N°4: The development of macroeconomic indicators in Algeria during the period (2015-2022)

Unit: billion DA

Years	2015	2016	2017	2018	2019	2020	2021	2022
Growth rate%	3.7	3.2	1.3	1.4	0.8	- 4.9	3.5	3.4
Unemployment rate %	11.25	10.2	10.3	10.4	10.5	12.2	11.7	11.5
Target inflation rate %	4	4	4	4	4	4	4	4
Actual inflation rate %	4.78	6.4	5.6	4.27	1.95	2.42	7.23	9.4
balance of payments(\$ Billion)	-27.5	-26	-21.7	-15.8	-16.9	-16.3	-1.4	-2.3
Exchange rate DZD /US \$	100.4	109.4	110.9	116.6	119.3	126.8	135.1	142.9

Source: Prepared by researchers based on:

- IMF, Report IMF Staff Completes Article IV Mission to Algeria, November 2022.
- World Bank data, across: data.albankaldawli.org, accessed 3-6-2022.
- Bank of Algeria, reports "Economic and Monetary Development (2015-2021)", and quarterly statistical bulletin, N. 60, September 2022.

4.3.1. The Effectiveness monetary policy in achieving economic growth

Good economic growth is achieved through the adoption of an expansionary monetary policy that stimulates aggregate demand through investment. In Algeria, it is clear from the last table that economic growth rates recorded a downward trend during the study period, Proof of this, the growth rates moved from 3.7% in 2015, to 0.8% in 2019, this is mainly due to the large balance of payments deficit, which reached \$27.53 billion US in 2015, This is due to the large decline in oil export revenues after the decrease in oil prices to less than \$53 per barrel in 2015, compared to \$110 per barrel in the first half of 2014. Consequently, Algeria implemented a restrictive fiscal policy, which reduced the budget deficit and led to continued low growth rates. In in 2020, following the unprecedented economic recession because of the Covid-19 pandemic, the growth rate contracted by -4.9%, the lowest in more than 20 years.As a result of this situation, in 2021, Algeria adopted an expansionary economic policy through implementing the Special Refinancing Program, and the rise in public expenditures, this led to an unprecedented rise in Algeria's budget deficit to 3310.8 billion DA and 4609.2 billion DA, respectively. This policy resulted in an increase in non-hydrocarbon GDP from -3.9% in 2020, to 2.4% in 2021, which allowed real GDP growth of 3.5% and 3.4% in 2021 and 2022 respectively. (IMF, 2022)

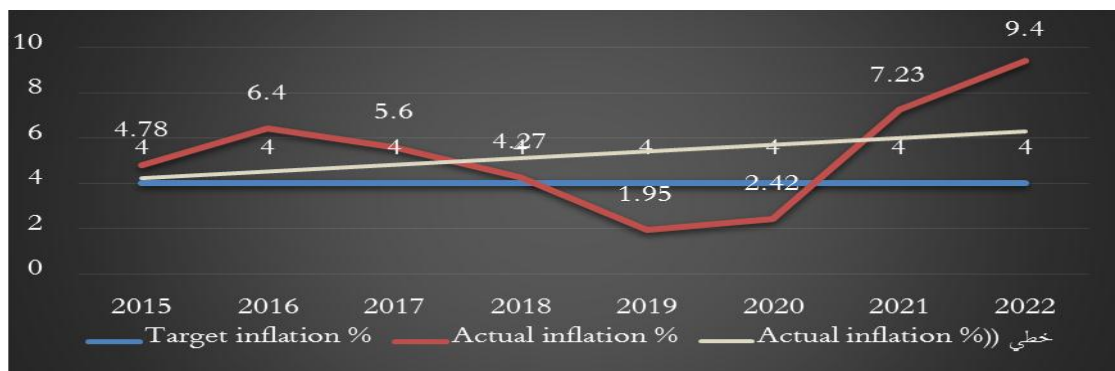
We conclude from the foregoing that placing monetary policy at the service of financing public expenditures has improved the achieved growth rates, but they have remained irregular and fluctuating, which indicates the fragility of the followed economic policy.

4.3.2. The effectiveness of monetary policy in low unemployment

The employment goal is directly related to the extent to which the economic growth goal is achieved, which is reflected positively on the employment goal through a decrease in unemployment rates. It should be noted that this goal is not exclusive to monetary policy only, but rather the economic policy as a whole participates in it. In the case of Algeria, we note from the above table, that the unemployment rate during the study period took an upward trend, which reflects the negative tendency of economic growth recorded during this period, the unemployment rate increased from 11.25% in 2015, to 12.2% in 2020, because of Algeria's austerity policies beginning in 2016, due to the decline in oil prices and the resulting reduction in public expenditures, reduced public investment, and only operations of the highest priority, along with the economic recession caused by the Covid-19 pandemic since 2019. In 2021, the unemployment rate decreased again after adopting an expansionary economic policy by the government, it decreased by 0.5 percentage points, to record 11.7%, then it continued to decline in 2022, by recording 11.5%. (World Bank, 2022) These results are generally due to the fluctuation in economic growth rates.

4.3.3. The effectiveness of monetary policy in achieving the goal of stabilizing the general level of prices:

Fig N° 1: The evolution of the actual and target inflation rate in Algeria during the period (2015-2022)



Source: Prepared by researchers based on the table data N°4.

The goal of price stability is one of the main goals that indicates the effectiveness of monetary policy in Algeria, especially after the legal establishment of price stability as a direct and primary goal of monetary policy through Ordinance 04-10 of 2010, That means targeting inflation directly by the monetary authority, but this become a real challenge of monetary policy in view of the continued adoption of a deficit financing policy for the general budget. As we note from the data of the previous table and figure, inflation rates in most of the study years were higher than the central bank's target rate of 4%. The inflation rate moved from 4.78% in 2015 to 6.4% in 2016, exceeding the central bank's target rate by 60%, although the weak growth of the money supply during the same two years. In addition, imported inflation contributed to this rise only by

21.8%, so this rise in inflation is due to the expectations of economic traders and the lack of sufficient competition and regulation of markets. The Inflation continued to exceed the target rate in 2017 and 2018, especially after the adoption of unconventional financing for the public budget deficit, which contributed more than half to the growth of the monetary mass M2 during these years. Under the impact of the sharp contraction in bank liquidity, the inflation rate in 2019 and 2020 fell to 1.95% and 2.42%, respectively, as a result of the Bank of Algeria's development of a special refinancing program. With respect to 2021 and 2022, in view of imported inflation resulting from the global health crisis (Covid-19), high budget deficit to record levels and the expansion of money supply by 13.7% and 6.9%, respectively as a result of the Bank of Algeria's implementation of the Special Refinancing Program, inflation reached 7.23% and 9.4%, respectively,

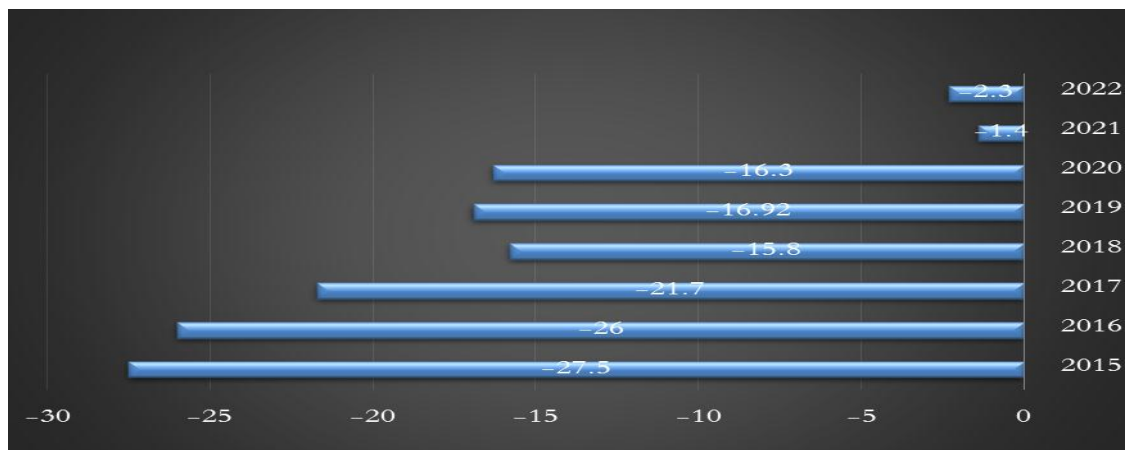
The Government's financing of the growing budget deficit through monetary issuance is inappropriate to the growth of national economy, which makes the monetary policy of the Bank of Algeria unable to control inflation rates.

4.3.4. the effectiveness of monetary policy in achieving Equilibrium in the balance of payments

This objective is reflected in the improvement of balance of payments and exchange rate stability. The Figure below N.02 shows that Algeria's balance of payments situation has improved significantly throughout the period (2015-2022). It recorded an unprecedented deficit in 2015 of \$27.53 billion after oil prices fell below \$53 per barrel. After that, the balance of payments deficit witnessed successive declines, reaching \$2.47 billion in 2022, a decrease of 91.5% since 2015, mainly due to the Algerian public authorities' determination to adopt a policy aimed at developing the national economy by minimizing imports and raising exports outside the oil sector, which was embodied in the positive growth of the trade balance by 108% from US \$13.4- billion to US \$1.15 billion, also. Exports outside the oil sector increased from \$1.9 to \$4.5 billion.

With respect to the exchange rates, they witnessed a noticeable deterioration from DA 100.4 per dollar in 2015 to DA 142.9 per dollar in 2022. They are determined by the Bank of Algeria, which shows us that the main objective of these reductions under the lack of response of the economy to them in increasing exports, consists in the increase in the proceeds of oil denominated in US dollars when converted into Algerian dinars, according to the balances of the national economy, especially with regard to financing the expenditures of the public budget.

**Fig N° 2: The evolution of the balance of payments balance in Algeria during the period
(2015-2022)**



Source: Prepared by researchers based on the table data N°4.

5. Conclusion

As a result of the efforts of the public authorities to achieve economic and social balance in a situation characterized by a decline in the country's incomes due to the collapse of oil prices in world markets, Algeria's public budget suffered a persistent deficit, Algeria adopted a set of different traditional and unconventional means to finance this deficit during the study period, which affected the monetary policy's ability to achieve its final objectives effectively.

According to our study, we reached the following results:

- The growth of the money supply in Algeria was directly linked to the programs and mechanisms that were aimed in one way or another to finance the deficit in the public budget, whether the financing is directly through the central bank, or indirectly through commercial banks in a case not at the expense of the private sector monetary mass.
- The continued financing of public budget deficits through internal loans has led to drastic changes in the structure of Algeria's monetary mass counterparties, making the public credits the basis for cash issuance since 2020.
- Putting the monetary policy in the service of financing public expenditures during the period (2015-2022) improved the achieved growth rates, but they remained irregular and fluctuating, which indicates the fragility of economic policy.
- Unemployment rates have not decreased significantly owing to the fluctuating economic growth rates during the period of study (2015-2022).
- The Bank of Algeria's monetary policy did not actually succeed in curbing inflation during the study period, mainly because the government financed the growing budget deficit through monetary issuance inappropriately as the national economy grew, and secondly because of inflation imported after the global health crisis (Covid-19),

- The balance of payments improved during the period of study, mainly due to the Algerian public authorities minimized imports and worked to raise exports outside the oil sector 'aimed at developing the national economy, However, this curbing imports coincided with the expansion of public spending and increasing project demand for imported materials in 2021 and 2022, which pushes inflation to record highs over 9%.

The study concluded by a serie of recommendations ,including:

- The need to give the Bank of Algeria sufficient independence with regard to the formulation, practice +and implementation of monetary policy as appropriate for good control of inflation rates;
- The necessity of activating Islamic banking tools in the Algerian banking system in line with society's beliefs, on the one hand, and withdrawing the monetary mass located outside the banking service, on the other;
- Avoid financing the public budget through inflationary sources of financing and diversify Algeria's sources of income to ensure the improvement of ordinary resources of the public budget.

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