How Can Algeria Manage to Conduct an Efficient Anti-Inflation Policy?

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Abstract:
Inflation is considered a monetary phenomenon that carries a high degree of risk due to the negative effects it has on economic activity and the social welfare of countries. The present study aims to deal with the important aspects of inflation by suggesting a policy that can help local policy-makers to curb inflation efficiently. The study concluded that inflation in Algeria is highly affected by the repercussions of the countries' policies, which in turn requires the local policy-makers to adopt the right policies.

Keywords: Inflation, Monetary Policy, International Economy, Algeria, Crises Management.

I-Introduction:

Since the early 1980s, unprecedented and serious waves of inflation have invaded most developed countries, in which the inflation rate has experienced historical fluctuations. As a result of the leading positions of those countries, most developing countries, including Algeria, have been influenced, urging an intervention to rein in imported inflation. After a decade (1994–2004) of stable inflation, general prices started to fluctuate dramatically due to the great rise in energy costs, pushing inflation to increase dramatically, reaching an alarming rate of 9% just after the mortgage bubble in September 2007. The harmful effects of the aggressive fluctuations in prices, including the fall in export competitiveness, have eroded the purchasing power and depreciated the exchange rates of the main currencies, impacting both businesses' and consumers' future decisions due to the incertitude that has invaded the different markets. These events halted the development of new investment projects, elevating inflation control to the top of the priority list and the most important goal for politicians and monetary policymakers alike.

The present study attempts to investigate the monetary policies aimed at targeting inflation in the countries that are considered the major economic partners of Algeria in order to pinpoint their outlines and elicit the channels used to influence domestic prices, so that they can help Algerian authorities choose the appropriate policies to stabilize the prices and, therefore, stabilize the economy. In this context, this study attempts to answer the following questions: How can Algeria design and conduct the appropriate policy that can curb inflation, benefiting from the experiences of its main partners?

The research consists of two hypotheses, which are:

- Inflation is a complex phenomenon in which several factors overlap, requiring a comprehensive understanding of all its aspects to design an efficient policy to curb it.
- Because Algeria is heavily reliant on certain countries for financial and commercial transactions, the policies of those countries may have an impact on Algeria's inflation rate, necessitating a well-designed and implemented policy to deal with foreign changes.

1. Overview of the theoretical literature on inflation.

Like other economic phenomena, the high rate of inflation harms broad sectors and, therefore, the performance of the whole economy. Thus, the concern about stabilizing prices has become an economic and political priority. In the following, we will try to address the important aspects of inflation by addressing its costs and the benefits of curbing it, as well as the anti-inflation policies generally adopted.

1.1. Theories of Inflation: There is a consensus that inflation is a monetary phenomenon that results from a high level of money supply. In this regard, there are five prominent theories that deal with inflation, and then several interesting reasons for the occurrence of inflation are given.

1.1.1. Demand-push inflation theory: Demand-push inflation is an instance where aggregate demand exceeds aggregate supply for a long time. The increase in demand could either be an increase in the ability to buy (effective demand) or an increase in the willingness to do so. Consequently, prices increase in variable proportions, causing both the purchase power and the real wage to decrease. However, the theory of demand-push inflation remains insufficient as long as it does not give an explanation of how it is possible that an excess of demand could occur.

1. 1.2. Cost-push inflation theory: According to the theory of cost-push inflation, prices rise as a result of the increase in the cost of production. In fact, the costs considered to be responsible for inflation are essentially wages and energy prices, which have risen sharply in the last three decades. Nevertheless, the theory of cost-push inflation presents a number of difficulties; it explains the evolution of the final prices, but it does not include any explanation of the upward evolution of the production costs, which have a dynamic role.(Ben Ali & Ben Mim, 2011, pp. 120-121)

1.1.3. Profit inflation theory: This theory implies that inflation can also appear when the economy suffers from the monopoly of some companies and, thus, the general prices, so long as these companies are of a size that qualifies them to determine the prices themselves far away from the competition. Such companies usually prefer to increase production by raising prices rather than taking serious steps to raise productivity and then diminish costs. (Totonchi, 2011, pp. 459-460)

1.1.4. Quantity theory of money theory: Proposed in the eighteenth century and developed by classical economists in the twentieth century, the quantity theory of money gives an interesting explanation of the causes of inflation based on the hypothesis that the rate of inflation is essentially influenced by the rate of growth in the money supply. It should be noted that the quantity theory of money is valid to explain the changes in prices in the short-term, and so the assumption that the money supply influences prices in the long-term will be useless.(Mishkin, 2001, p. 538)

1.1.5. Structural inflation theory: According to this theory, the rise in prices is caused by the nature of the structure of the economic system; therefore, the price increase is inherent in the economic system and does not depend on particular elements.

1.1.6. Rational expectation theory: Where the nature of the agents' expectations prompts them to raise the prices; if the agents predict that prices will rise, they will try to accelerate their purchase paces, saving less and consuming more, and thus the prices will rise.(Totonchi, 2011, pp. 459-460)

1.2. The cost of inflation and benefits of retrogressing it:

1.2.1. The cost of inflation: According to economic literature, the biggest victim of a high inflation rate is investments, because their decisions are based on the expectations of real interest rates. To complete the feasibility study of their projects, businesses take into account the expected inflation rate movement when coming up with profitable projects. Furthermore, sharp price fluctuations cause currency depreciation, increasing the degree of risk and uncertainty in the future economy and, as a result, increasing the return required on investments due to cost increases, primarily nominal interest rates. Hence, it ends up worsening the asymmetric information problem. (Crowley, 2010, p. 13)

1.2.2. The benefits of retrogression inflation: In contrast to a high inflation rate, a low inflation rate serves to keep the price stable, which in turn helps to improve the purchasing power of the currency, and then the exchange rate remains stable. Many studies have pointed out that the decline in inflation will increase economic efficiency and growth as a result of the improvement in the investment climate, which will then persuade businesses to take their decisions with high certainty and accuracy. The gains from a low inflation rate come from certainty that it will only appear after a period of time, and during that period,

the costs will exacerbate, including a rise in unemployment and a drop in real income.(Pehnelt, 2017, p. 9)

2. Anti-inflation policies

To avoid the undesirable effects (the costs) of inflation, the authorities, wherever, usually attempt to curb inflation, without creating prolonged and serious lapses from full employment, and without endangering economic growth. To curb inflation, various policies could be taken by the authorities, falling under three major policies:

2.1. Fiscal policy:

According to Keynesian economic theory, fiscal policy is an effective instrument to confront inflation; governments can control inflation by cutting down on their expenditures and taxation. Government expenditures have, by now, become a substantial part of the total flow of money. However, government expenditures are not very amenable to elastic changes required by inflation, as there are many constraints, which hinder introducing a significant reduction.

The second fiscal measure, which can help to rein in inflation, is the increase of existing taxes or the imposition of new ones. However, the overall increase in all taxes may not be advisable, as it discourages businesses from investing and that will make it difficult for governments to boost the economy. In addition, the government can help to withdraw money in circulation by engaging in borrowing operations via issuing bonds and bills to companies and the general public.(Perotti, 2007, p. 3)Accordingly, to ensure the effectiveness of tax increases as an anti-inflationary tool; they should be accompanied by a reduction in government expenditures.

2.2. Monetary Policy:

Monetary policy refers to the measures that influence the amount of money in circulation. To reduce inflation, monetary authorities represented by the central banks can intervene with three tools. Prior to World War I, central banks relied primarily on the discount rate, but since then, open market operations have been primarily used to reduce the money supply and thus curb inflation. In addition, changing the reserve requirements that commercial banks must keep as a ratio of deposits has also been introduced to monetary policy to boost the struggles of the central banks in curbing inflation. The latter tool is considered an effective instrument, as it will directly lead to a contraction of money supply (monetary aggregates) and, thus, a substantial reduction in prices. (Abdennour, 1999, p. 4)It should be noted that the achievement of price stability via the use of those tools is uncertain, since there are many other factors that interfere in determining the prices, so the central banks should pursue a different strategy for directing monetary policy toward the achievement of the desirable outcome. The strategy focused on choosing a set of variables that should be measurable, controllable by the central bank, and have a predictable effect on the final goal. Specifically, these variables are called intermediate and operating targets.

To ensure the effectiveness of those targets, the central banks must avoid incompatibility between them, which can lead to a failure to achieve the final goal (inflation).(Mishkin, 2001, p. 538)

2.3. Price control and rationing:

Price control consists of setting a maximum price for products or limiting their growth rates in an authoritarian way to prevent prices from exceeding a certain level. Price control was

always a subject of criticism by Keynesians, who believed that it was a poor anti-inflation tool, because it could only treat the consequences of supply-demand disequilibrium, not its causes. Concerning rationing, it is a tool aimed at diverting consumption from products for some reasons. If the item in shortage happens to be a necessity, the authorities intervene to provide a fair supply to all members.(Coyne & Coyne, 2015, p. 14)

In conclusion, the adoption of a single policy is not guaranteed to control inflation; it should be accompanied by other policies. So, unison and compatibility between different authorities are strongly needed to manage to control inflation and then stabilize the whole economy.

3. An overview of the inflation-targeting policies in major countries

To investigate how to design and conduct an efficient inflation-curbing policy, we should address foreign monetary policies in view of the excessive dependence of the Algerian economy on the world to satisfy its domestic needs. Thereafter, we will shed light on policies applied to control inflation in countries that are considered the major partners in eliciting the canals that affect domestic prices in those countries.

3.1. The USA's policies

The United States is largely considered the country that has experienced the most waves of price fluctuations. In view of the position of the US economy, many of these fluctuations have affected other countries. However, since the 1980s, the inflation waves have become more complex as various factors have had an impact on the financial and economic environment. In this regard, the Federal Reserve (Fed) started in 1979 to intervene by introducing a fundamental adjustment to its policy and by adapting new financial instruments such as the negotiable order of withdrawal (NOW) to measure money aggregate M2, as well as adjusting the interest rates and imposing controls to restrict lending, such as requiring depositors to put a proportion of reserves for a week. (Mishkin, 2001, pp. 494-495)

During the two decades of the 1980s and 1990s, the Fed followed a contractionary policy, which was characterized by a rough fall in the growth rates of monetary aggregates (M1, M2, and M3) and a significant decline in both long and short-term interest rates under the Taylor rate recommendation to help the US economy get out of a short recession. The measures taken resulted in a sharp drop in the inflation rate to 1.5% by the end of 2002. In 2001, the symptoms of the recovery started to appear, and the employment rate continued to rise. Driven by rising fears of resurgence in the recession, the Fed kept the same pace, so it fixed the federal funds rate at an extremely low level (1% by mid-2003). The low interest rate was above the Taylor rate and, hence, launched a spark of high demand for houses (housing bubble), which in turn pushed the prices to go up (3.39% in 2005), forcing the Fed to raise the federal funds rate slowly to 5.25% in mid-2006, and accelerate the money supply growth to help the US economy recover again after a slowdown (started in 2004). As a result, the inflation rate started to decrease and ended up at 2.8% by 2007.

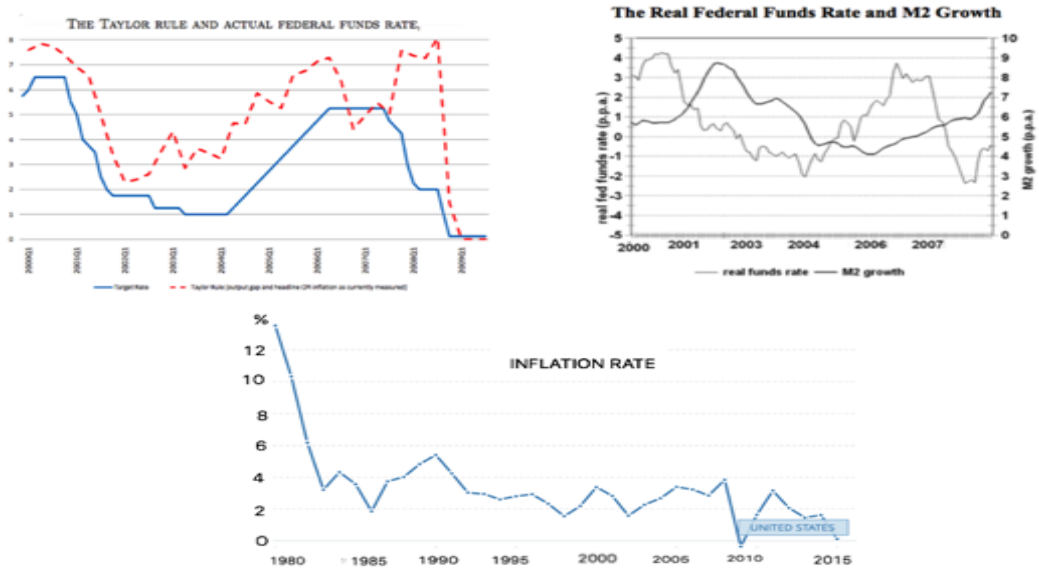
The Fed was roughly blamed for the global financial crisis's burst since it kept interest rates at a low level for a long time after the end of the recession in 2001, while it adopted permissive lending standards, which in turn led to the fueling of the housing bubble.

With the emergence of the financial crisis in late 2007, the Fed responded rapidly by providing a liquidity facility package to help the financial institutions compensate for their

capital losses and lose excess liquidity, which in turn could rescue the US economy from recession. The Fed adopted an expansionary policy termed "Quantitative easing", characterized by an acceleration in the money supply M2 by 11% just after the crisis onset, followed by a stable growth in the range of 8.13% in the short period from August 2008 until April 2009. (Lothian, 2009, pp. 4-6).

The growth of the money supply ensued principally from the direct involvement of the Fed in purchasing large amounts of targeted risky securities. As a result, the Fed's assets soared from approximately 0.91 trillion dollars on 3 September 2008 to approximately 2.2 trillion dollars on 12 November 2008. Furthermore, the Fed reduced the discount rate and federal funds rate from 5.25% in September 2007 to an unprecedented and historical range of 0-0.25, where they remained until December 2015. However, fear of falling into bankruptcy pushed the banks to prefer utilizing the liquidity injected to increase their excess reserves rather than extending lending. In view of the unstable state of the global and US economies, investment witnessed a severe downturn that pushed the general demand to decrease. Consequently, inflation declined to a historical rate of (-3%) by 2009. (Robinson & El Nasser, 2013, pp. 32-34)From late 2009, the large liquidity injected managed to withdraw the US economy from an unprecedented decline (-2.7%) in 2009 to 2.6% in 2015. As a result, the inflation rate rose progressively, reaching 3.1% in 2011 and then, gradually, decreasing to just above zero in 2015.

Figure (1): The Taylor rule, Federal Funds rate, M2, and inflation rate



Source: (Ahrend, 2008, pp. 13-28)

The large fluctuations in the performance of the US economy during the first decade of the twenty-first century spread widespread fears of a deep recession, and then increased uncertainty about the economy's soundness, leading to a continued depreciation of the dollar and, as a result, a deterioration in the expected return on dollar deposits.The depreciation of the dollar impacted other countries. As the theory of asset demand suggests, foreign countries should only consider the expected return on their deposits in the USA, which is affected by the changes in the interest rate and expected appreciation of the dollar, as follows:

$$RET^D = i^D + \frac{E^e_{t+1} - E_t}{E_t}$$

As a result, the countries, including Algeria, which employed their foreign reserves in financial assets dominated by dollars, were exposed to significant losses, leading to the crisis.

3.2. The Euro-zone countries' policies

In response to the inflationary pressures that have been affecting the Euro-zone in many stages, the Euro-zone countries have responded with a package of measures to rein in inflation and stabilize the whole economy, including mainly expanding the independence of their central banks and instructing them to put inflation on top of their priorities. In the following, we will address the stages of the 1980s and the global financial crisis of 2008, which are the periods when the inflation rate increased to high levels.

3.2.1. The policies of the 1980s: After a decade of steady prices at a low level, a steep increase in inflation rate invaded Europe, resulting in damage to the economies of the region and other regions as well. To deal with that surge, varied policies were approved, but among them we have chosen two countries as major experience, including the UK and Germany. In Germany, the Bundesbank, or German central bank, responded to rising prices in 1975 by enacting a policy aimed at increasing monetary supply M1.In its strategy to control inflation, and unlike the other central banks, the Bundesbank allowed the money supply to keep on growing above the targeted rate for a period ranging from two to three years, after which it would be contrasted by reducing it.

In fact, that unusual strategy was to maintain the exchange rate and stabilize the financial system, as well as to calm down the fears in the financial market. As a result of new financial and economic developments, such as the trend to liberalize the economic and financial systems and the widespread use of financial derivatives, the Bundesbank began to modernize its policy in 1988, and it began to rely on M3 as a money measure rather than M1.The new policy was very successful because inflation fell and then remained stable throughout the 1980s. However, that stability did not last long, as Germany had been experiencing a dramatic increase in inflation rate, climbing from 3% in 1990 to 5% in 1992 after the collapse of the Berlin Wall and the reunification of two parts of Germany, which then worsened the asymmetric information problem and darkened the future situation of the German economy for investors. The new situation put the Bundesbank in front of immense challenges, so to control inflation and preserve the exchange rate, the interest rate rose twice.

With the advent of 14 September 1992, most European currencies were exposed to speculation campaigns that cost them up to a quarter of their values. The campaign was fueled by the high expected return on deposits denominated in German marks, which resulted in the European currency crisis in September 1992.Therefore, the central banks intervened largely to save the currency by injecting great amounts of their foreign reserves, or raising interest rates, or both of them. Considering the positive correlation between interest rates and exchange rates, the Bundesbank intervened to keep its currency from depreciating more, so it raised the interest rate excessively, in addition to the injection of huge amounts of foreign reserves. Those struggles succeeded as the mark appreciated, which resulted in considerable gains on mark deposits.

With respect to the UK, just after its withdrawal from the European Monetary System (EMS) due to the speculation attack on the sterling pound in September 1992, the British government decided on October 8, 1992, to shift towards the adoption of the control of inflation as the final goal of the Bank of England. To fulfill that, the British government decided to extend the independence and power of the Bank of England, which was obliged to provide a quarterly report concerning the progress in curbing inflation.

The new procedures allowed the Bank of England to have greater powers in managing the interest rate, so that the inflation rate could be controlled with some ease. With the recovery of the British economy and the fall in the unemployment rate, the signals of success of the Bank of England's policies began to appear by the end of 1994, when prices started to stabilize.(Mishkin, 2000, p. 2)Meanwhile, the pound started to recover and it recorded an appreciation after a short period of sharp fluctuation that led to an astronomical sell-off of the pound and then massive losses on pound deposits due to the increase in the return on mark deposits and the rapid depreciation of the dollar. In fact, that improvement ensued from the intervention on the part of the bank of England by raising its lending rate from 10% to 15%. The relationship between the expected return on pound and mark deposits can be written in the form of the following formula:

$$RET^D = i^D - i^F + \frac{E^e_{t+1} - E_t}{E_t}$$

Where, RET^D represents the expected return on the pounds sterling, and i^F is the expected return on the mark.

3.2.2. The policies adopted during the global financial crisis of 2008: According to the treaty of European union in 1993, it set inflation stability as the main objective of the monetary policy of the Eurosystem, in which transparency and credibility were considered as the pillars of that policy.

In the decade before the Global Financial Crisis in 2008, the Euro-zone was experiencing a moderate increase in inflation rate that reached 2.4% in 2007, which was within the range targeted (between 2.1 and 2.3%). That slight increase was referred to:

- High Prices of energy, raw materials, and food.
- Increase in money supply following a large injection of liquidity to stimulate the economies in order to compete with Asian economies.
- Increasing threats of terrorism after September's attacks and the high rate of unemployment led to an increase in the budget deficit.
- High prices in financial markets stimulated governments to issue more securities.

Despite the intervention of the European central bank to dampen inflation by raising interest rates from 3.4 to 4% during the second semester of 2007, (La Banque de France, 2007, p. 27), the inflation rate continued to climb to 4% by July 2008, affected by the increase in money supply to confront the economic recession and lessen pessimism sentiments among investors.

Subsequently, in early July 2008, the ECB continued its struggle to curb inflation, so it raised interest rates again to 4.25%, but the violent fluctuations in financial markets hardened its mission, forcing it to keep the same interest rate in an environment characterized by uncertainty and fear. With the collapse of raw materials prices from September 2008, inflation fell to 1.6% by the end of the year, persuading the ECB to adjust its expectations. The interest rate was reduced twice, reaching 2.5%, in conjunction with the

drop in the money aggregates of M1 and M2 to 3.3 and 8.2% respectively. As a result, the expected return on euro deposits declined sharply, allowing the euro to depreciate until late February 2009.

During 2009, there was a significant slowdown in inflation, where it increased smoothly by only 0.4%. The improvements can be attributed to the decline in the prices of raw materials and domestic demand due to the high unemployment rate and the local trend towards curtailing their expenditures, while the economies started to recover over the year 2009.

In line with the low inflation rate, the ECB lowered interest rates to 1% to encourage companies and individuals to borrow and raise spending. In conclusion, the money supply was growing slowly and consistently with real income, so the money supply M2 rose by only 1.6% in 2009. (La Banque de France, 2008, pp. 20-24) Finally, figure 2 depicts the relationship between money supply and inflation rate in the Eurozone from 2000 to 2012:

Figure (2): Inflation rate, M1, and M2 in Euro-Zone during 2000-2012

Source: (The European Central Bank, 2012, pp. 17,27)

Unlike the USA, the Euro-zone was considered a safe region as it managed to recover more quickly, and so the relative economic and financial stability that featured the region contributed effectively to mounting demand for the euro, allowing it to record an impressive appreciation from March 2009.

3.3. China' policies

Unlike many countries, China has experienced a drop in inflation during the period 2004–2007, despite the rise in raw material prices. That drop can be referred to the shrinking of the budget deficit and the strong performance of the Chinese economy, which was stimulated by the increased demand for its exports from Europe and the USA, particularly, helping to absorb the effects of the increase in prices. Immediately after the rise in the consumer price index (CPI) in 2004, by 3.9%, the Chinese authorities responded in 2004 with a significant package of measures destined to rein in inflation and bring it under control. Therefore, the people's bank of China (PBoc) raised both interest rates and required reserves, causing the money supply to slow, so the M2 increased by 14.7% in 2004 against 20% in 2003. In unison with the central bank, the domestic government took many steps to reduce the budget deficit through the rationalization of expenditures and the introduction of tax reforms, which sent the inflation rate declining during 2005.

However, as a result of the decrease in exports and domestic demand due to the crisis spreading in western countries in the year 2007, the Chinese economy began to slow down. That condition forced the PBoC to increase liquidity and reduce interest rates to low levels of 0.7% to stimulate domestic demand to compensate for the drop in external demand.

Furthermore, the government increased its spending, focusing on infrastructure to boost total domestic demand, resulting in an increase in the inflation rate to 4.8%.(People's Bank Of China, 2007, p. 21)

On the same line, the PBoc introduced some adjustments to its policy by altering to adopt, somewhat, a permissive policy; so it intervened in open market by large purchasing operations to increase the liquidity available in financial system, which can help lend more, meanwhile the central bank reduced the discount rate and interest rate on companies loans. As a result of those procedures, the money aggregate M2 started, from September, to go up, reaching 17.82% by the end of the year, while the raw materials prices were going down, so in the end, the inflation rate peaked up to 5.9%. During the year 2009, the PBoc continued injecting liquidity in financial system, at a time it reduced discount rate to encourage banks to expand lending, causing the money supply to grow, reached 27.7%; however, the fall in the prices of raw materials and the deterioration of Chinese economy led to send inflation down to a negative rate -0.7%.

The PBoc introduced some adjustments to its policy by altering to adopt a somewhat permissive policy, so it intervened in the open market with large purchasing operations to increase the liquidity available in the financial system, which could help lend more. Meanwhile, the central bank reduced the discount rate and interest rate on companies' loans. As a result of those procedures, the money aggregate M2 started, from September, to go up, reaching 17.82% by the end of the year, while the raw materials prices were going down, so in the end, the inflation rate peaked up to 5.9%. (People's Bank Of China, 2008, p. 30) During the year 2009, the PBoc continued injecting liquidity into the financial system. At the time, it reduced the discount rate to encourage banks to expand lending, causing the money supply to grow by 27.7%. However, the fall in the prices of raw materials and the deterioration of the Chinese economy led to the sending of inflation down to a negative rate of 0.7%.

Like in other advanced countries, the decline in raw material prices had an important contribution to a further fall in inflation in China, in view of its absolute dependence on imports to meet its need for energy. However, in contrast to advanced countries that tried to avoid intervention in financial markets, the PBoC intervened largely to reform the banking system and financial markets in order to orient the money supply in the interests of investors and the Chinese economy.(People's Bank Of China, 2009, p. 30)

4. Inflation trends in Algeria as a result of policies changes in major partner countries

As a result of excessive dependence on the oil sector, Algeria has undergone serious troubles in periods of oil price fluctuation, urging interventions, particularly on the part of monetary authorities, to contain the repercussions. In the 1980s, the oil price witnessed violent volatility resulting from a sharp disequilibrium in the oil markets due to the stagnation of industrialized economies and the different measures that were taken on the part of developed countries to rationalize the consumption of energy.

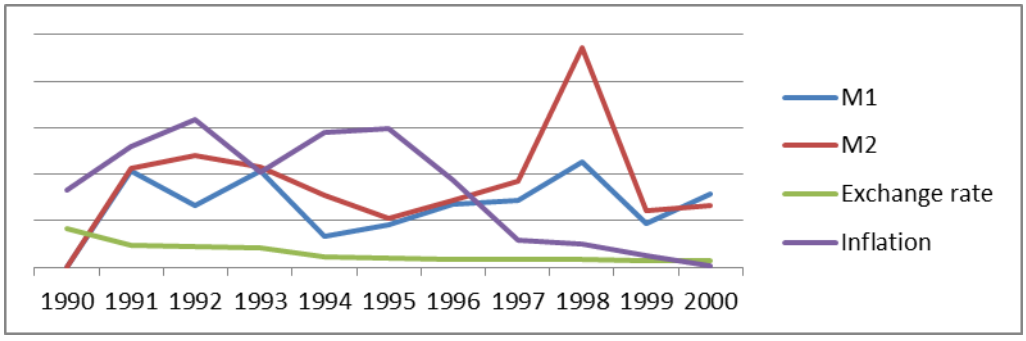
To deal with the repercussions of the price slump that started in the mid-1980s, the Algerian authorities adopted several measures; some of them were socially tough. The government adopted a package of structural reforms targeted at leaving socialism and adopting a market economy as an attempt to dampen the price increase and to improve the employment rate, as well as to keep the exchange rate under control. To keep pace with the reforms,

interesting changes were introduced in monetary policy by setting price stabilization as a principal and final goal.

Starting in 1990, a new law (loi 90-10 relative à la monnaie et credit) was introduced to rehabilitate the central bank's ability to perform its role in designing and conducting monetary policy. As well, it granted the central bank independence to choose the intermediate targets and the convenient tool to intervene. After adopting an expansionary monetary policy characterized by issuing a large block of currency to cover the budget deficit and finance the reforms of public companies, the inflation rate skyrocketed to 29% in 1994, forcing the government to resort to the international monetary fund (IMF) and the World Bank. In the meantime, it adopted a contractionary policy in 1994. Generally, the nature of the financial systems of developing countries, including Algeria, had a significant responsibility for exposing them to inflation due to the lack of large financial markets that could finance their needs without causing the inflation rate to exceed some limits, which in turn pushed them to issue new currency, or force their banks to acquire government securities issued (financial repression).

In 1994, a new program dubbed "the economic stabilization program" was introduced, covering the period from April 1994 to May 1995, aimed at achieving certain goals, including reducing the money supply growth rate (M2) from 21.5% in 1993 to 14% by 1994. Thereafter, another structural adjustment program was adopted, covering the period from May 1995 to May 1998, to stipulate certain goals by 1998, including 5% as an economic growth and 10.3% as an inflation rate, by applying wide reforms under the supervision of the IMF and World Bank, including (1) improving monetary policy management, (2) recovering foreign equilibriums, and promoting the investment climate, (3) reducing the budget deficit to 2.4% of GDP, (4) decreasing price support and social transfers, (5) liberalization of foreign commerce, and (6) privatization of indebted public companies and cancelling debt of recoverable companies.(Benziane & Chekebkeb, 2016, pp. 10-20)As a result, the bank of Algeria (central bank) managed to slow down the money supply growth (M2) to 47.2% in 1998 and 12.1, 13.2% in 1999 and 2000 respectively, while the inflation rate rose below the planned rate to 5 and 0.34% in 1998 and 2000 respectively.

Figure (3): Inflation rate, Exchange Rate, M1, M2 in Algeria during 1994-1999

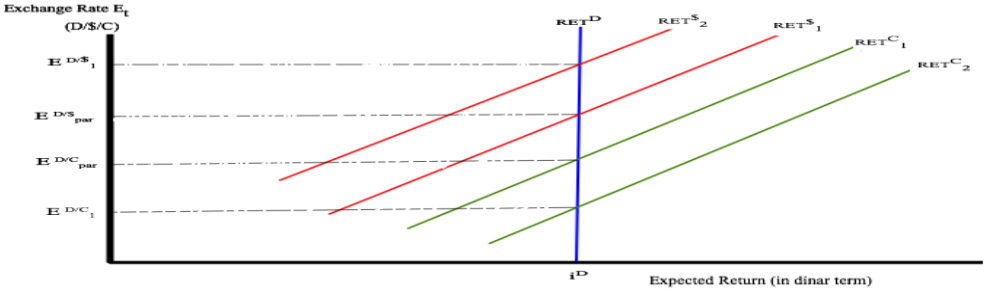


Source: Author's preparation basing on IMF & AMF reports.

Despite the success reached in controlling inflation during the second half of the 1990s, the Algerian economy has been vulnerable to foreign shocks that could cause another inflationary wave. That was due to the failure of the 1990s privatization process and financial incentives to build a diversified economy, in view of the security turbulence and bureaucracy that prevailed throughout the 1990s.

From 2000 until 2012, inflation took a reverse trend, when its rate jumped from 4.2% to about 8.9%. Actually, many factors interacted to increase the inflation rate, particularly the steep rise in the world non-fuel commodity prices due to the increase in energy costs. Moreover, other factors were blamed for fuelling the price increases, including US inflation and dollar weakness. Given that the foreign exchange reserves are denominated in US dollars, the high US inflation rate and weak dollar that characterized the first decade of the current century resulted in a sequence of erosions in the purchasing power of the exchange reserves and made imported goods and services more expensive, thus increasing domestic production costs. Therefore, the domestic currency (the Algerian dinar) is exposed to more pressures.(Crowley, 2010, pp. 13-14) To clarify more, figure 4 shows the consequences of the changes in the exchange rate for the Algerian dinar. The large depreciation of the US dollar and the appreciation of the other major currencies led to a decrease in the expected return on US dollar deposits ($RET^{\$}$), and an increase in the expected return on other currency deposits (RET^{C}). To stabilize domestic prices, more interventions were required to diminish that gap and restore the previous exchange rate ($E^{D/C}_{par}$ and $E^{D/\$}_{par}$), but that would exhaust the foreign exchange reserves, which started to record a slowdown in 2008, followed by a negative growth in 2013.(Crowley, 2010, pp. 13-14)

Figure (4): Foreign Exchange Market for Algerian Dinar during 2000-2010



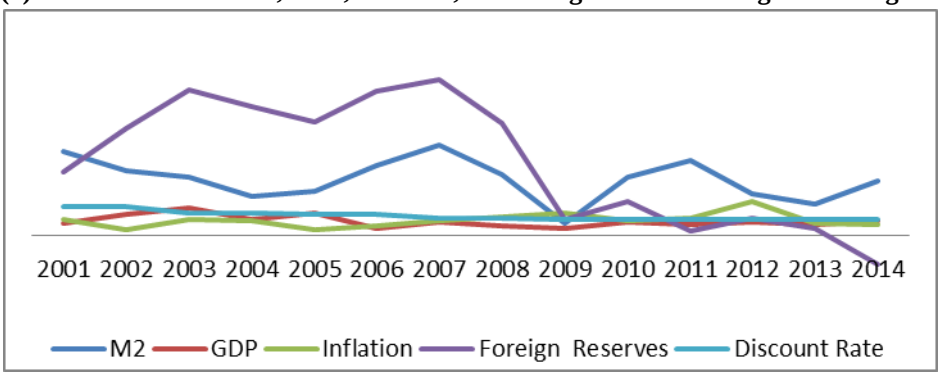
Source: Author's preparation.

In addition to the external factors, fiscal policy was a factor responsible for increasing inflationary pressures, because of its role in growing money. Accordingly, thanks to the unprecedented increase in oil prices since 2001, the Algerian government has adopted huge programs aimed at boosting economic development. To back up the government's efforts, the bank of Algeria, in contrast to the previous stage, conducted an expansionary policy by decreasing the discount rate and raising the money supply growth rate (M2) from 22.3% in 2001 to a historical record (24.2%) just before the financial crisis onset in 2007. That evolution in money supply exceeded the absorptive capacity of the domestic economy, which in consequence, sent the inflation rate to go up 3.67%. To dampen inflation, the Bank of Algeria decreased the money supply in 2008, but the advent of the global financial crisis forced the central bank to re-increase the money supply.(La Banque d'Algérie, 2008, pp. 146-148)

The bank of Algeria, in its decision to increase the money supply, depended on the expectations of a continued high oil price. However, once the price began to sour in early 2009, the economy deteriorated causing inflation to skyrocket (8.9%) in 2012, exceeding the rate targeted.(La Banque d'Algerie, 2015, pp. 99-102) (Accordingly, since 2010, the Bank of Algeria has announced 4 percent as an inflation target to achieve currency stability. However, the achievement of this goal remains difficult due to the vulnerability of the

economic environment to oil price fluctuations, which make fluctuations in currency and then local prices a daily phenomenon that affect the business investment environment negatively. (Hamrit & Manaa, 2009)

Figure (5): The evolution of M2, GDP, inflation, and foreign reserves in Algeria during 2001-2014



Source: Author's preparation basing on La Banque d'Algérie reports.

Therefore, a huge task is waiting for the high authorities to develop the financial markets and improve the efficiency of the banking sector in using the local resources in order to develop the whole economy and keep economic indicators under control, as well as to get rid of the excessive dependence on the oil sector and its volatile prices.

Conclusion

The present study has tried to address the monetary policies aimed at targeting inflation in countries which are considered the major partners of Algeria, including the USA, the Euro-zone, and China, during different periods, in order to determine how those policies impact on the inflation rate in Algeria, which in turn can help to improve the efficiency of monetary policy conducted in Algeria.

The study revealed that the external factors, which originated from those countries, affected the domestic prices significantly via many canals, including imports of final and intermediate goods, and fluctuations in the expected return on their currency deposits. Those fluctuations ensued principally from the adjustments in the money supply and interest rates that the monetary policies in foreign countries used to control the inflation rate and boost economic activity. However, domestic factors also contributed to the higher inflation rate since the local authorities had been involved in injecting a large bloc of liquidity to back up the development plans. The liquidity injected increased the money supply to levels that exceeded the absorptive capacity of the economy and, therefore, provoked inflation waves. Accordingly, the decision to increase money supply was based principally on high expectations of a continued increase in oil prices, but once demand fell, the prices went down, allowing external factors to have a major impact on domestic prices. In view of the high vulnerability of the Algerian economy to the repercussions of policies adopted in foreign countries, it is expected that the inflation rate will remain higher and volatile in the coming years due to the fluctuations in energy prices and the exchange rate of dollars, which have turned out to be very sensitive and volatile during various crises, including the health crisis.

Therefore, to minimize the impact of foreign policies (external factors) and thus increase the effectiveness of the domestic monetary policy aimed at combating inflation, the local authorities, represented by the central bank of Algeria, should strive to reduce the excessive dependence of the oil sector and induce non-oil sectors to increase their contribution to

GDP and general exports. To do so, the Bank of Algeria should improve and modernize the financial system to perform its role efficiently in channeling the available financial resources into investment projects with better economic feasibility, in which it can prevent financing non-productive projects that may raise imports and then allow transmitting the impacts of international policies into the domestic economy. To enhance the control over the money supply to prevent it from causing an increase in prices, the bank of Algeria should strengthen the coordination with the government, which is responsible for implementing the fiscal policy.

Since the domestic economy is closely dependent on the foreign world (imports and exports), it is highly vulnerable to external shocks, so the Bank of Algeria should improve its knowledge of what it is applied in foreign countries, mainly in the major countries that can influence domestic prices. In other words, the strong correlation between the Algerian economy and the major economies of the world forces the Bank of Algeria to take international events and policies into consideration when designing and conducting a monetary policy that can maintain financial and economic stability and lessen the repercussions of external shocks.

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