

## The impact of changes in oil prices on monetary and trade policy in Algeria (2000-2017)

اثر تغيرات أسعار البترول على السياسة النقدية والتجارية في الجزائر  
خلال الفترة 2017-2000

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### Abstract:

As Algeria is considered among the rentier states that depend on oil revenues in the implementation of projects and development programs, like other rentier countries of the world, they are affected by fluctuations in oil prices in world markets, and any sudden shift in prices and the subsequent recession and prosperity in economic cycles are situations that policymakers find it difficult to manage effectively. The volatility of prices has exerted effects on the economic policies of the state as a result of monetary and trade policy and fiscal policy negatively affected and positively with the volume of volatile oil revenues, Algeria witnessed the positive and negative fluctuations of oil prices during the period 2000-2017, from the beginning of 2000 to 2014 known In fiscal terms through surpluses resulting from the high oil prices and in the period 2015-2017 has been characterized by a deficit in financial returns, so Algeria sought to take the necessary measures to stabilize its economy in both cases, through its adopted economic policy

**Keywords:** Petroleum; Trade Policc; Monetary Policy; Monetary Block

**Jel Classification Codes:** A19, E60

### ملخص:

وبما أن الجزائر تعتبر من بين الدول الريعية التي تعتمد على المدخول البترولي في تنفيذ مشاريعها وبرامجها التنموية فهي كباقي دول العالم الريعية التي تتأثر بتقلبات أسعار البترول في الأسواق العالمية، وأي تحول مفاجئ في الأسعار وما يليه من كساد وازدهار في الدورات الاقتصادية أشياء يصعب على صناعات السياسة إدارتها بفعالية. فإن التقلب في الأسعار قد مارس تأثيرات على السياسات الاقتصادية للدولة وذلك نتيجة أن السياسة النقدية والتجارية والسياسة المالية تتأثر سلبا وإيجابا مع حجم الإيرادات البترولية المتقلبة، فشهدت الجزائر حالات التقلب الإيجابية والسلبية لأسعار البترول خلال الفترة 2000-2017، فمن بداية سنة 2000 إلى غاية 2014 عرفت بحبوة مالية من خلال الفوائض الناتجة عن ارتفاع أسعار البترول وفي الفترة 2015-2017 عرفت عجزا في العوائد المالية، لذلك سعت الجزائر إلى اتخاذ التدابير اللازمة لاستقرار اقتصادها في تلك الحالتين، وذلك عن طريق سياستها الاقتصادية المعتمدة.

**الكلمات المفتاحية:** البترول؛ السياسة التجارية؛ السياسة النقدية؛ الكتلة النقدية..

**تصنيف JEL:** E60, A19

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## **Introduction:**

The fluctuations in oil prices in the world oil market are an obstacle to the economy of the countries that depend on it such as Algeria and it has effects on economic policies, where the petroleum sector in Algeria is one of the most important sectors on which the economic policies are based, namely fiscal, monetary and trade policy. Since independence, Algeria has relied on this sector to develop its economy, especially after the nationalization of 1971, and thus it became the main motivator of various sectors by providing sufficient funds to meet their needs.

As Algeria's economy is closely linked to the petroleum sector, which in turn is subject to price fluctuations in the global oil market, this relationship makes internal and external balances under the influence of oil price fluctuations, which is a concern for the country's economic policy.

In terms of monetary policy, the fluctuations in oil prices are among the factors that affect the volume of liquidity and their monetary situation, which is reflected in the surplus liquidity in the case of high prices and achieve a liquidity deficit in case of lower prices, prompting the Bank of Algeria to take all measures to avoid any negative impact on these cases (excess or deficit of liquidity) by recovering or pumping liquidity.

Algeria's trade policy relies heavily on exports of petroleum, which account for more than 97% of total exports, making them more vulnerable to oil price fluctuations. Since exports are linked to oil price fluctuations, imports are also linked to export earnings and are also affected by oil price fluctuations, the difference between them is the trade balance which is also affected by the changes in oil prices. Thus, the trade balance in Algeria has shown surplus and deficit cases during the study period.

From the above, one can ask the following main question:

### **What are the implications of oil price fluctuations on trade and monetary policy in Algeria?**

To answer this problem, the following sub-questions can be asked:

- How are oil price changes reflected in Algeria's monetary policy?
- How do oil price changes affect Algeria's trade policy?

To answer the previous sub-questions we rely on the following assumptions:

- Oil price fluctuations affect monetary policy in terms of instruments and the size of the money supply.
- There is a direct relationship between oil prices and both exports and imports and trade balance.

In this paper we will study the implications of oil price fluctuations on Algeria's trade and monetary policy during the period 2000-2017 through the following two topics:

**The first topic:** the trade policy of Algeria during the period 2000-2017

**The second topic:** the effects of oil price fluctuations on monetary policy during the period 2000-2017

### **The first topic: the trade policy of Algeria during the period 2000-2017**

The trade policy adopted in Algeria has made it a country that exports a single product. It is Petroleum because it is a source of income and the financing of development plans. Therefore, the situation of trade policy is dependent on oil prices.

Any increase or decrease in oil prices results in a rise or decrease in the funds of trade balance and of payments balance. So, this subject reflects the effects of oil price fluctuations on trade policy during the period 2000-2017

#### **First: Oil price changes and their implications on trade policy (2000-2008)**

We mean by the trade policy the foreign trade in Algeria and its structure consists of exports and imports and the difference between them is the trade balance, which has shown fluctuations during the study period between the rise and fall because of the fluctuations in the proceeds of petroleum exports.

The following table shows the evolution of the structure of foreign trade during 2000-2008:

**Table (1): Evolution of Foreign Trade Structure in Algeria (2000-2008)**

Unit: US \$ 1 billion

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
Oil prices/\$1 per barrel	27.6	23.1	24.3	28.2	36	50.6	61	69.1	94.4
Total exports	21.65	19.09	18.71	24.46	32.22	46.33	54.74	60.59	78.59
Oil exports	21.06	18.59	18.11	23.99	31.55	45.59	53.61	59.61	77.19
Non-oil exports	0.59	0.56	0.60	0.47	0.67	0.74	1.13	0.98	1.40
Total imports	9.35	9.48	12.01	13.32	17.95	19.86	20.68	26.35	37.99
Balance of trade	12.30	9.61	6.70	11.14	14.27	26.47	34.06	34.24	40.60
Balance of Payments	7.57	6.19	3.65	6.86	8.99	16.94	17.73	29.55	36.99

Source: Annual Reports of Algeria's Economic and Monetary Developments, Bank of Algeria.<sup>1</sup>

The structure of Algerian exports depends primarily on the petroleum sector, with exports representing more than 97% of total exports. The table shows that the year 2000

has a rise in the volume of total exports resulting from the increase of exports of fuel which reached 21.06 billion dollars. The volume of exports outside of petroleum sector formed a small volume of total exports amounting to 0.59 billion dollars, which resulted 12.30 billion dollars surplus in the trade balance , thus achieving a balance of payments surplus estimated to 7.57 billion dollars.

Total exports directly declined again in 2001-2002 due to lower oil prices, resulting a drop in oil exports to \$ 18.53 billion and \$ 18.11 billion respectively, and non-petroleum exports in 2001 dropped to \$ 0.56 billion, then rose to 0.60 in 2002 Billion dollars. Imports increased significantly in 2001-2002 and were estimated to \$ 9.48 billion and \$ 12.01 billion, respectively. The trade balance funds declined due to the decrease of petroleum exports and the increase of imports. This trade balance reached 9.61 billion dollars in 2001 and 6.70 billion dollars in 2002.

During the period 2003-2008, the progressive increase in the volume of imports, in addition to the increase in the volume of imports, contributed to the increase in

petroleum exports in covering the local needs of imports. In addition to that, the increase in the volume of imports is due to the development policies adopted by Algeria during the period of the study, was based on economic recovery programme, resulting in the increase in the volume of imports.

In 2008, the largest volume of oil exports amounted to 77.19 billion dollars, coinciding with the rise in oil prices to 94.4 dollars per barrel compared to previous years. The trade balance witnessed a surplus of 40.60 billion dollars and balance of payments to 36.99 billion dollars, the largest value since 2000.

### **Second: Implications of oil price fluctuations on trade policy (2009-2017)**

The year 2008 recorded the largest volume of total exports and a large surplus in the trade balance, which made Algeria achieve growth in its economy. However, in 2009-2014 there was volatility in both exports and trade balance. The year 2015-2017 continued to decrease the funds of trade balance which led to deficit in this period, this is because of the repercussions of the falling oil prices.

### **1-Implications of oil price fluctuations on trade policy (2009-2014)**

Knowing that this period was characterized by the collapse of oil prices in 2009 and in 2014, but the years in between have known a significant development in oil prices, leading to fluctuations in the structure of foreign trade.

**Table (2): Evolution of Foreign Trade Structure (2009-2014)**

Unit: US \$ 1 billion

<i>Year</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>
<i>Total exports</i>	45.18	57.09	72.888	71.736	64.867	60.129
<i>Oil exports</i>	44.41	65.12	71.661	70.583	63.816	58.462
<i>Non-oil exports</i>	0.77	0.97	1.227	1.153	1.051	1.667
<i>Total imports</i>	37.40	38.89	46.927	51.569	54.987	59.670
<i>Balance of trade</i>	7.78	18.20	25.961	20.167	9.880	0.459
<i>Balance of Payments</i>	3.86	155.33	20.14	12.05	0.16	-5.88

Source: Annual Reports of Algeria's Economic and Monetary Developments, Bank of Algeria, from 2010 to 2015<sup>2</sup>

Table 2 shows that 2009 witnessed a decline in the value of petroleum exports, which reached 44.41 billion dollars, compared to 77.19 billion dollars in 2008. This decline is because of the fall of oil prices to 61 dollars due to the repercussions of the global financial crisis, followed by a slight decline in imports, Besides, trade balance fell down to reach \$ 7.78 billion compared to \$ 40.60 billion in 2008, and the payments balance deteriorated to \$ 3.86 billion compared with \$ 36.99 billion in 2008.

During the period 2010-2011, the value of total exports improved thanks to the improvement in petroleum exports owing to the rise in oil prices, with progressive increase in imports. This increase is explained by the expansion of imports of processing materials in a situation characterized by improved investment in the national economy and the appreciation of the euro against the dollar, and the trade balance and payments balance have also recovered.

In 2013-2014, total exports decreased due to the drop in petroleum exports. This was owing to the decline in oil prices to 105.9 dollars in 2013, and 96.2 dollars in 2014. the trade balance decreased to 9.880 billion dollars and 0.495 billion dollars (semi-balance) in 2013 and 2014 respectively. Due to the high rate of imports associated with shrinking petroleum exports and the balance of payments recorded a sharp decline of 0.13 in 2013 and a deficit of \$ 5.88 billion in 2014.

## **2. Implications of oil price fluctuations on trade policy (2015-2017)**

After the collapse of oil prices in 2014 and the negative impact on oil exports and trade balance, oil prices continued to decline during the 2015-2016 period and rose slightly in 2017, affecting the structure of Algeria's foreign trade.

**Table (3): Development of the structure of foreign trade in Algeria (2015-2017)**

Unit: US \$ 1 billion

<i>Year</i>	<i>2015</i>	<i>2016</i>	<i>2017</i>
<i>Total exports</i>	34.566	29.311	32.9
<i>Oil exports</i>	33.081	27.918	31.6
<i>Non-oil exports</i>	1.485	1.393	1.3
<i>Total imports</i>	52.649	49.437	48.7
<i>Balance of trade</i>	-18.083	-20.127	-15.8
<i>Balance of Payments</i>	-27.537	-26.03	-23.3

Source: Annual Reports of Algeria's Economic and Monetary Developments, Bank of Algeria.<sup>3</sup>

The table shows that the trade balance in 2015 recorded the first deficit during the study period (2000-2017) and amounted to 18.083 billion dollars then the deficit continued in 2016 and 2017.

The total exports fell sharply in 2015-2016 due to the decline in oil prices to 49.5 dollars and 40.7 dollars respectively, which resulted in the decline of the exports volume of petroleum, and amounted to 34.566 billion dollars in 2015 and 29.311 billion dollars in 2016 and also non-petroleum exports decreased from 1.485 Billion in 2015 to 1.393 billion dollars in 2016.

Imports also showed a decrease compared to 2014, estimated to \$ 52.649 billion and \$ 49.437 billion in 2015-2016 respectively. However, this decrease in imports exceeds the volume of total exports. The trade balance recorded a deficit of \$ 18.083 billion and \$ 20.127 billion, and the payments balance recorded a deficit of 26.03 billion dollars in 2016 compared with 27.537 billion dollars in 2015 due to the high capital-account.

But in 2017 The trade balance deficit declined to 15.8 billion dollars, a reduction of \$ 40327 billion dollars compared to 2016, and this is due to the increase in oil exports resulting from the increase in oil prices, which amounted to 52.5 dollars compared to 40.7 dollars in 2016, The trade balance deficit declined, followed by a drop in the balance of payments to \$ 23.3 billion

**Figure (1): The development of Algeria's foreign trade structure during the period 2000-2017**

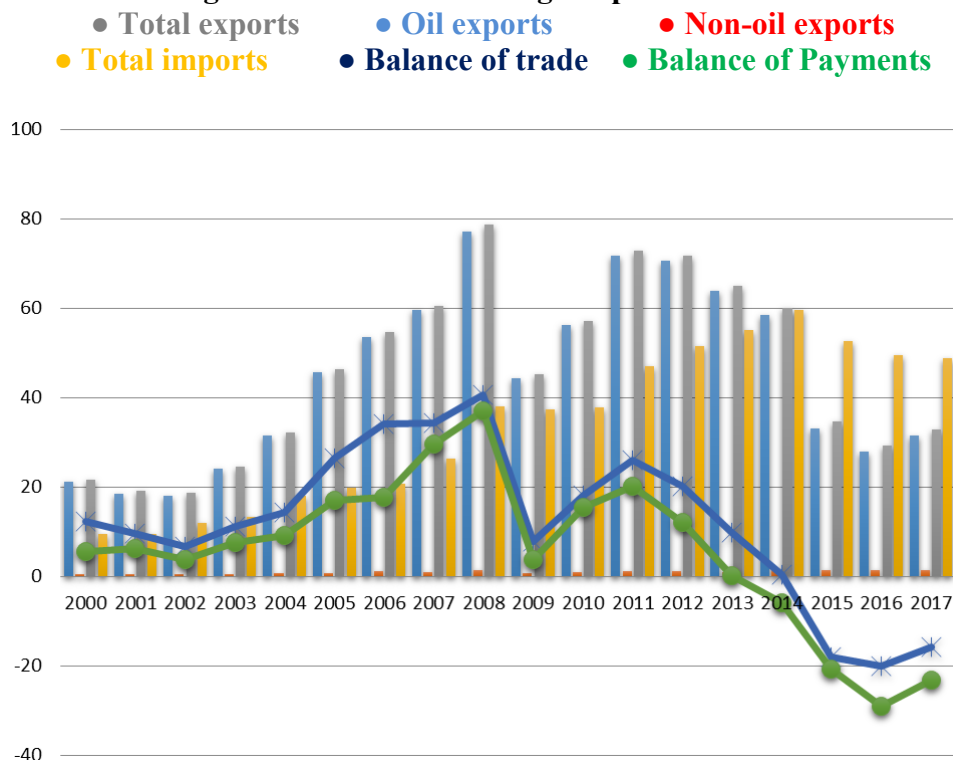
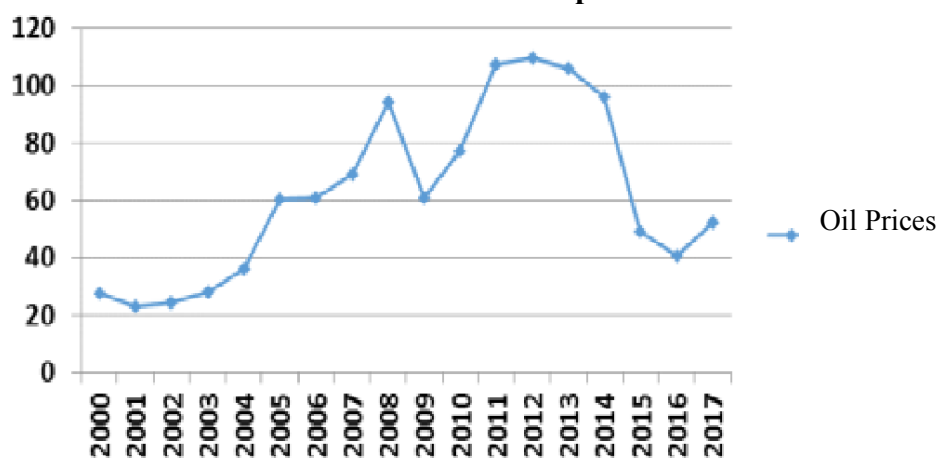


Figure (2): Evolution of Oil Prices 2000-2017

Unit: US \$ 1 per barrel



We conclude from figures 1 and 2 that the petroleum sector occupies an important position in the Algerian economy, which is about 97% of the total exports. There is a direct correlation between oil prices and balance of trade. The volume of exports leads to a rise in the balance of trade, and vice versa in the case of low oil prices in

the international market. However, Algeria's economy has been characterized by the fact that in the case of high oil prices, a large surplus is not recorded in the trade

balance because the policy adopted by the state is to increase the imports which depend on economic growth programs, that led to a drop in the trade balance or deficit.

We conclude also from figure (2) that Algeria achieved surpluses in the balance of trade due to the increase in exports of petroleum resulting from the rise in oil prices to 94.4 dollars per barrel. The largest surplus achieved by Algeria in trade balance during the study period is in 2008, which is estimated to 40.60 billion dinars. The next year, this balance dropped to 7.78 billion dinars due to the deterioration of oil prices to 61 dollars a barrel, and then oil prices stabilized until it rose from 2010-2012 and the balance of payments achieved surplus. It is evident that there are fluctuations in oil prices, which is reflected in the structure of foreign trade . The first deficit of the trade balance was in 2015 due to the decline in oil prices and the increase of imports due to the deterioration of oil prices and the growing increase of imports, which exceeded the volume of exports during the years 2015-2017. Despite the high oil prices in 2017 and the decline in imports, but it exceeds the volume of exports, which led to trade deficit.

As for non-petroleum exports, they remained weak despite their gradual upward trend. This indicates the lack of competitiveness in the national economy, in addition to the sharp weakness in the dynamics of economic activity outside of petroleum industry.



However, the Bank of Algeria introduced two measures to promote non-petroleum exports in 2016:<sup>4</sup>

- "Active Improvement", which is the abolition of the mandatory import from the importers of materials entering the process of production of goods destined for export license of the Bank of Algeria to settle the temporary import of these materials, and in this case the payment of these imported materials are discounted to exporters using foreign currency.

- Extending the period of deportations to Algeria for the export output from 180 days to 360 days, with the mandatory export insurance contract for more than six months. This measure allows respecting the obligation of deportation immediately upon payment. The exporter also benefits from the possibility of obtaining from his bank advances guarantee the insurance contract to support his activity.

### **The second topic: the effects of oil price fluctuations on monetary policy during the period 2000-2017**

Since Algeria is a monopolistic country and relies mainly on revenues from the petroleum sector, the Algerian economy became highly vulnerable to fluctuations in oil prices in international markets, thus monetary policy is influenced by the changes caused by external shocks to its instruments and the size of the money supply.

#### **First: Oil prices and their relation to the developments of the money supply during the period 2000-2017**

The monetary policy of Algeria has been linked to the oil prices, which have a clear effect on them. This has been demonstrated by the developments in M2 (legal money, demand deposits and quasi money).

#### **1- Evolution of the money supply in Algeria (2000-2008)**

The following table shows the development of the cash supply in Algeria during 2000-2008 and the impact of oil prices on the monetary situation.

**Table (4): Evolution of the annual percentage change of the monetary mass 2000-2008**

<i>Year</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
<i>Oil prices per barrel</i>	27.6	23.1	24.3	28.2	36	50.6	61	69.1	94.4
<i>Annual percentage change of the monetary mass M2 %</i>	13.3	22.3	17.3	15.6	10.5	11.7	18.7	21.5	16

**Source:** Annual Reports of Algeria's Economic and Monetary Developments, Bank of Algeria.<sup>5</sup>

From the previous table, the period of the study witnessed a continuous increase in oil prices in the international markets. As of the beginning of 2000, the price of oil rose to 27.6 dollars, leading to a rise in the percentage of money supply to 13.3% , and then increased to 22.3% in 2001 due to the increase in external net cash balances, and the economic projects programmed in the framework of both the economic recovery



program and the recovery program of the south, where funds were allocated for these programs, which led to a rise in the size of money supply to 2473.5 billion dinars in 2001 compared to 2022.5 billion dinars in 2000.

The increase in oil prices in 2002-2008 led to an increase in the volume of the cash mass which amounted to 6955.9 billion dinars in 2008, a growth rate of 16%, which is due to the increase in demand deposits for the petroleum sector, especially demand deposits for Sonatrach.

## **2 - Development of the monetary mass in Algeria 2009-2014**

Since oil prices fluctuated in this period, this led to a change in the size of the money supply and the following table shows this.

**Table (5): Evolution of the annual percentage change of the monetary mass 2009-2014**

<i>Year</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>
<i>Oil prices per barrel</i>	61	77.4	107.5	109.5	105.9	96.2
<i>Annual percentage change of the monetary mass M2 %</i>	3.1	15.4	19.9	10.9	8.4	14.6

Source: Annual Reports of Algeria's Economic and Monetary Developments, Bank of Algeria<sup>6</sup>

Oil prices fell down in 2009 to \$ 61 a barrel due to the global financial crisis, which led to the decline in the money supply mainly due to the decline in growth of demand deposits for banks resulting from a sharp contraction in deposits in the petroleum sector, this reflects the impact of external shock on the enterprises cash in this sector. The development of the structure of money supply remains closely related to the behavior of the petroleum sector institutions. The table shows a growth rate of 3.1% in 2009 (weak growth). The banks liquidity declined due to the strong contraction of deposits in the petroleum sector and the increase in the financial savings of the public treasury for the Algerian Bank. But the price of oil rose in 2010 to 77.4 dollars. The

cash mass grew by 15.4% and the latter continued to rise to 19.9%, which was the third largest growth rate since 2000, this led to improve the volume of deposits, especially deposits of the petroleum sector and oil prices were estimated to 107.5 dollars. However, the growth rate of the money supply declined in 2012, especially under the impact of the contraction of deposits of the petroleum sector to 10.9% and decrease in 2013 to 8.4%. After that, the monetary growth returned to 14.6% in 2014 despite the external shock in the deterioration of the oil price estimated to 96.2 \$. The net external assets increased in a circumstance marked by the resumption of M2 monetary expansion, which reached 14.6% in a situation characterized by stable quasi-money growth and the stability of paper money rate compared M2. The continuous strong rise of long-term loans remains a key determinant of monetary expansion in 2014 truncating from the resources of the Income Control Fund. This reflects the lack of consistency in the evolution of oil prices on the one hand, and the development of money supply on the

other hand, despite the fact that the monetary policy of Algeria was determined according to the circumstances that were at every turn imposed by fluctuations in oil prices.

### **3 - Development of the monetary mass in Algeria 2015-2017**

The following table shows the monetary situation in case of deterioration of oil prices.

**Table (6): Evolution of the percentage of annual change of the monetary mass 2015-2017**

<i>Year</i>	<i>2015</i>	<i>2016</i>	<i>2017</i>
<i>Oil prices per barrel</i>	49.5	40.7	52.5
<i>Annual percentage change of the monetary mass M2 %</i>	0.1	0.8	6

Source: Annual Reports of Algeria's Economic and Monetary Developments, Bank of Algeria<sup>7</sup>

The combined monetary position was characterized by an almost zero M2 growth in 2015 of 0.1% due to the contraction of demand deposits for the petroleum sector. Under the influence of the strong contraction of petroleum deposits, the bank liquidity surplus was reduced. The sharp fall in oil prices to \$ 49.5 in 2015, coinciding with the considerable deficit in the total of the payments balance, leading to a decrease in bank liquidity.

In 2016, growth was very simple or almost non-existent in money supply and was estimated to 0.8%. This weak growth was due to the decrease in deposits outside the petroleum sector while the deposits of the this sector increased by 2.6%.

In 2017, M2 increased by 6%, the deposits of banks increased despite the decline in petroleum deposits. This increase was attributed to the resources of the public economic sector, the private sector and the households. Bank liquidity also increased through recourse to the Central Bank (refinancing operations), This rise is also due to the introduction of non-traditional financing.

### **Second: Oil price changes and their reflection on the monetary policy instruments in Algeria 2000-2017**

Since 2000, the Algerian economy has witnessed very important developments. With the return of the rise in oil prices, this reflected positively on the national economy and led it to live in financial prosperity in light of the influx of huge financial resources and its reflection on all aspects of the national economy. During this phase, the Algerian authorities resorted to a number of amendments in order to influence the course of monetary policy and make it more compatible with the prevailing monetary situation, through creating several indirect tools in line with the need required by the economy and on the other hand corresponds to the volume of liquidity in the economy.

#### **1- Monetary Policy Tools 2000-2008**

According to the changes in oil prices, it reflected on liquidity of the banking system, monetary policy controlled through its tools the liquidity in the economy.

**Table (7): Development of Monetary Policy Tools 2000-2008**

<i>Year</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
<i>Oil prices per barrel</i>	27.6	23.1	24.3	28.2	36	61	50.6	69.1	94.4
<i>Rediscount rate %</i>	7.5	6	5.5	4.5	4	4	4	4	4
<i>Statutory reserves rate %</i>	2.5	3	4.25	6.25	6.5	6.5	6.5	6.5	8
<i>Liquidity recovery rate for 7 days %</i>	-	-	2.75	1.75	0.75	1.25	1.25	1.75	1.25
<i>Liquidity recovery rate for 3 months %</i>	-	-	-	-	-	2	1.9	2.5	2
<i>Deposit facilities interests %</i>	-	-	-	-	-	0.3	0.3	0.75	0.75

Source: Annual Reports of Algeria's Economic and Monetary Developments, Bank of Algeria<sup>8</sup>

The table shows indirect monetary policy instruments adopted by the Bank of Algeria. It is clear that there is a decline in the re-deduction rate from 7.5% in 2000 to 6% in 2001 to provide liquidity in commercial banks and not to request refinancing by the Bank of Algeria, and the increase in liquidity in commercial banks is due to the rise in oil prices by \$ 27.6 in 2000, while the Bank of Algeria raised the obligatory reserve ratio from 2.5% to 3% in 2000-2001 respectively to absorb excess liquidity, but these two instruments were not enough to absorb it, since a new liquidity absorption tool was introduced, namely, liquidity recovery through the call for tenders, which is based on the method of withdrawing surplus liquidity, which came into force in 2002, approximately 2.75%. This is a voluntary and optional deposit of surplus deposits in the Bank of Algeria. This mechanism relies on the Bank of Algeria calling the commercial banks of the banking system to put their liquidity in the form of deposits for 24 hours or a period of time, in exchange for a fixed interest rate calculated on a benefit period (360 / n) by participating in a tendering announced by the Bank of Algeria. This tool has allowed for the absorption of a huge amount of cash-flow. The Bank of Algeria continued to raise the statutory reserve ratio to 4.25% in 2002 and to reduce the rate of rebate to 5.5%.<sup>9</sup>

In these years 2004-2007, coinciding with the rise in oil prices, which led to the increase in liquidity, the Bank of Algeria proved the rate of re-discounting to 4% , and the statutory reserve rate to 6.5%. The Bank of Algeria introduced a second tool, the Deposit Facility in 2005, which is a technique that allows banks to summarize deposits 24/7 at the Bank of Algeria in the form of a loan granted by commercial banks to the Bank of Algeria in exchange for interest calculated on the basis of maturity and fixed interest rate to be determined by the Bank of Algeria. The deposit interest rate was estimated to be 0.3%.<sup>10</sup>

The three-month liquidity recovery tool also contributed to the decrease in liquidity, so its increase was accompanied by the increase in liquidity resulting from the continuous increases in oil prices from 1.9% to 2.5% in 2007. In 2008, the continuation of the liquidity surpluses of the banks and the increase in oil prices which reached \$ 94.4, the focus was on raising the statutory reserve ratio to 8% and maintaining a 4% discount rate, since commercial banks have not resorted to refinancing by the Bank of Algeria. While the liquidity recovery rate for 7 days was reduced to 1.25% and for 3 months to 2%, and the deposit facilities interests rate remains 0.75%.

## **2- Evolution of Monetary Policy Tools 2009-2014**

The table shows the relationship between oil price fluctuations and monetary policy instruments.

**Table (8): Evolution of Monetary Policy Tools 2009-2014**

<i>Year</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>
<i>Oil prices per barrel</i>	61	77.4	107.5	109.5	105.9	96.2
<i>Rediscount rate %</i>	4	4	4	4	4	4
<i>Statutory reserves rate %</i>	8	9	9	11	12	12
<i>Liquidity recovery rate for 7 days %</i>	0.75	0.75	0.75	0.75	0.75	0.75
<i>Liquidity recovery rate for 3 months %</i>	1.25	1.25	1.25	1.25	1.25	1.25
<i>Liquidity recovery rate for 6 months %</i>	-	-	-	-	1.5	1.5
<i>Deposit facilities interests %</i>	0.3	0.3	0.3	0.3	0.3	0.3

Source: Annual Reports of Algeria's Economic and Monetary Developments, Bank of Algeria<sup>11</sup>

Oil prices increased in 2011 to \$ 107.5 and in 2012 to \$ 109.5, this resulted in the accumulation of liquidity surplus. A new instrument was introduced in 2013 to absorb the structural surplus of banks liquidity in money market. This is a mechanism for recovering liquidity for 6 months at a weighted rate of interest estimated at 1.5% (2013-2014) in order to enhance the aforementioned liquidity recovery mechanisms. The deposits facilities interests remained constant throughout these years 2009-2014.

## **3- Development of monetary policy instruments 2015-2017**

This period was characterized by the deterioration of oil prices. The Bank of Algeria took measures and amendments on the management of monetary policy, after absorbing the bank liquidity surplus through absorption instruments and deposit facilities gradually after 2015 towards a liquidity injection policy to ensure refinancing of the banking system.

Since 2001, banks and financial institutions have not resorted to refinancing the Bank of Algeria in view of the structural surplus of liquidity in the money market, this situation in the Bank of Algeria led to the use of absorptive tools starting in 2002 and under the influence of the strong contraction of petroleum deposits due to the drop in oil prices to

\$ 49.5 in 2015 for the first time since the beginning of 2000, The average annual level of surplus bank liquidity shrank in 2015, from 2826.3 billion dollars in 2014 to 2135 billion dollars in 2015, a drop of 32.9% in bank liquidity.

**Table (9): Development of monetary policy instruments 2015-2017**

<i>Year</i>	<i>2015</i>	<i>2016</i>	<i>2017</i>
<i>Oil prices per barrel</i>	49.5	40.7	52.5
<i>Rediscount rate %</i>	4	3.5	3.75
<i>Statutory reserves rate %</i>	12	8	8
<i>Liquidity recovery rate for 7 days %</i>	0.75	0.75	0.75
<i>Liquidity recovery rate for 3 months %</i>	1.25	1.25	1.25
<i>Liquidity recovery rate for 6 months %</i>	1.5	1.5	1.5
<i>Deposit facilities interests %</i>	0.3	0	0

Source: Annual Reports of Algeria's Economic and Monetary Developments, Bank of Algeria<sup>12</sup>

### **Conclusion:**

The dependence of Algeria's on the petroleum sector has made economic policies very closely related to the volatilities and fluctuations of oil prices in the international markets. The monetary policy of the Bank of Algeria has faced some complications because it operates in an economic environment characterized by a strong dependence on the petroleum sector. Any change in oil prices tends to cause fluctuations in money stocks which resulted a major challenge for Algeria's monetary policymakers. Oil price developments are one of the most important factors influencing the Bank of Algeria in its monetary policy process. Any rise or fall in oil prices impacts the size of the money supply, hence the monetary policy instruments are affected, either absorbing or pumping liquidity. Trade policy is also related to the volatility of oil prices, where the proportion of exports of oil is very large, which exceeds 97% of the total exports, so are affected by the volatility of its price and imports will be affected too, so it is related to oil prices. The main factor in determining the position of the trade balance is the price of oil because Algeria is among the rent-dependent countries that depend on the income of oil. As for fiscal policy, we find that public revenues are greatly affected by oil prices through the petroleum tax collection, because Algeria heavily relies on oil revenues to finance its development programs through increasing the size of its public expenditure and allocating huge amounts for it in order to achieve economic and social goals.

- The correlation between the evolution of the money supply and the tools and objectives of monetary policy is closely related to developments in oil prices in international markets.
- The increase in oil prices helps to increase the financial surpluses and improve the economic level of Algeria during the period 2000-2014, while the decline in oil prices during the period 2015-2017 led to the fragility of the economic level of the state.
- The excessive reliance on oil in the Algerian economy has caused a deficit in many macroeconomic indicators such as public finances, balance of payments

and monetary aggregates due to the deterioration of the revenues of the petroleum sector in light of the increasing pace of expenditures and imports, the decrease in exchange reserves and the decline in the surplus liquidity of banks.

- Algeria has relied on the search for sources to raise its revenues and resorted to raising prices and taxes that will be borne by the last consumer and will lead to reduced demand, and hence to reduced production.
- The State has taken measures to improve the economic situation by encouraging exports outside of petroleum sector and reducing imports through the settlement of imports and import licenses for a number of products or goods, and as a result of improving the status of the trade balance.

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