

Analyzing the Role of Monetary Policy in Ensuring Monetary Stability in Algeria: An Empirical Study

تحليل دور السياسة النقدية في ضمان الاستقرار النقدي في الجزائر: دراسة تطبيقية

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Abstract

This study aims to analyze the impact of monetary policy on the stability of money supply in Algeria during the period 2010-2021 using Principal Component Analysis (PCA). The analysis results indicate that two main factors explain most of the variations in the studied variables: the first factor is associated with liquidity and macroeconomic conditions, while the second factor is more closely linked to inflation and economic growth.

The study also concludes that Algeria's monetary policy has been affected by an imbalance in its instruments, where expansionary policies have contributed to rising inflation and weak economic growth. Therefore, adopting more balanced monetary strategies is necessary to ensure macroeconomic stability and enhance the effectiveness of monetary policy tools.

Keywords: Monetary policy, money supply, principal component analysis, economic stability.

JEL Classification: E52, E58, C38, O55.

ملخص

تهدف هذه الدراسة إلى تحليل أثر السياسة النقدية على استقرار العرض النقدي في الجزائر خلال الفترة 2010-2021، من خلال استخدام أسلوب التحليل العاملي للمركبات الرئيسية (ACP). حيث أظهرت نتائج التحليل أن هناك عاملين رئيسيين يفسران معظم التباينات في المتغيرات المدروسة: حيث ارتبط العامل الأول بالسيولة وظروف الاقتصاد الكلي. أما العامل الثاني، فكان أكثر ارتباطاً بمعدل التضخم والنمو الاقتصادي. كما خلصت الدراسة إلى أن السياسة النقدية الجزائرية تأثرت بعدم التوازن بين أدواتها، حيث ساهمت السياسات التوسعية في زيادة التضخم وضعف النمو الاقتصادي. لذلك وجب تبني استراتيجيات نقدية أكثر توازناً لضمان استقرار الاقتصاد الكلي وتعزيز فعالية أدوات السياسة النقدية.

كلمات مفتاحية: السياسة النقدية، الكتلة النقدية، تحليل المركبات الرئيسية، الاستقرار الاقتصادي

تصنيف JEL: E52, E58, C38, O55.

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Introduction

Monetary policy is one of the primary government tools for economic control, aiming to achieve balance in both the financial and economic systems and regulate money flow. This policy plays a significant role in many countries, as it greatly impacts and controls the money supply. Algeria, like other nations, faces various economic challenges related to money supply and its effects on the national economy.

As a petroleum-rich country, Algeria is highly impacted by fluctuations in oil and gas prices, which are the country's main natural resources and a primary source of revenue. In addition to these price fluctuations, Algeria faces other challenges related to money supply, such as high demand for cash and inflation—one of its major economic issues. Inflation affects consumers' purchasing power and increases production costs, which can worsen the monetary situation.

Based on this, analyzing the role of monetary policy in controlling the money supply in Algeria becomes crucial. The Central Bank of Algeria is the authority responsible for implementing this policy and managing the money supply by utilizing various tools and policies to achieve financial and economic stability. However, achieving this stability is challenging due to oil and gas price fluctuations and other economic pressures that influence the money supply. Therefore, a comprehensive and effective monetary policy is needed to address these challenges and ensure the desired financial stability.

Additionally, the impact of monetary policy on Algeria's major economic sectors, such as industry, agriculture, and trade, must be considered. When monetary policy is effective, investments are directed, and economic activities are stimulated, promoting economic growth and increasing the money supply. Generally, achieving a sustainable balance in the money supply strengthens economic and monetary stability, contributing to economic growth and improving living conditions for Algerian citizens.

Since gaining independence, Algeria has pursued various reforms to meet the needs of its national economy and achieve monetary stability through a balanced and appropriate monetary policy. This monetary policy should focus on regularly monitoring and reviewing economic and financial data, including inflation rates, economic growth, and capital flows. The Central Bank and other relevant authorities in Algeria must adopt a transparent and balanced approach in making

decisions concerning money supply policy. Furthermore, monetary policy should consider economic expectations and global and regional developments, as external shifts can impact Algeria's money supply.

From the above, we can formulate the following problem statement: **How does monetary policy impact the money supply in Algeria, and to what extent can it achieve economic development?**

To address this issue, we propose the following hypothesis: **"The implementation of a well-balanced monetary policy in Algeria significantly influences monetary stability and economic performance."**

1. Literature review

The studies examining the impact of monetary policy on money supply stability are extensive. This relationship has been analyzed across various countries with different levels of economic development, using diverse timeframes, methodologies, and statistical approaches. This subject has garnered significant attention in numerous economic research endeavors.

The International Monetary Fund (2015) addressed the interaction between monetary policy and financial stability in one of its reports, providing a theoretical and comparative analysis of monetary policies in both advanced and emerging economies. The report concluded that monetary policy functions alongside financial stability, and neglecting the latter when formulating monetary policy may lead to long-term economic imbalances. (International Monetary Fund, 2015)

In a similar context, a study by Boyarchenko, N., Favara, G., & Schularick, M. (2022) explored the same relationship using economic models based on time-series data from several advanced economies. Their findings indicate that an expansionary monetary policy during periods of economic growth can lead to the accumulation of financial imbalances, increasing the risk of future financial crises. (Boyarchenko, 2014)

Another study by Adrian, T., & Liang, N. (2018) conducted a statistical analysis of monetary variables using data from the World Bank and the International Monetary Fund. The study confirmed that financial market stability is indirectly influenced by fluctuations in interest rates.

Therefore, targeting interest rate stability should be accompanied by effective financial oversight. (Adrian, T., Liang, N, 2018)

In their study focusing on the interaction between monetary policy and financial stability in the Eurozone, Bochmann, P., & All employed a Quantile Vector Autoregression (VAR) model. They concluded that unconventional monetary policies, such as quantitative easing, can enhance financial stability, but they may also lead to significant asset price bubbles if not carefully controlled. (Bochmann. P and All, 2023)

In a macroeconomic policy review following the global financial crisis in industrialized nations, Blanchard, O and All (2010) emphasized the necessity of reassessing the role of monetary policy. Their findings suggest that monetary policy should not be confined solely to targeting inflation but should also ensure the stability of financial and credit markets. (Blanchard, 2010)

Similarly, Woodford, M. (2012) conducted a theoretical analysis on inflation targeting as a tool for enhancing financial stability. His study concluded that inflation targeting helps reduce economic volatility, but it cannot be the sole instrument for achieving financial stability, necessitating interventions from central banks. (Woodford . M, 2012)

Gambacorta, L., & Signoretti, F. M. (2014), in their study analyzing the effectiveness of monetary policy in addressing financial imbalances using DSGE models that incorporate the banking sector, found that "prudential monetary policy"—which anticipates crises by limiting monetary expansion—can mitigate the severity of financial crises in the long term. (Gambacorta, 2014)

Jones, M in his study "Central Bank Strategies for Combating Inflation and Controlling Money Supply," focused on evaluating the impact of central bank strategies on inflation. By analyzing data from both advanced and emerging economies, the study found that the effectiveness of monetary policy depends on transparency and central bank independence. Countries with more independent central banks tend to experience lower inflation rates.

Similarly, Patterson, D.C. (2021) confirmed the findings of the previous study. His research demonstrated that independent central banks achieve better monetary stability, as their decisions

are less influenced by short-term political pressures. This conclusion was based on a comparative study of countries with varying levels of central bank independence. (Patterson, 2021)

Our quantitative study aims to contribute to this research effort, particularly given the scarcity of empirical studies on this topic in Algeria. This research seeks to analyze the role of monetary policy in achieving monetary stability in Algeria, with the ultimate goal of contributing to overall macroeconomic stability. First subtitle

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2. Descriptive Analysis of quantitative Monetary Policy Instruments and Money Supply in Algeria

In this paragraph, we present a descriptive analysis of the quantitative monetary policy tools used by the Bank of Algeria to regulate the money supply, with their fundamental applications starting in 1994.

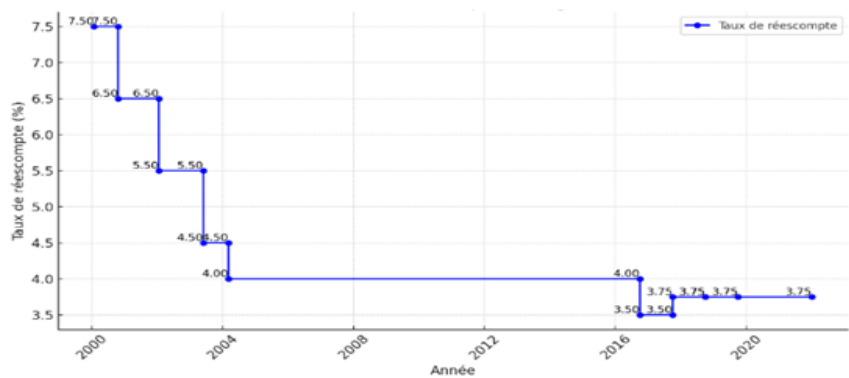
2.1 Analysis of quantitative Monetary Policy Instruments

- Analysis of Rediscount Rates

According to the attached figure, there is a noticeable gradual decline in the rediscount rate, which was 7.5% in 2000 and decreased to 6.5% in 2002. This decline is attributed to the healthy financial status of banks, which reduced their refinancing levels at the Bank of Algeria from DZD 170.5 billion in 2000 to DZD 102.9 billion in June 2002, helping to curb the growth of the money supply. This trend continued in 2003 and 2004, with the rediscount rate falling to 4.5% and then to 4%, remaining steady until 2016 due to stable inflation rates at low levels.

The continued improvement in the financial position of banks, along with excess liquidity, led to a decreased demand for central bank refinancing; since late 2001, banks have not sought refinancing, which explains the stability of the rediscount rate from 2004 to 2016, indicating the effectiveness of this tool. In late 2016, the rate dropped further to 3.5%, then stabilized at 3.75% from 2017 to the present, a result of low inflation rates and a lack of refinancing demand from the Bank of Algeria.

Fig.1. Rediscount Rates in Algeria for the Period (2000-2021).



Source: Prepared by researchers based on data from the Bank of Algeria, Quarterly Statistical Bulletin, Issue 60, June 2022, p. 17.

- **Required Reserve Ratio**

The required reserve ratio is one of the regulatory mechanisms established by Monetary and Credit Law 90-10. Article 93 of this law specified that the required reserve ratio should not exceed 28%, except under legally defined necessary circumstances. Initially, the law allowed this tool to be used as a monetary policy instrument. However, Ordinance 03/11, which amended the previous law, did not mention this tool explicitly. The Bank of Algeria, however, reintroduced and activated it through an instruction issued in 2014, which set the required reserve ratio for various types of deposits at a maximum of 15% without exception.

In Algeria, the application of this policy includes providing a return on the required reserves held by banks in the form of interest, calculated based on the reserve balance maintained with the Bank of Algeria. The following figure (Figure 1) illustrates the trend in the required reserve ratio in Algeria over the period 2001–2021.

Fig.2. Trend in the Required Reserve Ratio in Algeria (2001–2021).

Source: Prepared by the researchers based on data from the Bank of Algeria, Quarterly Statistical Bulletin, Issue No. 60, June 2022, p. 17.

- Open Market Operations

Open market operations are one of the key tools employed by the Bank of Algeria to control the volume of liquidity in the economy. Through these operations, the Bank trades in public bonds with a maturity period not exceeding six months, ensuring that the total value of these bonds does not exceed 20% of the total ordinary revenues of the designated fiscal year. This approach was later adjusted with the issuance of Ordinance No. 03-11 related to money and credit, which stipulated in Article 45 that the Bank of Algeria is prohibited from intervening in the primary market to acquire treasury bonds.

Despite the importance of this tool, it was initially applied in 1996, when the Bank of Algeria began purchasing short-term public bonds. Subsequently, the Bank faced difficulties in selling these bonds to absorb the excess liquidity, even though there was a surplus of liquidity in 2001. Since 2004, the monetary authorities have made concerted efforts to activate the open market tool by encouraging economic actors to issue medium- and long-term securities, with the aim of achieving better monetary balance.

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- Tender Loans by Announcement

The tender loans by announcement mechanism was first utilized in May 1994 to provide the necessary liquidity to the economy, created as a substitute for the rediscount rate as a primary tool for liquidity management. According to Instruction No. (95-28), the process involves the Bank of Algeria purchasing public or private bonds. Under this system, the Bank of Algeria announces a minimum interest rate prior to the tender, after which banks and financial institutions submit their bids in terms of interest rates and loan amounts. Initially, tenders were held every six weeks, but since 1996 they have been held every three weeks due to their effectiveness in rebalancing the monetary market.

- Trust Operations

The Bank of Algeria intervenes in the money market by providing liquidity through adjustments to the negotiated interest rate, with the amount determined based on the Bank's projections and established standards. This type of operation relies on a principle where the borrowing bank must provide collateral, in the form of public or private bonds, to the lending bank. These operations are secured loans for a specified term, where the borrowing bank temporarily transfers bonds in exchange for debt. Upon loan maturity, the bonds are returned to the borrower. Although trust operations can be two-directional, they are used solely for injecting liquidity in Algeria, especially with the observed surplus in liquidity across the banking system. The interest rate set by the Bank of Algeria serves as a market guideline. (لوتيس، صفحة 2010)

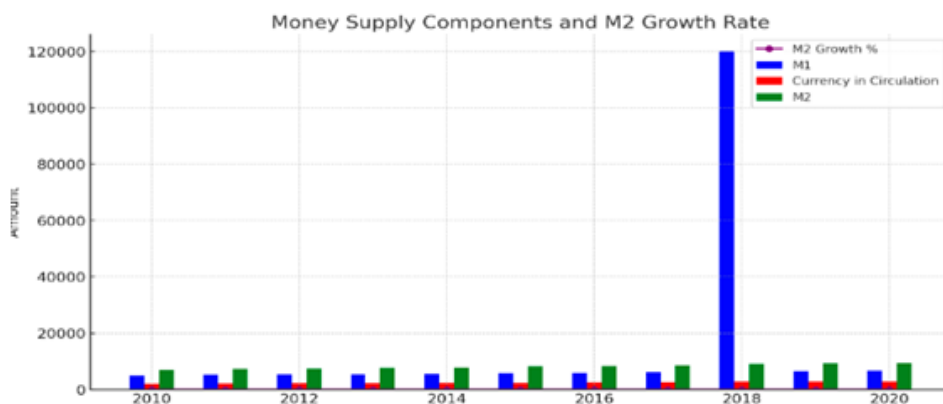
- Liquidity Recovery by Tender

The Bank of Algeria introduced the liquidity recovery tool by tender in April 2002 under Instruction No. 02/2002, using this method as an indirect means to intervene in the money market. This tool has continued to develop, with a three-month liquidity recovery instrument added in August 2005, and a six-month one in January 2013. This instrument is highly flexible, allowing banks to efficiently manage their liquidity. Since 2002, the Bank of Algeria has employed this tool on a weekly basis, establishing it as one of the principal tools in the execution of Algeria's monetary policy (بورشة، 2019)

2.2 Development of the Money Supply in Algeria (2010-2020)

The monetary mass in Algeria (M2) consists of legal tender and demand deposits, which represent the narrow money supply (M1), in addition to quasi-money. (Ali and Ben Smain Hayat, 2022, p. 24). To understand the development of the monetary mass in Algeria during the study period, we present the evolution of its components through the following chart:

Fig.7. Development of the Monetary Mass in Algeria.



Source: Prepared by the researchers, Bank of Algeria, Quarterly Statistical Bulletin, No. 25, 42, and 55, March 2014, p. 20.

The dramatic increase in M1 in 2018, without a corresponding surge in M2 growth rate, might suggest that this event was temporary or targeted, rather than a shift in long-term monetary policy. It may have been a response to short-term economic pressures without intended long-lasting effects on the broader money supply. This approach reflects a potential central bank strategy of

using targeted liquidity measures to manage immediate economic challenges while maintaining a stable growth rate in overall money supply, thus preventing inflationary risks. This approach balances between providing liquidity and maintaining monetary stability, an indication of prudent economic management.

3. Data and Methodology

As part of our research and to achieve the study's objective, we chose to work with annual time series data covering the period 2010-2021, with a total of 11 observations. The study data were collected from various key sources, such as World Bank data and the Statistical Bulletin of the Bank of Algeria. In this study, we relied on three groups of variables:

Quantitative monetary policy indicators (inputs), Targeted monetary policy indicators (outputs), and Money supply.

The dataset was analyzed using Exploratory Factor Analysis (EFA), starting with preliminary tests, followed by the correlation matrix, and finally the statistical Factorial Map. (Pagès, 2013).

Table1. Description of Study Variables.

Variable	Description	Explanation
TR	Rediscount Rate	The interest rate at which the central bank provides short-term funding to financial
TI	Inflation Rate	The percentage increase in the general price level of goods and services over time.
TCE	Economic Growth Rate	The annual percentage change in a country's GDP.
SC	Trade Balance	The difference between exports and imports of goods and services.
TC	Unemployment Rate	The percentage of the labor force that is unemployed and actively seeking work.
TRO	Required Reserve Ratio	The percentage of depositors' funds that banks must hold in reserve.
Mo	Money Supply	The total amount of monetary assets available in an economy, including cash, demand deposits, and

Source: Prepared by the researchers.

The selection of these variables was guided by a comprehensive literature review, as well as the availability and reliability of data from various official sources.

4. Results and Discussion

At this stage, the various results related to the study variables were presented and analyzed using the principal component analysis method. Based on these analyses, we were able to identify the interrelated relationships between monetary policy instruments and the money supply during the study period, allowing us to draw important conclusions about the effectiveness of the implemented policy

4.1 Descriptive Statistics

The following table presents the results of the univariate analysis related to the descriptive statistics of the study variables, including the arithmetic mean (*Moyenne*), standard deviation (*Écart-type*), and sample size. Overall, the results indicate significant fluctuations in some variables, such as the money supply and trade balance, which may suggest economic instability.

However, the economic growth rate and inflation appear to be relatively stable, with a higher degree of stability observed in the discount rate and the required reserve ratio. The average money supply reached approximately 22,709.03 billion monetary units, reflecting the total money supply in the economy. The average economic growth rate stood at 2.67%, indicating moderate economic growth, accompanied by relative fluctuations in inflation, which averaged around 4.69%. The unemployment rate remained relatively high at 10.98%.

These results coincided with a slight trade deficit in the trade balance, despite the discount rate remaining stable with minimal fluctuations.

4.2 Correlation Matrix

This matrix presents the linear correlation coefficients between the different variables of the study. The results indicate that most relationships are inverse. Specifically, the money supply exhibits a strong negative correlation with the trade balance (-0.721) and the rediscount rate (-0.616), suggesting that an increase in the money supply may exacerbate trade deficits and lead to a decline in the rediscount rate. This could reflect expansionary monetary policies that are ineffective in stimulating economic growth.

Economic growth, in turn, shows a negative correlation with unemployment (-0.526), confirming the traditional relationship where higher growth tends to reduce unemployment rates. It also has a positive but relatively weak correlation with the trade balance (0.403) and the required reserve ratio (0.341), indicating its link to monetary policy stability.

Regarding inflation, it exhibits a weak correlation with economic growth (0.242) and a moderate correlation with unemployment (0.295), potentially reflecting stagflation (a simultaneous rise in inflation and unemployment).

As for unemployment, it has a strong negative correlation with the rediscount rate (-0.635) and a moderate negative correlation with the required reserve ratio (-0.367), suggesting that the use of these monetary policy instruments could help reduce unemployment levels.

Finally, the rediscount rate shows a strong positive correlation with the trade balance (0.677), implying that an increase in the rediscount rate could improve the trade balance by influencing exchange rates and financial flows.

4.3 Preliminary Diagnostic Tests

The good results of the KMO test (0.738), along with the statistically significant Bartlett's test (0.008), indicate that the data used is highly suitable for conducting factor analysis.

4.4 Total Variance Explained Analysis

The table below presents the explained variance values derived from the principal component analysis, aiming to reduce the actual number of variables while preserving the maximum amount of overall information. The results indicate that the first component (Composante 1) accounts for 53.03% of the total variance, corresponding to an eigenvalue of 3.712. This suggests that this factor explains a significant proportion of the variance in the data, making it the most important component in understanding the relationship between monetary policy instruments and money supply.

Regarding the second component (Composante 2), it has an eigenvalue of 1.325, explaining 18.92% of the total variance. This brings the cumulative variance explained to 71.95%, meaning that the first two components together account for the majority of the variance in the studied variables.

Therefore, we will focus on these first two components, as they are the most significant, indicating a strong structure in the relationship between monetary policy instruments and money

supply. The remaining components have eigenvalues lower than 1, contributing only marginally to the total variance, and thus can be considered negligible in the analysis.

This result allows us to concentrate on the first and second components in the economic analysis to better understand how monetary policy tools influence the overall money supply.

4.5 Analysis of the Principal Component Matrix

The Principal Component Analysis (PCA) reveals that two main factors explain most of the variations in monetary policy and financial stability. This matrix illustrates the relationship between the study variables and the extracted principal components. Its interpretation follows the same logic as the correlation matrix.

At the level of the first principal component, the analysis indicates a strong negative correlation with the money supply (-0.865), suggesting that this component largely represents changes in money supply, where an increase in this factor corresponds to a decrease in liquidity. A similar negative relationship is observed for the unemployment rate (-0.867), indicating that this component reflects an economic environment where rising unemployment is associated with declining money supply.

Conversely, the discount rate (0.846) exhibits a strong positive correlation with the first component, implying that an increase in this rate affects borrowing costs and banking liquidity. A similar positive relationship is observed for the trade balance (0.832), suggesting that this component may also be linked to the development of external trade as a factor influencing money supply. Therefore, the first component can be interpreted as primarily related to liquidity and macroeconomic conditions, integrating the effects of money supply, unemployment, discount rates, and trade balance.

Regarding the second principal component, the analysis reveals a strong positive correlation with inflation (0.947), indicating that this factor primarily explains fluctuations in inflation rates. A similar but weaker relationship is observed with economic growth (0.707), suggesting that this component captures the impact of changes in overall economic performance. On the other hand, the reserve requirement ratio shows a moderate positive correlation with the first component (0.550) and a negative correlation with the second component (-0.394). This suggests that it influences both factors to some extent, but it is not the most defining variable for either. Thus, the second component can be interpreted as reflecting the interaction between price levels (inflation) and economic activity.

Given that inflation and economic growth are closely linked to the second component, policymakers must closely monitor this factor when implementing monetary policies aimed at ensuring price stability without adversely affecting economic growth. On the other hand, since unemployment and money supply are negatively correlated with the first component, caution is required when adopting contractionary monetary policies to avoid increasing unemployment rates. Finally, the relationship between the discount rate and external trade requires further analysis to better understand how monetary policies impact trade balance and overall financial stability.

4.6 Factorial Map

The study period can be divided into three main phases:

- **Phase One: 2010 - 2014 | The Period of Monetary Fluctuations and High Inflation**

This period witnessed a lack of activation of monetary policy tools to curb inflation. The rediscount rate (TR) was not raised sufficiently to restrain excessive credit, nor was the required reserve ratio (TRO) effectively used to control market liquidity. Additionally, there was no effective regulation of interest rates, leading to an increase in market liquidity without strong oversight.

As a result, inflation (TI) rose significantly due to increased government spending and domestic demand. Furthermore, the trade balance (SC) fluctuated due to changes in oil prices and weak competitiveness. Overall, the lack of a well-controlled monetary policy during this period weakened monetary stability.

- **Phase Two: 2012 - 2017 (excluding 2013-2014) | The Period of Monetary Reforms and Relative Improvement**

This period saw a relative stabilization in economic growth, which positively impacted a slight improvement in overall economic indicators due to the adoption of a stricter monetary policy. The central bank raised the rediscount rate (TR) and increased the required reserve ratio (TRO) to encourage savings on one hand and reduce money supply to curb inflation on the other.

Additionally, this period witnessed an improvement in economic growth (TCE) and a relative decline in unemployment (TC) due to the stimulation of certain productive sectors. There was also a slight improvement in the trade balance (SC) as a result of reducing unnecessary imports.

- **Phase Three: 2018 - 2019 | The Period of Expansionary Monetary Policy and Inflation Risks**

This period was characterized by a significant increase in money supply (Mo) due to expansionary monetary policies. However, it was accompanied by a notable decline in economic growth (TCE) from 1.20% to 0.8%. Additionally, the trade balance (SC) remained in deficit due to rising imports and declining exports.

Despite a slight decrease in unemployment (TC), it was not sustainable. Meanwhile, inflation (TI) continued to rise due to increased market liquidity.

The expansionary monetary policy helped stimulate the economy by lowering the rediscount rate (TR) to encourage lending and investment, while also reducing the required reserve ratio (TRO) to increase liquidity flow in the market. However, this approach intensified inflationary pressures, which could threaten long-term monetary stability.

Conclusion

The results of this study provide relatively deep insights into the effects of monetary policies on monetary stability in Algeria during the studied period. Through the analysis of various results—such as the correlations between variables, diagnostic tests, vocabulary maps, and others—it was confirmed that expansionary monetary policies and financial stagnation have varying effects on macroeconomic indicators, indicating the need to adopt flexible and balanced monetary strategies. The analyses also show that certain periods experienced significant economic fluctuations due to the ineffectiveness of some monetary policy tools, which calls for a deeper analysis to implement monetary reforms to achieve long-term stability in the national economy. Accordingly, the following recommendations can be presented:

- **Adopting a flexible monetary policy approach** that allows for adjustments based on economic changes—tightening monetary policy during inflationary periods and easing it during economic slowdowns.
- **Encouraging banks to issue long-term financial instruments** to reduce reliance on short-term liquidity, thereby enhancing financial stability.
- **Closely monitoring the growth of the money supply (M2)** to control inflation and regulate liquidity in the market effectively.
- **Enhancing coordination between monetary and fiscal policies** to ensure long-term macroeconomic stability.

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Appendices

- Descriptive Statistics

	Moyenne	Ecart-type ^a	n analyse ^a
Masse monétaire	22709,0334	4844,24153	11
Taux de croissance économique	2,6700	1,07801	11
taux d'inflation	4,6973	1,80143	11
Taux de chômage	10,9800	,80225	11
Le taux de réescompte	3,8636	,17189	11
Solde commerciale	-,2840	16,68229	11
Taux de reserve	9,0909	3,08073	11

- Correlation Matrix

Matrice de corrélation ^a							
	Masse monétaire	Taux de croissance	taux d'inflation	Taux de chômage	Le taux de réescompte	Solde commerciale	Taux de reserve
Masse monétaire	1,000	-,606	-,186	,676	-,616	-,721	-,384
Taux de croissance	-,606	1,000	,242	-,526	,492	,403	,341
taux d'inflation	-,186	,242	1,000	,295	-,131	,146	-,178
Taux de chômage	,676	-,526	,295	1,000	-,635	-,789	-,367
Le taux de réescompte	-,616	,492	-,131	-,635	1,000	,677	,545
Solde commerciale	-,721	,403	,146	-,789	,677	1,000	,166
Taux de reserve	-,384	,341	-,178	-,367	,545	,166	1,000

- Qualité of representation

Qualité de représentation			Matrice des composantes ^a		
	Initial	Extraction		Composante	
				1	2
Masse monétaire	1,000	,804	Masse monétaire	-,865	-,235
Taux de croissance	1,000	,596	Taux de croissance	,707	,309
taux d'inflation	1,000	,897	économique		
Taux de chômage	1,000	,805	taux d'inflation	-,004	,947
Le taux de			Taux de chômage	-,867	,229
réescompte	1,000	,751	Le taux de réescompte	,846	-,187
Solde commerciale	1,000	,727	Solde commerciale	,832	,186
Taux de reserve	1,000	,457	Taux de reserve	,550	-,394

Méthode d'extraction : Analyse en composantes principales.

Variance totale expliquée

Composante	Valeurs propres initiales			Extraction Sommes des carrés des facteurs retenus			Somme des carrés des facteurs retenus pour la rotation		
	Total	% de la variance	% cumulés	Total	% de la variance	% cumulés	Total	% de la variance	% cumulés
1	3,712	53,034	53,034	3,712	53,034	53,034	3,620	51,717	51,717
2	1,325	18,923	71,957	1,325	18,923	71,957	1,417	20,240	71,957
3	,873	12,468	84,425						

Méthode d'extraction : Analyse en composantes principales.

- The Principal Component Matrix and Factorial Map

