

## **The impact of quantitative easing mechanism on macroeconomic indicators in Algeria**

أثر استخدام آلية التيسير الكمي على مؤشرات الاقتصاد الكلي في الجزائر

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### **Abstract**

### **ملخص**

After the collapse of oil prices in the global market in 2014, and its serious challenges for an oil-producing dependent country such as Algeria, which were mainly represented in the scarcity of national revenues and the terrible decline in the level of liquidity at banks. Make the government resort to unconventional solutions through the quantitative easing (QE), it's most prominent manifestations is the printing of the central bank for more banknotes to overcome the projections of the crisis.

Thus, this study has sought to study the reflection of this mechanism on some macro economic indicators. The study revealed that this mechanism had positive effects on some macroeconomic indicators, most notably the coverage of treasury financing needs without resorting to borrowing, and Provide liquidity at the banks. Nevertheless, it carries many negative effects on other indicators, notably the rise in domestic debt and taxes, rate of inflation and interest rate, Unemployment rates, and the Devaluation of the local currency.

**Keywords:** quantitative easing mechanism (QE), macroeconomic, macroeconomic indicators, Algeria.

أفرزت أزمة انهيار أسعار النفط في السوق العالمي سنة 2014 تحديات صعبة وخطيرة على بلد نفطي ريعي مثل الجزائر، تمثلت أساسا في شح المداخيل الوطنية والتراجع الرهيب لمستويات السيولة النقدية على مستوى البنوك، ما جعل الحكومة تلجأ إلى حلول غير تقليدية من خلال آلية التيسير الكمي (QE)، ومن أبرز مظاهرها طباعة البنك المركزي لمزيد من الأوراق النقدية لتجاوز إسقاطات الأزمة. سعت هذه الورقة البحثية لدراسة انعكاس هذه الآلية على بعض مؤشرات الاقتصاد الكلي في الجزائر. وقد كشفت أنه على الرغم من أن هذا الإجراء كان له آثار إيجابية على بعض المؤشرات والمتمثلة أساسا في تغطية احتياجات تمويل الخزنة دون اللجوء إلى الاقتراض، وتوفير السيولة في البنوك. إلا أن الأجراء حمل في طياته العديد من الآثار السلبية على مؤشرا أخرى ولاسيما ارتفاع الدين المحلي، الضرائب، معدل التضخم والفائدة، معدلات البطالة، وتخفيض قيمة العملة المحلية وغيرها.

**الكلمات المفتاحية:** آلية التيسير الكمي، الاقتصاد الكلي، مؤشرات الاقتصاد الكلي، الجزائر

## 1. INTRODUCTION

In normal circumstances, monetary policy targets the price of money, i.e., raising or lowering the interest rate. This change moves through the interest rate channel to economic activity, stimulating aggregate demand and affecting unemployment and growth. Monetary policy also may target the increase in the mass of money traded in order to stimulate economic activity of investment and consumption, which is achieved by quantitative easing. This mechanism is considered as unconventional tool for monetary policy because it was applied unprecedentedly in the world monetary history. In an exceptional and urgent way to contain the effects of the financial crisis, and applied in Algeria, specifically in the Monetary and Credit Law in 2017, to contain the crisis of collapse of oil prices financed by the state treasury. The results of this mechanism varied between economies and countries, depending on the economic base and the financial background of each country and the circumstances of their implementation. Some of them had a positive impact, some of which had catastrophic economic and social consequences.

In Algeria, According to the adjustments in the Money and Loan Law, The Treasury can utilize the financial services of the Central Bank more broadly. In addition to the traditional method of loans and advances, The Treasury is exceptionally allowed to borrow from the Central Bank of Algeria within five years through treasury bonds, In order to participate mainly in covering the funding requests of the Treasury, public debt financing and the financing of the National Investment Fund. Thus, the non-traditional financing of the Government's program is to rely on financing through the printing of money without coverage (Issue 15, 2017). QE mechanism sparked widespread controversy and speculation among many experts, economists and even the Algerian public. Especially since the QE is new term for them, as well as the economically powerful Western countries have not yet determined the results of this mechanism.

### 1.1. Problem statement:

Hereby, our attention in this paper focused on answering the following main question: "what is the impact or the implications of applying quantitative easing mechanism on some macroeconomic indicators?"

Because we focused on some indicators not all, a number of sub-questions emerged from this question:

1. What do we mean by QE mechanism? In addition, what are the reasons for resorting to it?
2. What are the implications of the quantitative easing mechanism on inflations, Liquidity in banks, exchange rate, interest rate, and The unemployment?
3. Whether all the implications were negative or divergent?

### **1.2. Research significance:**

The study focused on the approach that assumes that quantitative easing is an effective instrument of monetary policy used in the face of crises, including the crisis of the collapse of oil prices and the low income of the treasury. Therefore, the study seeks to evaluate this method by analyzing its various implications on the indicators of the macroeconomic, and provide a set of recommendations for the success of this mechanism in conclusion.

### **1.3 Research objectives:**

The study aims to achieve the following objectives:

- Addressing the most important topics of the hour in the national and global economy, namely the mechanism of quantitative easing.
- Define the quantitative easing mechanism (QE), reasons for its adoption by the Algerian government and its procedures.
- Analyze the effect of the application of QE mechanism on macroeconomic indicators.
- Provide a set of recommendations that will help achieve the objectives of this mechanism.

### **1.4. Research methodology:**

Due to the specificity, novelty and importance of the subject, a descriptive analytical approach was adopted to highlight the quantitative easing mechanisms applied in Algeria, their specificities and their impact on macroeconomic indicators. This will be done by reference to the various official reports published in official newspapers and reports of the Central Bank and the World Bank. Articles of economic analysts, government statements in official channels and others.

## **2. Literature review:**

### **2.1. The concept of QE mechanism:**

Usually, money is printed only insofar as it corresponds to gold reserves (this is the content), or by the strength of the economy and the corresponding actual production of goods and services in the country, or foreign exchange reserves (F. DruMetz and c. Pfister , 2015).

The most common definition of a quantitative easing mechanism: is a tool for unconventional monetary policy that requires raising the size of the central bank's budget, by raising the monetary base (Joyce. M, Miles. D, Scott. A and Vayanos. D, 2012).

In an orderly market economy, the QE is able to create added value by fully developing business as a temporary monetary policy measure aimed at re-broadcasting monetary policy and ultimately supporting credit channels and bank liquidity in the cash market. According to (Mebtoul, 2018), non-traditional measures fall into three categories:

First: quantitative easing measures (QE) are those measures by which the Central Bank provides an unlimited amount of money to commercial banks. The saturation of demand for money has spent on surplus balances, that is, it gives more bank loans to families and businesses again.

Second, the guidance of the rate outlook is that the central bank will engage in the future course of rates that contribute to the reduction of interest rates in the medium and long term, and thus bring them closer to the price of the central bank. These take the form of explicit commitments to maintain a very low level or zero rate for a specific period.

Thirdly, credit easing tends to go beyond the blocking of the credit channel because of the "door to liquidity" phenomenon or tensions on some key sectors of the financial markets.

### **2.2. Economic Approaches Explained QE mechanism:**

Many approaches seek to clarify the QE mechanism, as the following:

Neoxylion approach, according to (Ito Takatoshi and Mishkin Frederic S, 2006) Increasing the size of the monetary base through money printing can indirectly affect the economy by influencing the expectations of economic agents. Although the economy is facing a "liquidity trap" (zero interest rates). Emerging from deflation is done by central bank's intervention in the exchange market by reducing the national currency within a specified period, in order to guide the medium and long-term interest rate and Inflation, and thus restore confidence and stimulate markets and aggregate demand.

Money Approach, according to (Goodfriend, 2000) the injection of liquidity by increasing the size of the monetary base affects the economy despite the state of the liquidity trap. The increase in the size of the monetary base allows for increased consumption through the effect of wealth, which leads individuals to make new expenditures and thereby stimulate economic activity, in condition that there is no complete replacement of money and non-cash assets.

Richard Koo's Approach (Koo, 2008), this approach confirms that the financial crisis witnessed by the various economies is a balancing crisis in the institutions that represent the nerve of the economy, where the value of debt is much greater than the value of assets. In this case, economic traders are not looking for maximizing profits, but rather how to reduce their indebtedness. This does not encourage them to borrow from Banks Despite low interest rates and despite the large potential of commercial banks to grant loans. In the absence of a request by borrowers, it is impossible to obtain the borrowing process. Therefore, this approach has reinforced the economic status of QE.

Keynesian theory, According to Keynes, the state can stimulate demand when it is not enough through cash injection, by anticipating the revival of aggregate demand in investment and consumption. The use of factors of production by Keynes is due to the expectations of entrepreneurs. Thus, the investment cannot "start" if business expectations are not positive. The state also seeks to implement wealth distribution methods that allow economic agents who have an average tendency for higher consumption (ie "disadvantaged" social groups) to spend and thus operate the economic apparatus; lower interest rates to stimulate consumption, credit and investment; to double the portfolio of investment income. Thus, the State intervenes in a time of crisis and is therefore part of the short-term measures that apply the flexibility factors available for production, equipment and quality of work ((Al Ashi. w and Sediki. A, 2018).

### **2.3. QE in Algeria:**

According to (Mekarri, 2017), Keynesian theory cannot be applied to the Algerian economy. Keynesian political "strategies" are based on the importance of the role of the state as an organizer rather than as a managing state of the economy. As well as the nature of its exports, which rely heavily on the hydrocarbon sector.

In the context of Article 45 in the Loan and Monetary Law of 2003 and amended in accordance with Article 17/10 of October 11, 2017 (Issue 15,

2017) "on a contractual basis and within the maximum limit of 10% in the past fiscal year. The Algerian bank may grant the current overdraft to the Treasury, and its total duration may not exceed 240 days, whether consecutive or not, in a calendar year". The authorized overdraft leads to collect administrative fees, its price and terms of which shall be determined in agreement with the Minister of Finance. Thus, in accordance with this article, the Treasury is exceptionally allowed to borrow from the Central Bank of Algeria over a period of five years through bonds issued by the Treasury to participate mainly in covering treasury applications and debt financing. We conclude that QE of the government's program is to rely on finance by printing securities without coverage after the amendment of the Loan and Cash Law. The program has shown that unconventional funding is the basis for the central bank to lend directly to the Treasury to finance the state budget deficit, Financing internal public debt and providing financial resources to the National Investment Fund.

#### **2.4. Reasons for adopting QE in Algeria:**

1. The collapse of oil prices and consequently the decline in public treasury revenues in return for their high expenses.
2. The erosion of foreign exchange and the depletion of the stock of the government's revenue collection fund since the collapse of oil prices in mid-2014, as well as the deterioration of financial indicators.
3. Long delays in the implementation of vital projects, with very significant budget overruns, as well as higher expenditure costs due to weak executive capacity of government agencies that do not have sufficient technical capacity to oversee the quality of these studies.
4. Fear of the risk of deflation, the collapse of stocks or bonds, the bankruptcy of major credit institutions, the inability of economic institutions to complete their projects and pay wages, especially those linked to the state and the emergence of a crisis of confidence in the financial sector (Mekarri, 2017).
5. Avoiding devaluation of the national currency as the only corrective tool for the financial crisis (Al Ashi. w and Sediki. A, 2018).

As the Algerian government, in the words of its first Minister Ahmed Ouyahia considered the QE as the best solution for two reasons. The first is that the funds borrowed from the Bank of Algeria are directed towards financing public investment and not to finance consumption and therefore will not be a source of inflation. The second is that the treasury faces only a

public debt that does not exceed 20 percent of GDP Therefore have a reasonable margin of indebtedness (APS, 2017).

### 3. The impact of QE on some macroeconomic indicators in Algeria:

We focused on the following macroeconomic indicators:

#### 3.1.The inflation (Producer Price Index PPI):

The index measures the price of goods at the wholesale level. Therefore, while the CPI tracks the cost paid for goods by consumers, the PPI shows how much the producers are getting for the goods. There are three types of goods measured by the PPI: crude, intermediate, and finished goods. Crude goods are raw materials used in production of something else, intermediate goods are components of a larger product, and finished goods are what is actually sold to a reseller. The finished goods data are the most closely watched since they are the best gauge of what consumers will actually have to pay.

**Table 1:** Developments of the monetary mass and inflation during the period 2017 – forecasts 2021

	2014	2015	2016	2017	2018	2019	2020	2021
The monetary mass (billion dollars)				570	1850	580	-	-
Inflation (%) according to Algerian government	3.26	4.20	5.8	6.4	5.6	5.5	4.9	3.9
Inflation (%) according to FIM	-	-	-	-	7.4	7.6	6.7	6.5

**Source:**(ACB, 2018), and (<https://ar.tradingeconomics.com>, 2019)

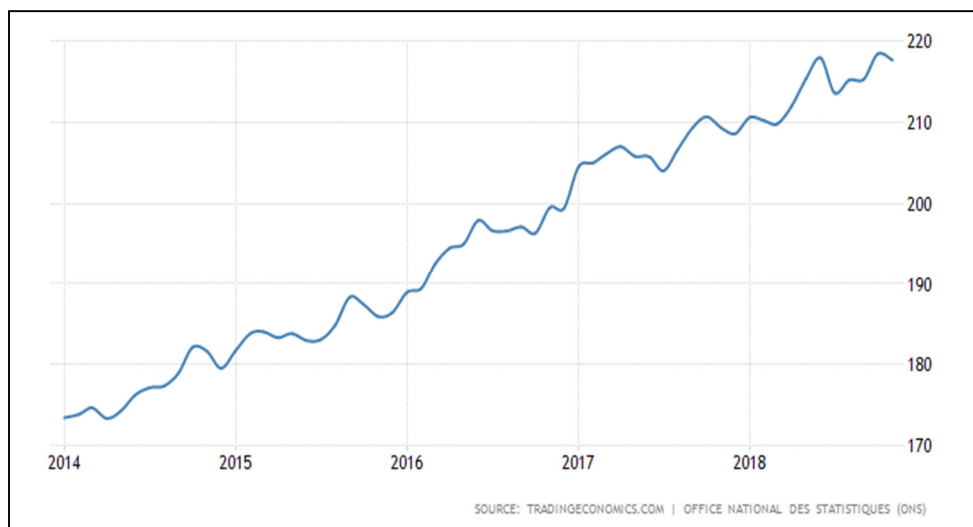
The Algerian Government has set a 5-year term for the use of the QE. This is due because of its awareness about inflation risks resulting from the printing of new money to fill the budget deficit. The printing of money contribute to the provision of a large amount of fake money that leads to a large demand for goods, leading to inflated commodity prices. The value of the dinar collapses and becomes poisoned, and a large quantity of money provides only a small amount of goods. This is known as the low purchasing power for individuals. As for enterprises, they are unable to bear the burden of wages. Unemployment rates rise, and the economic crisis turns into a social crisis and serious tensions open to all possibilities.

In addition, both local and foreign investors who will lend to the Algerian government in the future through the purchase of government bonds will

pay attention to the issue of inflation and high prices and will insist that interest rates are high on these bonds because they realize that the purchasing power of the dinar will gradually decrease (Mekarri, 2017). The Bank of Algeria reports a 6% rise in the money supply. The following table shows developments for money printed since the announcement of the adoption of unconventional funding.

Inflation can be seen in the rise in the prices of commodities, especially consumer goods, and the weak purchasing power of individuals. In addition, the follower notes the projections in the tension and protest movements launched by most sectors such as national education, health and others to demand a review of wages.

**Fig.1.** the development of prices during the period of 2014- 2018



**Source:**(<https://ar.tradingeconomics.com>, 2019)

We observe the clear fluctuation in the prices of consumer goods, but generally it is moving towards raising, reflecting the continued rise in inflation rates.

### 3.2. Exchange rate:

The Algerian dinar is considered as one of the weakest currencies in Africa, we can follow the development of Algerian Dinar against Dollar in the following table:



**Table 3:**The development ofDZ against USD in the official market and the parallel market for 2014 - 2019 expectations

	2014	2015	2016	2017	2018	2019	Expectation of 2020
DA against USD	80.56	100.46	109.47	110.96	118.89	118.56	120
Parallel Market	120	150	155	170	170	170	170

**Source:**(ANDI, 2019).

The exchange rate of Algerian dinar is high against historical values against the most important world currencies, especially the euro. The dinar is expected to continue to decline against the dollar, with stable imports and stagnant exports. Leading to a rise in the cost of imports on which Algeria relies on it to finance the market for commodities.

Since 2014, the Algerian dinar has lost about 60% of its value, hitting poor people and increasing their troubles (Larash, 2018).

### 3.3.Unemployment rate:

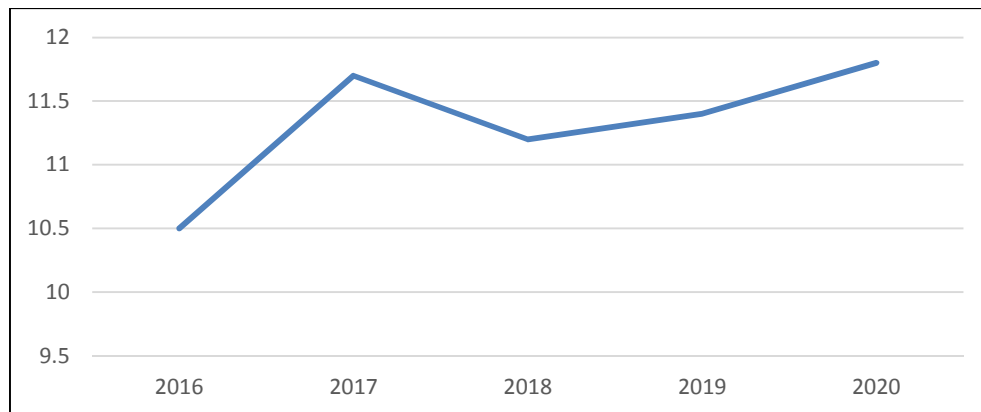
The transition of the crisis from individuals to institutions after the increase in inflation makes these institutions unable to bear the burden of wages and rising unemployment rates, turning the economic crisis into a social crisis(Mekarri, 2017), the following table provide us the unemployment rate after 2017 the period which Algeria adopted the QE policy:

**Table4:** Unemploymentrates for the period 2016- expectation of 2019

Years	2016	2017	2018	2019	2020
%Unemployment	10.5	11.7	11.2	11.4	11.8

**Source :**(www.eco-algeria.com, 2018)

**Fig.2.**the unemployment rate in Algeria 2016- 2020



**Source:**Prepared by the researcher, Depending on the data of(<https://ar.tradingeconomics.com>, 2019)

### 3.4.Internal Loan:

When the economy is in recession, the budget is in deficit. The government uses to borrow money from individuals, companies or other government institutions by issuing securities that have cash value (s) or Sindhi loans, and after a period of time the government is obliged to repay these loans Benefit. The following table shows the development of state internal loans:

**Table 5:** State's loans at the Central Bank and the development of loans directed to public finance

Years	2016	2017	2018	2019	2020
State loans at the Central Bank (billion DA)	2682	2200	2107	-	-
Loans directed to finance the public economy (billion USD)	22.73	39.76	48.50	28	31

**Source:**(ACB, 2018).

The table shows the increase in the internal debt of the government at the Central Bank and the increase in the volume of loans directed to finance public spending, this has been since Algeria adopted the quantitative easing mechanism, which was primarily geared towards this purpose.

### 3.5 Interest rate:

We can follow the interest rate development on the following table

**Table 6:** Liquidity in Algerian banks for the period 2016-2019

	2014	2015	2016	2017	2018	2019	2020
Liquidity	2731	1833	821	820	1461.1	-	-
Interest rate	4	4	4	3.5	3.75	3.75	4

**Source:** Algerian central Bank report, February 2018, p: 12, and web site of <https://ar.tradingeconomics.com>

We note that liquidity rose in the wake of 2017 and the government confirmed by its representatives that this was due to the application of QE mechanism.

**Fig.3.** interest rate in Algeria 2014- 2018



**Source:**(<https://ar.tradingeconomics.com>, 2019)

### 3.6 GDP, Balance of Payments, Exchange reserves and other:

GDP is expected to exceed \$ 200 billion in 2019 to \$ 200.2 billion, according to the Burton Woods report on the Middle East, North Africa, Afghanistan and Pakistan economic outlook published today in Dubai. Adding that there is an increased public spending will encourage

growth this year. This is by focusing on cash financing of QE. The International Monetary Fund (IMF) expects Algeria to achieve its fiscal balance if the price of a barrel reaches \$ 98.6 in 2019. As for its external balance, it needs a barrel price of \$ 78.9 in 2019. The other indicators were summarized in the following table:

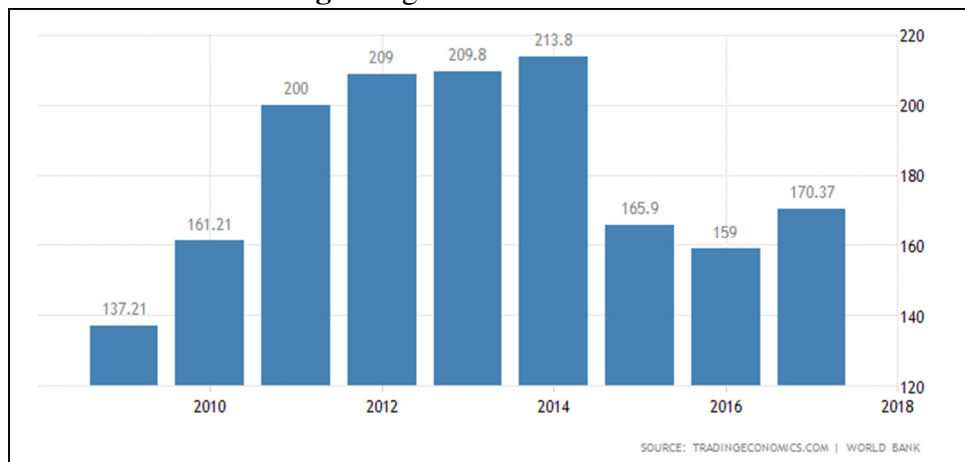
**Table 7:** GDP and other Algerian macroeconomic indicators for the period 2016- expectation of 2021 (billion dollars)

	2014	2015	2016	2017	2018	2019	2020	2021
GDP	213.8	165.9	159	170.3	167.6	200.2	47.8	33.8
Exchange reserves	178	144	114.1	97.3	94.53	79	14.2-	14-
Balance of payments	21.41	-26	-26.3	22.09	14.36	-10.4	8.2	6.4
	-	-	-	-	-	-	-	-
Treasury Deficit	-	-	19.86	16.63	10.4	10.4	-	-
Income collection fund deductions to fund the treasury deficit	29.65	18.50	17.97	expiration	expiration	expiration	expiration	

Source:(ACB, 2018)

We note the decline in foreign exchange reserves and erosion has contributed to reducing the margin of external shocks. Algeria also recorded a decline in trade balance and balance of payments deficit. This is not due to the development of Algerian exports, but to the reduction of import licenses, especially import licenses of GDP in 2017.

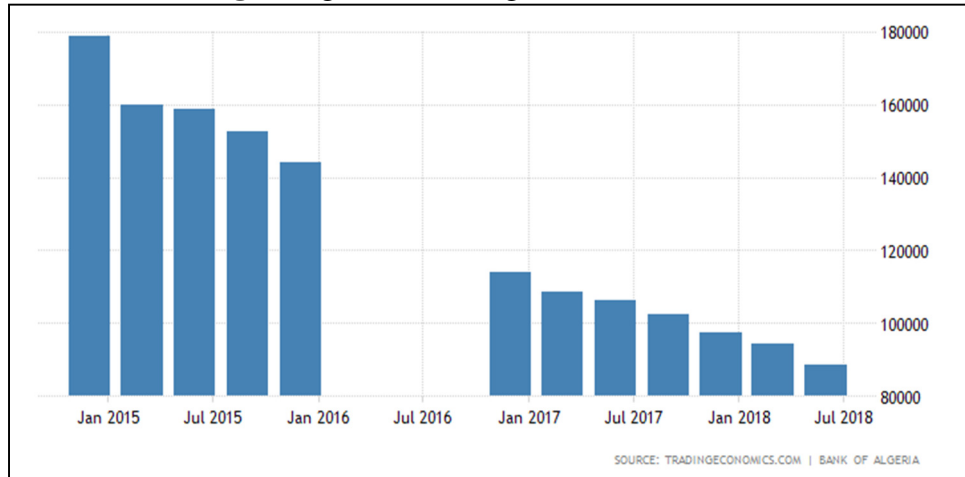
**Fig.4.** Algerian GDP 2010- 2018



Source:(<https://ar.tradingeconomics.com>, 2019)

As we can observe the development of exchange reserve on the following figure:

**Fig.5.** Algerian Exchange reserve 2015- 2018



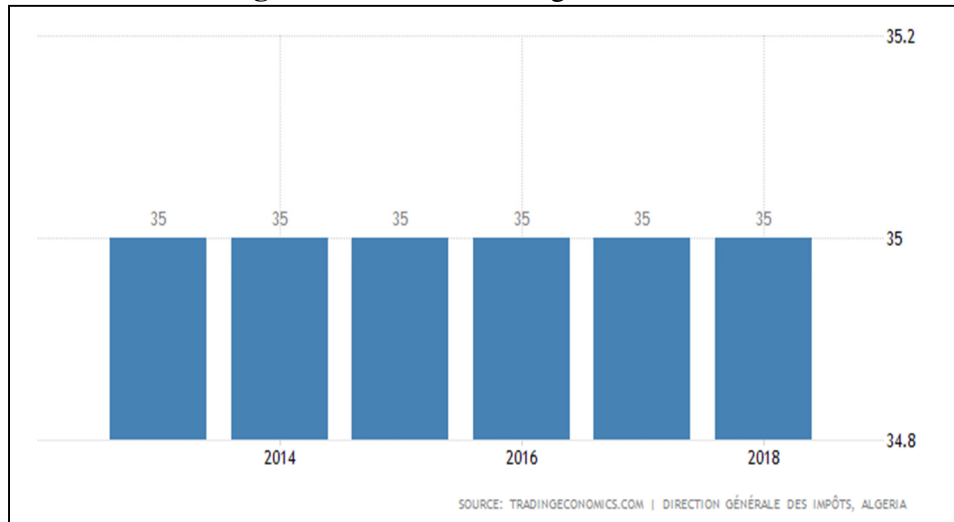
**Source:**(<https://ar.tradingeconomics.com>, 2019)

### 3.7.Taxes:

When the government borrows large amounts of quantitative easing to spend on the present generation, they will live more than their financial resources allow, but future generations will suffer because they will live with little financial resources as a result of higher taxes to pay off the interest of government debt (Rajii, 2017).

A study by the British Economic Group (Oxford Economic Group) said in a recent study that 61 of the surveyed businesspersons believe that the tax climate after 2018 "is no longer favorable" for investment. The most important barriers are the fees and taxes, especially after the rise in prices, which lead to reduce the private consumption. Accordingly, institutions pay taxes and fees that are not justified and necessarily affect their prices, such as the fee for professional activity, which is imposed on the volume of work, without the tax rate of 1% for producers and 2% for service companies, which does not encourage production (Mahfouf, 2018). Algeria is ranked 140th in the world in terms of tax pressure, encouraging the parallel market.

**Fig.5. Income taxes in Algeria 2014- 2018**



**Source:**(<https://ar.tradingeconomics.com>, 2019)

### 3.8. Income and consumption:

The Algerian citizens are suffering from Low-income level, and we do not mean low income in the amount, but in the ability. Because of inflation, the ability of income to respond to expenditure is low.

**Fig.5.Consumer spending in Algeria 2010- 2018**

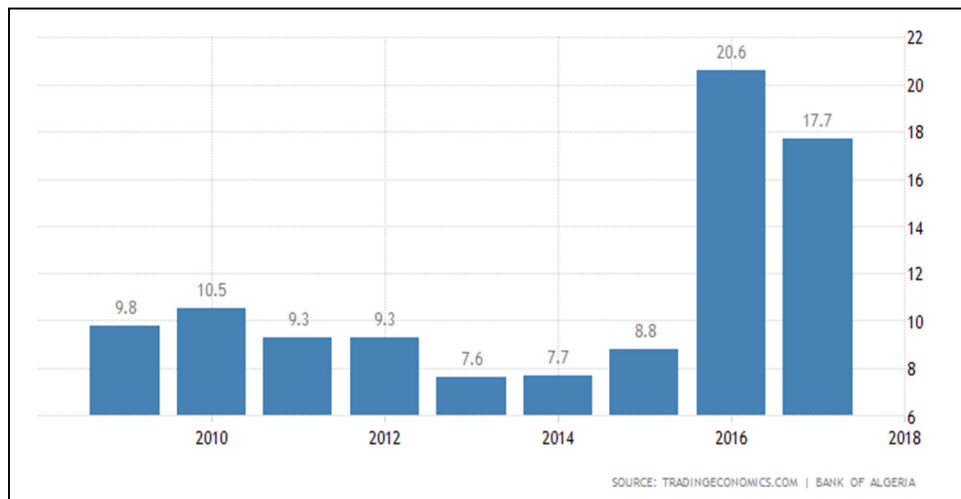


**Source:**(<https://ar.tradingeconomics.com>, 2019)

### 3.9. Public spending:

The biggest risk of QE in Algeria is the highest of public spending, because when the government's borrowing from the central bank or the money instrument, it opens up its appetite for increased public spending, since the loan is not similar to ordinary financial institutions and the attendant debt service. The money instrument also exempts them from repaying the principal and interest of the loan.

**Fig.5.**Public spending in Algeria 2010- 2018



**Source:**(<https://ar.tradingeconomics.com>, 2019)

### 3.10. Investment and savings:

This is due to the increase in the interest rates. The government, by resorting to borrowing from the central bank, will push the private sector to obtain loans and cause interest rates to rise for the projects needed by investors.

In addition, high inflation will lead to the withdrawal of individuals' confidence in the financial system and thus protect themselves from resorting to purchases such as gold, currencies, real estate, storage of durable goods, expanding the informal area and withdrawing liquidity from banks, thus reducing the level of savings.

## 4. Results and Discussion

A many Positive impacts of the QE on Algerian economy can be summarized as follows:

- Financing the public treasury to allow it to finance the budget deficit.
- Financial independence and non-leveraging from the IMF and its high debt service.
- The effectiveness of this method in restoring macroeconomic and financial balances (balance of state treasury and balance of payments).
- Completion of the disrupted projects in recent years.
- Not to impose new taxes on citizens to face public spending.
- Enabled local companies to collect their debts owed by the State, thus enabling them to remain and continue to develop; thus the continuity of the product and workplaces.
- Providing liquidity to banks.

In other hand, economists and analysts speculate that the QE mechanism in financing government budget may not achieve the same goals as in Britain, Japan and the United States of America, because of the characteristics of the Algerian economy and state policies, these characteristics are:

- The weakness of the Algerian economy, QE is a modern mechanism that needs a strong economic and financial base. Algeria still a rural country affected by oil price fluctuations and a crisis show, where the huge financial gains made in previous years to create a competitive productive economy(Rajji, 2017).
- The difficulty in predict the results of unconventional funding through inflation expectations, as inflation in Algeria is affected by many determinants along the classic known determinants.Among these determinants are shortcomings in market regulation, the recording of dominant positions in most consumer goods markets, and the behavior of economic agents in the direction of monetary trading.. According to the Bank of Algeria, the monetary compact is estimated at about 2000 billion DZ, and 4780 billion DZ are traded in the market Parallel in 2017. These values are considered to be extra-banking resources with many economic implications (Al Ashi. w and Sediki. A, 2018).
- The structural rigidity and the excessive social dimension of Algeria's economic development policy is the basis of the failure of the development model and the reason for its low achievements. The



government relies more on its strategy on social view rather than economic view.

- Contradiction and even ambivalence in monetary policy (the urgent need to combine the Ministry of Finance and Trade as one entity for both efficiency and cohesion) For example, the Minister of Commerce announced the ban of about 1000 imported products to provide foreign currency. On the other hand, the Minister of Industry announced the approval of about 40 manufacturers of car trucks imported spare parts,
- As well as The majority of countries that have adopted this mechanism in the world have strong currencies, which are used in sovereign funds and have a corresponding national production. This method succeeded in absorbing the crisis within them (Mekarri, 2017).

## **5. Conclusion:**

This paper seeks to analyze the impact of QE mechanism on macroeconomic indicators in Algeria. We conclude that there is a difference in this, some of which positively affected and some negatively affected. However, the experience of developed countries has proved that this mechanism is not a magic solution. The result proved that the solution is not a new lending mechanism to financing the Treasury; the solution is in developing a real financing resources. QE need a strong economy, and the Algerian economy is too weak to be an incubator for such advanced mechanisms.

Therefore A set of recommendations were provided:

- The State should control public expenditure as the best way by strengthening regulatory provisions on processing expenses. As well as to restrain the government from public spending and the need to comply constitutionally to achieve a balance in the budget between income and expenditure because filling the budget deficit through lending is a worse treatment of the disease.
- Reforms of the banking system through adapting the legislative and regulatory framework that governs and further modernizing payment systems and electronic systems and developing the loan market.
- Improving regular tax revenues.
- Rationalize imports of goods and services by giving priority to local production of goods and services.

- Modernizing the agricultural sector to achieve the goal of food security, promoting agricultural exports, further diversifying the economy, activating non-hydrocarbon growth and improving Algeria's attractiveness in terms of foreign direct investment.
- Economic structural reforms through the development of the digital economy.
- Developing the capital market and the stock exchange to provide alternative.

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