

The Effects of Monetary Policy Shocks on Economic Stability in
Algeria An Analytical Study During the Period (2010–2023)

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Abstract:

This research paper aims to determine how monetary policy shocks affected Algeria's ability to achieve economic stability between 2010 and 2023. To do this, the analytical method was employed to examine the key monetary policy instruments that were used to attain economic stability and, consequently, financial stability.

The study found that monetary policy shocks had an effective role in managing the achievement of internal monetary stability, and this is by maintaining the stability of the general price level and reducing inflation rates, on the one hand, and the other hand, that the Algerian economy is a rentier economy and depends mainly on hydrocarbon revenues and remains hostage to its price shocks at the international level, which affected economic activity and achieved weak growth rates during the years in which hydrocarbon prices collapsed, which led to the ineffectiveness of monetary policy in achieving the desired goals.

Keywords: monetary policy, monetary stability, economic stability, inflation.

Jel Classification Codes: XN1, XN2.

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1. INTRODUCTION

The developments in economic policy, especially in the first decade of the twenty-first century, show the emergence of the importance of monetary policy once again in treating some economic phenomena with economic effects affecting the performance of advanced and developing economies alike. The former suffered from the global banking crisis, a worldwide financial crisis that quickly became a scientific economic situation. The latter suffered from high inflation and unemployment rates simultaneously, which was called stagflation, and structural imbalances that undermined the efficacy of monetary policy.

Despite the existence of some cases in which the objectives of monetary policy and some other economic policies conflict, it is necessary to find a compromise solution that coordinates between them all to achieve a common goal that any country seeks to reach that achieves its goals represented in achieving high and sustainable growth rates and creating job opportunities to reduce the severity of unemployment.

In general, the ultimate objectives of monetary policy revolve around a primary purpose, which is to achieve price stability, which is considered one of the most essential pillars of economic stability. To achieve this, the monetary authority tries, through the central bank's involvement, to accomplish a set of intermediate objectives that enable it to reach its ultimate goals by providing the optimal circumstances in the sectors of money, credit, and exchange using various monetary policy tools. Like all other countries of the world that use their own means to help them achieve their goals, Algeria has embarked on several reforms through monetary and financial reform programs starting in 1990, through the issuance of the Monetary and Credit Law on April 14, 1990, in order to restore the reputation of the Central Bank and grant it independence in managing and monitoring monetary policy, through several amendments to the Monetary and Credit Law through the 2001 amendment and then in 2003, which could lead to the monetary policy losing its credibility, reaching the last amendment through Law 23-09 issued on July 12, 2023, The goal of this law was to tighten the governance of the financial sector, led by the Bank of

Algeria, and improve its transparency, While providing the Monetary and Credit Council additional powers that enable it to accompany the developments experienced in the financial industry, In addition to expanding its responsibilities in the field of certifying investment banks, digital banks and payment service providers, independent brokers, and authorizing the establishment of exchange offices, in addition to enhancing the governance and responsibility the Banking Committee as a monitoring authority. Therefore, the topic of monetary policy is an essential and renewable topic according to the economic situation that the country is going through, each case and its specificities, and the way to address it through the appropriate monetary policy tools.

1.1. The problem of the study:

Through the above, we raise the main problem and try to answer it through several axes of our research:

How can monetary policy shocks achieve financial stability in Algeria, and have they achieved their goals and restored economic stability?

To answer the main problem, we raise the following sub-questions:

- How can monetary policy target inflation?
- What financial tools does the central bank use to control the amount of the money supply?
- How can positive monetary policy shocks affect the balance of inflationary gaps Throughout the study term in Algeria?
- How can monetary policy shocks affect the reduction of inflationary pressures and achieve financial and economic stability in Algeria during the study period?

1.2. Study hypotheses: To answer the main problem and sub-questions, we propose the following hypotheses:

- Algeria's monetary policy performance was impacted by developments in the banking sector.
- Monetary policy employs both direct and indirect strategies to manage the expansion of the money supply.
- Beneficial monetary policy adjustments and high inflation rates in Algeria over the research period are positively connected.

- Monetary policy shocks play a significant and effective contribution to reaching monetary stability and, thus, economic stability in Algeria during the study period.

1.3. Study objectives: This study aims to know the essential and effective function of monetary policy shocks in attaining financial and thus economic stability by controlling inflation rates and maintaining the total price level remains stable through the intervention of the Central Bank with various available monetary policy tools that help it achieve this.

1.4. Importance of the study: The study is important because it analyzes the impact of monetary policy shocks on achieving economic stability in Algeria. It aims to determine the appropriate monetary policy during each stage of the national economy, whether in prosperity or recession and to adopt appropriate monetary policy shocks to achieve monetary and economic stability.

1.5. Study method: To answer the main problem and sub-questions and test the validity of the hypotheses, we used the descriptive analytical method to present the various concepts related to the theoretical aspect and also to clarify the importance of monetary policy shocks through their various tools in addressing inflationary gaps, achieving monetary stability, and then achieving economic stability.

1.6. Study limits: The study examines the influence of monetary policy shocks on Algeria's economic stability from 2010 and 2023.

2. The conceptual framework of monetary policy

2.1. Monetary policy is the concept that:

Monetary policy is described as a set of regulations, means, methods, procedures, and actions taken by the financial authorities to impact the money supply in a way compatible with economic activity to accomplish specified financial goals during a given time (Abdul Muttalib, Economic Policies at the National Economy Level (Macro Analysis), 2003, p. 90)

Monetary policy is sometimes described as managing the quantity of money that circulates, and it is the multiple procedures and methods taken by the financial authorities in the country in managing both cash and credit

and regulating the liquidity necessary for the national economy (Al-Kafrawi, 2006, p. 145)

It is also known as expressing the necessary procedures that enable the monetary authorities to control the money supply or monetary expansion to keep pace with the needs of economic operators, the central bank's objective is to prevent money, interest rates, and loan terms (Qadi, 2005, p. 53)

From the previous definitions, it becomes clear that monetary policy effectively allows central banks to adopt the appropriate tools, procedures, and measures to control the money supply to achieve intermediate goals and reach the country's ultimate goals.

2.2. Objectives of Monetary Policy:

The notion of monetary policy makes it apparent that it attempts to achieve a set of economic objectives, which include the following (Abdul Muttalib, Monetary Policy and the Independence of the Central Bank, 2013, pp. 20-22)

A—Achieving price stability: This is regarded as one of the aims of monetary policy, as each country strives to avoid and battle inflation while also dealing with the danger of depression and recession. The monetary authority's mission is to keep price changes at their lowest level. When economic policy is used to address the problem of price level stability, it implies that the money supply and the price level have a close relationship while other elements remain constant.

B—Achieving monetary and economic stability: This is due to the goal of price stability, as monetary policy must seek to adapt the money supply to the level of economic activity, i.e., control the amount of money in a way that is consistent with Economic activity levels, and avoid monetary and economic crises, which leads to economic stability.

C- Contributing to achieving full employment: It is similar to fiscal policy and is based on boosting the money supply in the case of unemployment and recession to improve effective demand, therefore improving investment and employment in the national economy.

D—Achieving high economic growth: This is the most general goal and is linked to the goal of achieving full employment, as economic growth is the

only one capable of absorbing the increase or surplus in the labor element. The task of monetary policy here is to influence the credit rate through credit expansion so that the take-off stage can be reached, putting the economy on the path of rapid growth.

In addition to the previous goals, we also find (Khalaf, 2021, p. 414):

E- Contributing to the payment balance: By raising the rediscount rate, the central bank can contribute to addressing the balance of payments imbalance. This, in turn, leads commercial banks to boost loan interest rates, reducing credit volume and, as a result, locally demanded products and services. This reduces the intensity of the growth in the country's general level of pricing, which lowers internal prices for products and services, stimulates exports, and lowers.

F- Contributing to the development of banking and financial institutions and the markets in which institutions deal in a manner that serves the development of the national economy, which is seen as one of the most essential objectives of monetary policy.

2.3. Monetary policy tools:

The monetary policy tools used by the central bank to influence the money supply or control the money supply vary. This diversity varies between quantitative tools, called indirect tools, and qualitative tools, directly.

2.3.1. Quantitative tools (indirect)

Three quantitative tools of monetary policy depend on them to influence the interest rate on loans, the volume of liquidity, and credit, which are:

2.3.1.1. Open market operations: This indicates that the central bank intervenes in the money market, selling or acquiring assets, commercial papers, and government bonds to impact credit by pumping or withdrawing cash liquidity as needed and per the current economic conditions (Miftah, 2005, p. 150). If the goal is to increase the money supply, the central bank purchases government securities from commercial banks and pays for these papers with checks drawn on the central bank. These checks are deposited

in commercial banks. Commercial banks can expand the volume of credit, create money from deposits, and increase the money supply.

To limit the money supply, the central bank sells government assets. Buyers are supposed to pay for these securities with checks drawn on commercial banks and in favor of the central bank; the indebtedness of commercial banks to the central bank increases, and their reserves of liquid money decrease; thus, commercial banks' capacity to produce credit and money decreases, and the money supply decreases (Abdul Muttalib, *Monetary Policy and the Independence of the Central Bank*, 2013, p. 25).

2.3.1.2. Change the rediscount rate: It is a rate applied by the central bank to short-term bonds, which commercial banks bring to rediscount when they need liquidity, and thus This is what the central bank uses. tool as a last resort for lending, affecting The amount of credit by raising or lowering the rediscount rate according to the type of monetary policy (Latrash, 2012, pp. 152-154), The rediscount rate is the interest Commercial banks' borrowing rates from the central bank, and when the central bank changes the discount rate, it changes the money supply, So, if the aim is to grow the money supply, the central bank reduces the discount rate, encouraging banks to borrow from it. If the goal is to restrict the money supply, the central bank.

The central bank increases the discount rate, which reduces commercial banks' capacity to borrow from it.

2.3.1.3. Changing the reserve requirement ratio: The idea of changing the reserve requirement ratio as a monetary policy tool crystallizes in the financial authorities' demand for commercial banks to keep a certain amount of cash available at the central bank without compensation, Changing the reserve requirement ratio allows the central bank to control the volume of lending and conduct monetary policy, increasing (or decreasing), which leads to a decrease (or increase) in the volume of sur (Fahmy, 2006, p. 17).

2.3.2. Qualitative (direct) tools: These are also referred to as special or discriminating tools, and they are used for a variety of reasons, the most important of which being that quantitative methods alone cannot alter the money supply. The following are some of the most important qualitative instruments for

monetary policy: (Abdul Muttalib, Monetary Policy and the Independence of the Central Bank, 2013, p. 29).

- Credit ceiling policy to control inflation during a specific period, and its work ends after achieving the purpose;
- Determining different interest rates according to the type of loan;
- Determining specific shares for each type of loan, such as increasing loans directed to the industry at the expense of the loan directed to finance the sale of goods in installments, for example;
- Distinguishing between the loan according to the original provided as a guarantee;
- Determining the maturity date of different loans according to the degree of use of the loan;
- Obtaining the approval of the Central Bank for commercial bank loans whose value exceeds a certain amount;
- Issuing instructions to banks that include the policy they must follow towards different types of credit and practicing the function of enticement and moral influence on those banks in direct credit control.

3. Monetary policy shocks and their tools in achieving monetary stability in Algeria from 2010-2023.

Algeria has adopted the path of monetary and financial reforms, relying on an economic strategy based on regulations and structures set by the Central Bank to maintain the stability of the overall price level, as monetary policy has undergone several changes and transformations according to the circumstances in which they live, and to keep pace with these transformations and keep pace with them in a manner consistent with the economic situation, a set of laws was adopted to organize and control monetary policy.

3.1. Analysis of the development of quantitative tools of monetary policy during the period 2010-2023

3.1.1. Analysis of the development of the mandatory reserve in Algeria during the period 2010-2023:

The mandatory reserve is considered one of the most indirect tools of monetary policy used by the Bank of Algeria during periods when the national economy witnesses a surplus of liquidity, because of its importance

in controlling the liquidity of commercial banks to control inflation levels by absorbing this unemployed liquidity in these banks.

Table No. 01: Development of the mandatory reserve ratio in Algeria for the period 2010-2023 (unit (%))

Years	2010	2011	2012	2013	2014	2015	2016
Reserve requirement ratio %	9	9	11	12	12	12	8
Years	2017	2018	2019	2020	2021	2022	2023
Reserve requirement ratio %	4	8	10	3	2	2	2

Source: (Bank of Algeria, STATISTICS, No. 26/2014-42/2018-60/2022-64/2023, p. 17)

According to the preceding table, the required reserve rate increased to 11% in 2012 after reaching 9% in 2010 and 2011. In order to bolster the function of monetary policy in control, its coefficient was also modified in 2012 in the direction of an increase in mid-May to 12%. It stayed constant at 12% in 2015 to absorb surplus liquidity, then dropped to 8% and 4% in 2016 and 2017 as a way to boost banks' lending capacity and boost the economy.

To sustain the activity of transactions at the money market level, the Bank of Algeria increased the volume of liquidity in the first quarter of 2017 and then raised the obligatory reserve rate until it reached 10% in 2018 and 2019. In light of the extraordinary circumstances facing the world economy due to the aftermath of the Corona pandemic—Covid 2019—which resulted in a severe liquidity crisis impacting the majority of economic sectors, the Bank of Algeria lowered the reserve rate.

The mandatory reserve was increased to 3% by the end of 2020 as an exceptional measure to raise the ability of banks to fulfill their commitments and continue economic activity, to maintain it at a rate of 2% during the years 2021 and 2022. In light of economic and financial developments and their expectations in the medium term, the Bank of Algeria decided in April 2023 to increase the mandatory reserve by 1% to reach 3% and enhance the recovery of part of the liquidity, as these measures initially targeted the source of excess liquidity, which could be inflationary while keeping the banking system in a position that enables it to finance the national economy without competition and without incurring additional costs.

3.1.2. Analysis of the growth of the rediscount rate in Algeria from 2010 to 2023:

The rediscount process is a form of refinancing that the bank resorts to undermine the capacity of commercial banks to provide loans, whether by increase or decrease. To analyze the development of rediscount rates in Algeria during the study period, we use the following table:

Table No. 02: Algeria's rediscount rate from 2010 to 2023 (unit (%))

Years	2010	2011	2012	2013	2014	2015	2016
Discount rate %	4	4	4	4	4	4	3.5
Years	2017	2018	2019	2020	2021	2022	2023
Discount rate %	3.75	3.75	3.75	3.75	3.75	3.75	3.75

Source: (Bank of Algeria, STATISTICS, No. 26/2014-42/2018-60/2022-64/2023, p. 17)

We note from the table above that the development of discount rates is divided into two stages during the study period. The first stage is the stability stage from 2010-2016, where we did not observe the stability of the rediscount rate at a rate of 4%, which is explained by the commercial banks stopping rediscounting by the Central Bank, i.e. the banks stopping refinancing by the Central Bank, meaning the emergence of a surplus in liquidity, which led to growth of the money supply, which explains the government's use of positive monetary policy shocks as a result of the recovery of oil prices in global markets. The second stage is the stage of decline with stability, where during 2016, the rediscount rate decreased by 0.5% to stabilize at 3.5% due to the sound financial situation and relative stability, as it reduced its refinancing with the Central Bank and thus the lack of liquidity in the bank, to return with a slight increase starting from 2017 until 2023 by 0.25% to reach 3.75%. This decrease compared to the first period is due to the severe shortage in bank liquidity. Ultimately, the mechanism for using the rediscount rate remains weak despite Shocks experienced by monetary policy in Algeria.

3.2. Analysis of the development of open market operations in Algeria for the period 2010-2023

It means the final operations of selling or buying public bonds, and the role of the Bank of Algeria in these operations is to sell or buy securities such as treasury bills to influence the liquidity of the banking system and to

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analyze the development of open market operations in Algeria; we collected statistical data from the three statistical bulletins of the Bank of Algeria shown in the following table:

**Table No. 03 represents the development of open market operations in
Algeria from 2010-2023.**

open market operations	2010	2011	2012	2013	2014	2015	2016
7-day liquidity recovery rate	-	-	-	-	-	-	-
3 months liquidity recovery rate	-	-	-	-	-	-	-
6 months liquidity recovery rate	-	-	-	-	-	-	-
12 months liquidity recovery rate	-	-	-	-	-	-	-
open market operations	2017	2018	2019	2020	2021	2022	2023
7-day liquidity recovery rate	3.5	3.5	3.5	-	-	-	3
3 months liquidity recovery rate	3.5	-	-	3.5	-	-	-
6 months liquidity recovery rate	3	-	-	3.35	-	-	-
12 months liquidity recovery rate	3.5	-	-	-	-	-	-

Source: (Bank of Algeria, STATISTICS, No. 26/2014-42/2018-60/2022-64/2023, p. 17)

From the table above, it is clear that the Bank of Algeria did not rely on the open market mechanism to finance banks. Still, due to the bank liquidity decline in 2016, the Bank of Algeria returned to activating this mechanism after the money market had been inactive until then, meaning that this year witnessed a radical change in the management of monetary policy. We note that the rate of open market operations for the year 2017 set by the Bank of Algeria was fixed at a rate of 3.5% for each of 7 days, 3 months, and 6 months, and for each of the years 2018 and 2019, to decrease in 2020 to 3% for 7 days and 3.35% for 6 months due to the global health crisis (Corona-Covid 19 pandemic). As for the year 2021-2022, the Bank of Algeria did not resort to the tool due to the significant growth in banking liquidity and the end of the relief measures that were implemented after the health crisis, so the bank returned to using this tool in 2023, where its rate reached 3% as a result of inflationary pressures witnessed during that period.

4. Monetary policy shocks and their effects were the highest indicators of economic stability in Algeria from 2010 to 2023.

As a result of economic reform programs, the monetary authorities in Algeria have established a set of rules and foundations by taking many measures at the financial level through the directives of the Bank of Algeria

for monetary policy with various appropriate methods and tools to achieve financial stability and then achieve economic stability, by achieving high and sustainable growth rates, raising the level of employment and reducing unemployment rates, striving to achieve and maintain the price level, and reducing inflation rates. We can analyze the most important measures taken to achieve this as follows:

4.1. Analysis of inflation rates as an indicator of economic stability for the period (2010-2023):

Table No. 04 represents the development of inflation rates in Algeria from 2010-2023 (unit).

Years	2010	2011	2012	2013	2014	2015	2016
Discount rate %	3.91	4.52	8.89	3.26	2.92	4.78	6.4
Years	2017	2018	2019	2020	2021	2022	2023
Discount rate %	5.59	4.27	1.95	2.42	7.23	9.27	9.39

Source: (Bank of Algeria, STATISTICS, No. 26/2014-42/2018-60/2022-64/2023, p. 17)

We note from the table above that inflation rates began to rise in 2010, when they recorded a rate of 3.91%, rising to 4.52% in 2011. This is due to several factors, the most important of which are the strong money supply growth and the significant wage increase. The rate of inflation increased in 2012, according to the National Consumer Price Index, with an average rise of 8.89%, after its significant decline in 2013 and 2014 due to the decrease in local food prices, as well as most of the average annual international prices of imported fresh food products, which decreased. Inflation returned to rise in 2015, reaching a yearly average of 4.78% due to the rise in local commodity prices, which was not linked to monetary expansion that year. In 2016, it reached 6.4% due to weak monitoring and regulation in many goods and services markets, some of which are characterized by dominant positions, in addition to the acceleration of the growth of the money supply, which recorded a rate of 14.4% in 2015 compared to 8.4% in 2014 (Ala & Marzouq Habali, 2022, p. 12). It declined between 2017 and 2019 to reach 1.95% due to the rise in oil prices. In 2020, the inflation rate witnessed a slight recovery with an annual average of 2.42%, but starting from 2021 and 2022, inflation rates witnessed a substantial increase within one year, as the rate moved from 7.23% in 2021 to 9.27% in 2022, which is the highest

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rate in the last five years. It also witnessed another increase during the year 2023, reaching 9.39%. According to an assessment conducted by the Bank of Algeria, the rise in inflation in 2022 is mainly due to imported inflation, and this is explained by the great exposure of local prices to the development of global prices that witnessed sharp increases, especially the rise in food product prices. In addition, the second factor that led to the rise in inflation is the money supply (M2). Accordingly, the monetary policy adopted in 2022 made it possible to maintain sufficient and comfortable levels of liquidity, which allows for strengthening the viability of the banking system and the Algerian economy in light of the ongoing uncertainty resulting from global fluctuations in oil prices, and the risk of global inflation stagnation. However, the level of bank financing in the actual field is still far from the expected target due to the weak response of banking mediation (Bank of Algeria, Economic and Monetary Development of Algeria, 2023, p. 50)

4.2. Analysis of unemployment rates as an indicator of economic stability for the period (2023-2010):

Table No. 05 shows the development of unemployment rates in Algeria from 2010 to 2023 (unit).

Years	2010	2011	2012	2013	2014	2015	2016
Unemployment rate %	10	10	11	9.8	10.6	11.2	10.5
Years	2017	2018	2019	2020	2021	2022	2023
Unemployment rate %	11.7	11.7	11.4	*14	*13.7	*14	*12.3

Source: (National Statistics Office, n.d.)
(World Bank, n.d.)

From the table above, we note that the unemployment rate from 2010 to 2014 stabilized at 10% due to the government launching third programs that were no less important than the economic recovery programs and the complementary programs to support growth. As for monetary policy during this period, it did not effectively reduce unemployment rates due to its contractionary directives, as it aimed to absorb excess liquidity through its indirect tools. As for the period extending from 2015 to 2019, the unemployment rate rose from 11.2% to 11.4% compared to other years. This increase is attributed to the austerity measures taken by the

government, represented by temporarily freezing employment, except for some sensitive sectors, due to the decline in fuel prices (Slah, BELKELLA, & Hariri, 2021, p. 579). However, in 2020, The unemployment rate grew owing to unfavorable external shocks indicated by the drop in oil prices in global markets as a result of the worldwide health crisis represented by the Corona crisis - COVID-19, as the jobless rate reached 14%, which led to a decrease in oil collection and a decrease in public treasury revenues, and thus a decrease in local investments and a reduction in public spending, which led to a halt in opening new jobs, and the restriction of employment in specific sectors, then to decline again slightly in 2021 due to the stability of the economic situation and the rise in oil prices and thus the provision of new jobs, then to rise slightly during 2022 where it reached 14%, then to decline after that in 2023 to reach 12.30% due to the monetary policy adopted by the government in financing the economy through the process of reforming the legal framework regulating the tasks of the Bank of Algeria, and the operations of various actors in the banking sector by issuing the new monetary and banking law in June 2023, as this law works to expand the scope of the use of monetary policy tools and adapt them to the specificities of banking operations related in particular to Islamic finance Green inclination.

4.3. Analysis of economic growth rates as an indicator of financial stability for the period (2010-2023):

Table No. 06 represents the development of economic growth rates in Algeria from 2010-2023 (unit).

Years	2010	2011	2012	2013	2014	2015	2016
Economic growth rate %	3.6	2.9	3.3	2.8	3.3	3.8	3.3
Years	2017	2018	2019	2020	2021	2022	2023
Economic growth rate %	2.6	1.4	2.4	-5.1	3.4	3.2	4.1

Source: (Bank of Algeria, Economic and Monetary Development, Annual Report 2022 and 2023)

We note from the table above that growth rates during the years 2010 to 2014 witnessed fluctuations, as they reached 3.3% in 2012 and declined in 2013 to reach 2.8%, so that economic activity recorded fair growth compared to that recorded in 2011 and 2015 economic activity continued to

expand at the same pace as in 2014, and this is due to the increase in domestic demand and the good performance of the marketed services, construction, and agriculture sectors, as the growth rate reached about 3.8% in 2015 at the same pace as in 2014, which was estimated at 3.3%. In 2016 (Slah, BELKELLA, & Hariri, 2021, p. 578), economic activity remained relatively strong, expressed by the significant growth of the hydrocarbons sector despite the substantial decline in the growth of total domestic demand in terms of value, as the gross domestic product reached 17,406.8 billion dinars in terms of volume, while the gross domestic product was 3.3%, a slight decline compared to 2015. As for 2017, it witnessed a significant slowdown in national economic activity measured by the growth rate of the gross domestic product due to the substantial decline in the pace of expansion of the hydrocarbons sector, as the gross domestic product was estimated at 18,906.6 billion Algerian dinars, so the economic growth rate in this year reached 2.6% compared to 3.3% in 2016. The period from 2017 to 2019 witnessed a decline in growth rates to reach its lowest value of (-5.1%), as oil prices collapsed globally in 2019, followed by Algeria being exposed to financial pressures in 2020 due to the coronavirus pandemic, which caused a global decline and a drop in prices. After a substantial recession in which the economic growth rate experienced a rate of 5.1% in 2020 due to the pandemic, it rose by 3.4% in 2021. It declined to 3.2% in 2022, reflecting a dynamic economic activity whose drivers differ from last year. If the recovery after the pandemic in 2021 began mainly due to the hydrocarbon sector, then the recovery in 2022 resulted primarily from the growth of sectors outside hydrocarbons. Accordingly, the gross domestic product outside the hydrocarbon sector recorded an increase of 4.3% in 2022 compared to 2.3% in 2021, while the growth of the gross domestic product of the hydrocarbon sector decreased by 0.6% in 2022 compared to 3.4% in 2021. In terms of value, the gross domestic product amounted to 27,688.9 billion dinars. During the year 2023, economic activity continues to grow, supported by a significant recovery in the production of the strategic industry sector and the remarkable performance of the agriculture, construction, and services sectors, at a rate of 4.1% in 2023, an increase compared to 3.6% recorded in 2022. These rates show the recovery of the

Algerian economy after several periods of severe health crises, recording a record growth rate between 2015 and 2023. Compared to 2022, all sectors contributed to this dynamic with significant growth and incredibly strategic industries during 2023, although many sectors recorded substantial growth rates. It is worth noting that some sectors have experienced a decline compared to their performance in 2022 (Bank of Algeria, Economic and Monetary Development, Annual Report 2022 and 2023).

4.4. Analysis of the development concerning the balance of payments balance as a sign of economic stability for the period (2023-2010):

Achieving balance in the balance of payments is one of the goals of economic policy in general and monetary policy in particular. For this reason, monetary policy in Algeria has been placed in front of a set of challenges from which several risks have emerged, the most important of which is inflation. , declining growth rates, disturbance in the balance of payments, etc., Algeria's reliance on exports and hydrocarbons to a large extent made the balance of payments situation hostage to hydrocarbon price shocks in global markets, which made monetary policy unable to control the balance of payments because there are external factors that affected it. To analyze the development of the balance of payments in Algeria during the study period, we use the following table:

Table No.07: Analysis of the development of Balance of Payments as an indication of economic stability for the period (2023-2010) Unit: billion dollars

Years	2010	2011	2012	2013	2014	2015	2016
balance of payments	15.32	20.142	12.057	0.133	-5.881	-27.57	-26.3
Years	2017	2018	2019	2020	2021	2022	2023
balance of payments	-23.3	-15.82	-16.93	16.37	-1.48	18.47	6.35

Source: (Bank of Algeria, Economic and Monetary Development of Algeria, 2015, p. 90)
(Bank of Algeria, Economic and Monetary Development of Algeria, 2019, p. 164)
(Bank of Algeria, Economic and Monetary Development of Algeria, 2023, p. 124)

From the table, we note that the Algerian economy has witnessed a development in the performance of the macroeconomy, as the balance of payments recorded an improvement in its balance during the year 2010,

where it achieved a surplus of \$15.32 billion, and continued to achieve gains in the year 2011, where it achieved \$20.142 billion. The balance of payments began to record a decline during the period (2013-2014), where it recorded \$0.133 and \$0.13 billion. The surplus recorded during the year 2013 was weak compared to the years 2011 and 2012. This translates, in particular, the apparent erosion of savings on investment that characterized the last three years from this aspect to continue its decline, where it recorded a deficit in 2014, estimated at \$5.881 billion, as a result of the decline in oil prices to \$100.77 in the same year (Slah, BELKELLA, & Hariri, 2021, p. 582). Between 2017 and 2017, there was a significant deficit in the balance of payments, reaching its lowest level at \$27.54 billion in 2015. This is due to the decline in fuel prices in global markets, which led to a decline in Algeria's exports and an increase in imports. This deficit decreased slightly in 2018 to reach \$15.82 billion due to the rise in oil prices, then rose in 2019 to reach \$16.93 billion due to the spread of the Corona pandemic, the decline in fuel prices, and the decline in the value of financial and commercial transactions, which led to a recession in the economies of countries and a decline in Algeria's exports outside of hydrocarbons in the international market, which resulted in a deficit in the trade balance and the current account of the balance of payments, to finance this deficit from foreign exchange reserves, so that the deficit narrowed in 2021 to reach \$1.48 billion to witness After this period, there was a noticeable surplus in 2022, reaching \$18.47 billion, reaching its best levels due to the rise in fuel prices, the diversification of non-fuel exports, and an improvement in financial and commercial transactions, which resulted in a noticeable economic recovery through an increase in wages and the creation of an unemployment benefit. The balance of payments will then decline in 2023, and despite this decline, it will still record its second consecutive surplus after 8 years of continuous deficit (2014-2013). However, this surplus shrank sharply, from \$18.46 billion in 2022 to \$6.34 billion in 2023. This development is explained by the deterioration of the current and capital transactions account balance during the period in the context of a relative improvement in the balance of the financial transactions account (Bank of Algeria, Economic and Monetary Development of Algeria, 2023).

5. Conclusion

In this study, we attempted to ascertain how monetary policy shocks affected Algeria's efforts to achieve economic stability between 2010 and 2023. To determine this effect, we first examined how monetary policy shocks affected the attainment of financial stability using the three most significant economic policy instruments in Algeria—the mandatory reserve, the rediscount rate, and open market operations. We then attempted to forecast how these instruments would affect the attainment of economic stability by examining several indicators. The results, which were represented by the balance of payments, economic growth rates, inflation, and unemployment rates, revealed the following:

- Among the most important monetary policy tools that achieved monetary stability during the study period was the mandatory reserve mechanism, which worked to control inflation levels by absorbing unused liquidity in commercial banks.

The Bank of Algeria did not rely much on the open market mechanism to finance banks and used it only during periods that witnessed inflationary pressures, especially in 2023.

Monetary policy shocks effectively controlled the achievement of internal monetary stability during the study period by maintaining the stability of the general price level and reducing inflation rates.

Following the coronavirus pandemic and the economic recession it left behind, the Bank of Algeria adopted many supervisory and precautionary measures related to monetary policy by issuing a new monetary and banking law in June 2023. This law works to expand the scope of use of monetary policy tools and adapt them to the specificities of banking operations related, in particular, to Islamic finance and green financing.

- Given that the Algerian economy is rentier and depends mainly on hydrocarbon revenues, it remains hostage to price shocks at the international level. This has made the balance of payments significantly affected by price fluctuations in most years, recording a negative balance due to the collapse of its prices, which has affected economic activity and achieved weak growth rates during the years in which hydrocarbon prices

collapsed. This has led to the ineffectiveness of monetary policy in achieving the desired goals.

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