

# The Management of Foreign Exchange Reserves in Algeria

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## إدارة احتياطات النقد الأجنبي في الجزائر

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Received: 01/02/2020

Accepted: 24/04/2020

Published: 15/09/2020

### Abstract:

Foreign exchange reserves have long been a very important part of the international monetary system. These reserves have developed drastically, especially in recent years. In the second quarter of 2019, the amount of reserves in the world exceeded 11730 billions American Dollars. In Algeria, foreign exchange reserves have also grown significantly in recent years due to the rise in oil prices in the world market. Reserves reached a peak in 2013 with 194.012 billions Dollars. After the fall in oil prices in June 2014, reserves decreased to approximately 73 billions Dollars in the first quarter of 2019. Today, the priority is not the accumulation of reserves, but their management policies. In this paper, the policy of foreign exchange reserves management in Algeria will be studied. For this purpose, we will proceed by a theoretical approach of the concepts and models of foreign exchange reserves management and a descriptive analysis, using figures and then identify the shortcomings of this management policy. As a result, Algeria has always opted for prudent reserves management and a preference for the dollar as a reserve currency followed by the euro. On the other hand, it has allowed the prepayment of external debts and created the Income Regulation Fund (IRF). Therefore, investing part of these reserves in a sovereign investment fund, in medium-risk securities, and in financing of domestic investments in order to boost the local economy with transparent management could constitute interesting alternative or complementary ways.

**Keywords:** Foreign Exchange Reserves; Algeria; Reserve Management; Income Regulation Fund; Securities.

**JEL Classification Codes:** E58 ; F31 ; G15

ملخص:

لطالما كانت احتياطات النقد الأجنبي جزءاً مهماً جداً من النظام النقدي الدولي. لقد تطورت هذه الاحتياطات بشكل كبير، خاصة في السنوات الأخيرة. في الربع الثاني من عام 2019 تجاوز حجمها في العالم 11730 مليار دولار أمريكي. في الجزائر، ارتفعت هذه الاحتياطات بسبب ارتفاع أسعار النفط في السوق العالمية، حيث بلغت ذروتها في عام 2013 مسجلة 194.012 مليار دولار. بعد انخفاض أسعار النفط في يونيو 2014، انخفضت الاحتياطات إلى ما يقرب من 73 مليار دولار في الربع الأول من عام 2019. اليوم، الأولوية ليست لتراكم الاحتياطات، ولكن لسياسات إدارتها. في هذه الورقة سوف ندرس سياسة إدارة احتياطات النقد الأجنبي في الجزائر من خلال نهج نظري لمفاهيم ونماذج إدارة احتياطات النقد الأجنبي والتحليل الوصفي لبعض المعطيات، ثم سنحدد نقائص هذه السياسة. كنتيجة، اختارت الجزائر الإدارة الحكيمة للاحتياطات وتفضيل الدولار كعملة احتياطية يليه اليورو. من ناحية أخرى، سمحت بالدفع المسبق للديون الخارجية وأنشأت صندوق تنظيم الدخل. إن استثمار جزء من هذه الاحتياطات في صندوق سيادي، وفي أوراق مالية متوسطة المخاطر، وفي تمويل الاستثمارات المحلية من أجل تعزيز الاقتصاد الوطني بإدارة شفافة يمكن أن تشكل طرقاً بديلة أو تكميلية مثيرة للاهتمام.

**الكلمات المفتاحية:** احتياطات النقد الأجنبي؛ الجزائر؛ إدارة الاحتياطي؛ صندوق تنظيم الدخل؛ الأوراق المالية.

**الترميز الاقتصادي (JEL) :** E58 ؛ F31 ؛ G15

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## I- Introduction :

Foreign exchange reserves have been a very important part of the international monetary system for a very long time. They are defined as external assets that the monetary authorities directly control and can immediately dispose of to meet the balance of payments financing needs, to intervene in foreign exchange markets to influence the exchange rate, as well as for other related needs. (IMF, 2009). These reserves have increased very considerably, especially in recent years. This spectacular increase is due to the commercial surpluses in emerging and developing countries and to higher capital inflows to emerging countries. Moreover, after the Asian crisis of 1997-1999, several countries have preferred to hold a significant amount of foreign exchange reserves; the aim is to protect the country's economy against internal and external shocks and to increase confidence in this country in international financial markets. These reserve levels are much higher than the adequacy level, and in fact, the cost of holding reserves is very high, so these external assets should be used wisely.

In recent periods, besides the increase of reserves, their management has gained importance too. Algeria, which is an oil exporting country, has benefited from the rise in oil prices in the world market and has achieved significant growth in recent years. However, after the decline in oil prices in June 2014, reserves decreased to approximately 73 billions dollars in the first quarter of 2019 (IMF, 2019) and to 62.75 billions dollars at the end of 2019 (Bank of Algeria). For this, we ask the following research question: **Is the policy for managing exchange reserves in Algeria optimal?**

From this central question arise the following secondary questions:

- ♦ What are the existing foreign exchange reserves management policies in the economic literature?
- ♦ Where has Algeria invested its reserves and in which currencies and assets?
- ♦ What was the role of the Income Regulation Fund created in 2000? Can it be considered as a sovereign fund?

Therefore, starting from the idea that the Central Bank is an institution that privileges the public interest, we formulate the **following two hypotheses**:

- ♦ The Bank of Algeria manages its foreign exchange reserves in a prudent and secure manner by investing its foreign exchange in government bonds or in renowned and well-rated banks in developed countries.
- ♦ The creation of Income Regulation Fund has played a role in the stabilization of macroeconomic imbalances.

In this article, after we summarize the situation of international reserves in the world and after considering the reserve management policy, we will explain the management adopted by Algeria by examining the annual reports of the Bank of Algeria and analysing the data collected from different sources: Bank of Algeria, the Ministry of Finance and others using figures and then identify the shortcomings of this management policy and to propose alternatives to this management for a better use of the reserves like creating a real sovereign fund and investing in more profitable securities by taking a proportion of risk.

We found that Algeria has always chosen a prudent reserve management policy for the management of its reserves such as investing these funds in government securities with a minimum risk and ensuring a modest return and liquidity. Under this management, Algeria has taken various

strategic measures in the 2000s, which is the prepayment of external debt and the creation of an Income Regulation Fund (Fonds de Régulation des Recettes, FRR).

### **Objectives of the Study:**

Given the current context of the world economy, namely the accumulation of foreign exchange reserves in the world and the evolution of policies for managing them on one hand, and the downward trend in oil prices and the fall in interest rates of government securities, on the other hand, and given the current context of the Algerian economy, namely the dependence of a unique sector and the continuous decline of the Algerian foreign exchange reserves, it was essential to study this policy adopted by the Central Bank in collaboration with the Ministry of Finance. The objective is evaluating and valorising these remaining foreign exchange reserves and, thus, reflect on other practices that will encourage the financing of domestic investments in order to boost the local economy or to take the risk and invest in more profitable assets by accepting some risk.

### **Contribution and Limits of the Study:**

In the context of a lack of documentation on the subject of foreign exchange reserves management in Algeria, this work would be a reference for those interested in this topic.

In this work, it is deduced that the data reported by The US Treasury Department about US securities held by Algeria contradicts what some authorities (the Bank of Algeria or the Ministry of Finance) have communicated for years, that a large part of these reserves were invested in American securities. This observation reflects the opacity from which our institutions suffer. Also, the composition of foreign exchange reserves in terms of currencies contradicts what has been communicated before by officials and the media, i.e. that our reserves are constituted of 45% in dollars, 45% in euros, 5% in yen and 5% in pounds sterling in the end of 2010. The last data we were able to get from the Bank of Algeria on the holding of currencies dates back to 2018 with the respective shares of: 60.3% in dollars, 20.90% in euros and 17.81% in pounds sterling.

To achieve our work, we need for documents and reliable statistics. But, there was a lack of data on the composition of foreign exchange reserves in terms of assets in Algeria and the geographical distribution of its investments, and the lack of documentation treating the Algerian case. Therefore, our analysis is purely descriptive; an empirical analysis will be made in the near future.

## **II- Foreign Exchange Reserves and Their Management:**

Foreign exchange reserves have increased significantly since the 2000s. In this section, we will discuss the reasons for their holding, and their recent trend. Then, we will define the management of foreign exchange reserves, its objectives, and the forms of management mentioned in the literature.

### **1. Motives for Holding Foreign Exchange Reserves:**

If in theory, foreign exchange reserves should be large in a fixed exchange system. In a floating exchange rate system, Central Banks no longer need to maintain large reserves to defend their currency's exchange rate, since adjustment is made in the foreign exchange market (Peyrard, 1999). In practice, we are in the opposite situation. Indeed, after the collapse of the Breton Woods system in 1973 and the adoption of exchange rate flexibility, these reserves did not decline as expected. The role attributed to the accumulation of these reserves explains this. In fact, for these countries, the main reasons for holding reserves are to protect themselves against crises and to give markets the insurance that the country is in good financial health and is able to meet its external obligations. This case

referred to as a precautionary motive. Several authors (Aizenman & Lee, 2005; IMF, 2001) support this theory of precautionary motive. These reserves can also be held for mercantilist purposes. It is a voluntary weakening of a country's exchange rate (maintaining a low value of the national currency against a reserve currency) in order to support its export-oriented growth strategy and improve its competitiveness as in the case of China. Several authors defend this motivation in particular (Aizenman & Lee, 2006; Delatte & Fouquau, 2012; Dooley et al, 2003).

## **2. Evolution of the Foreign Exchange Reserves in the World:**

After having experienced some stability in the second half of the 1990s, foreign exchange reserves started to increase rapidly since 2000, particularly since 2004. In 2000, these reserves amounted to about 1935 billions American Dollars (USD), and in 2013, they increased to a record level of more than 11683 billions USD (see Figure (1)). Foreign exchange reserves in emerging and developing countries have been growing faster than those in developed countries. This considerable increase in recent years is due to the trade surpluses achieved during the same period in emerging and developing countries and to higher capital inflows to emerging countries than in the past. Indeed, according to the IMF, China alone held more than 3839.54 billions USD at the end of 2013, about 33% of global reserves.

China, a country whose economic model is based on an export strategy by keeping the exchange rate of its currency against the dollar at a low level (mercantilist motive), and oil-exporting countries: including Algeria and the Gulf countries, which benefited from the rise in average oil barrel prices during this period, have both experienced an increase in their foreign exchange reserves.

In 2014, reserves decreased by 0.76% compared to the previous year and continued to decline in 2016 to reach 1027.41 billion USD. In 2017, reserves began to increase again and in 2019, a reserve amount of 11590.87 billion USD was recorded. This decrease may be due to the devaluation of the CNY/USD rate by 2% in August 2015 (Peltier, 2015). Indeed, the Central Bank of China has decided to sell dollars on the foreign exchange market in order to support the Yuan. In 2015, China's foreign exchange reserves, the highest in the world, decreased by 513.97 billion USD compared to the previous year (according to the IMF website, these reserves are 3859.16 billions USD in 2014 and 3345.19 billions USD in 2015). This decline may also be due to the decline in oil prices from the second half of 2014. The drop in prices in June 2014 was due to the importance of supply, which can be explained by the rapid expansion of unconventional oil production in the United States (the mode of extraction of shale oil and shale gas have a relatively low cost). Moreover, during this period, conflicts in the Middle East and Eastern Europe did not have a significant effect on the supply of oil as Libya and Iraq continued to supply the world oil market. In addition, the conflict between Russia and Ukraine had a marginal effect on the European energy market. For its part, OPEC<sup>1</sup> preferred to maintain its level of production. The decline in demand, due to slower than expected global growth, which has occurred mainly in China and Europe caused also this fall in prices (Baffes et al, 2015; Ellwanger et al, 2017).

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<sup>1</sup> The Organization of Petroleum Exporting Countries (OPEC) is a permanent, intergovernmental Organization, created at the Baghdad Conference on September 10–14, 1960. Currently, the Organization has 14 Member Countries (Algeria, Angola, Congo, Ecuador, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, The United Arab Emirates, and Venezuela); Qatar terminated its membership on 1 January 2019.

### 3. Management of Foreign Exchange Reserves:

This accumulation of reserves is no longer the priority debate of economists but rather the way in which they are managed. Blackman (1982) considers that the management of foreign exchange reserves in developed countries is a tool of exchange rate policy. However, for less developed countries, managing foreign exchange reserves is not so much a means of achieving an optimal level of exchange rates or maintaining orderly trading conditions in foreign exchange markets, but an essential element of any economic development strategy. According to the IMF, "Foreign reserve management is the process through which an adequate amount of external public sector assets are made available and controlled by the authorities to enable them to meet a set of well-defined objectives for a country or a monetary union" (IMF, 2001). In summary, the management of international reserves can be defined as the technique of optimizing a country's external assets to meet their economic needs.

The objectives of the policy on the use of international reserves are: liquidity, security (capital protection) and efficiency. The order of these three objectives depends on the quality of the manager and his avoidance of risk. Traditionally, foreign exchange reserves have largely been denominated in American dollars and invested in American Treasury securities, which are safe assets. The extraordinary accumulation of foreign exchange reserves in recent years has led reserve managers to seek high returns by investing in risky assets such as equities or assets denominated in other currencies: euro, yen, yuan,... A central bank is a public interest institution and, therefore, its objectives must reflect the government's concerns and it must always maintain its image as a credible and solvent institution. In making decisions on the allocation of foreign exchange reserves, the central bank seeks to respect, in order of priority, the following objectives: security, liquidity and yield. However, the investment strategy of the management of foreign exchange reserves by central banks has been modernised in recent years in an attempt to be more optimistic, due to the excess of these reserves recorded during this period. In addition, central banks may also use external managers to better manage their reserves.

### 4. Types of foreign exchange reserves management:

There are two types of foreign exchange reserves management, which are presented below:

#### 4.1. Traditional management:

This management is described as a "buy-and-hold" strategy, in which the investor does not very often change the structure of his portfolio and aims at a return generated simply by buying and holding certain specific securities (Vesilind & Kuus, 2005). Also known as passive or cautious management, this management is based on liquidity: it involves investing reserves in safe assets that are generally governmental and have an excellent rating (AAA).

#### 4.2. Modern management:

Also called active management because of the development of the role of reserves, which is considered as a wealth of the nation that must be developed. Therefore, this management is not only based on the principle of liquidity, but also includes the principle of profitability. This type of management is riskier but consists in investing in assets that generate high-yield such as corporate equities (Feldstein, 1999). In developing countries, this management consists in the financing of the country's economic development projects such as infrastructure financing (Mezui et al, 2013), and

invest these reserves in productive public projects, encourage the development of local and regional financial markets (Elhiraika & Ndikumana, 2007).

Active management also means relatively frequent changes in the portfolio in order to better seize opportunities that may develop in the markets. These opportunities may be related to economic changes in the market, events, or other factors that may affect security prices. An active investor attempts to predict these factors or react and adjust his portfolio in order to generate an excess return over the return of passive management (Vesilind & Kuus, 2005). Several authors (Aizenman & Glick, 2008; Delacour, 2009; Morrison, 2008; Raymond, 2010; and many others) have also discussed the diversification of the use of these reserves by creating sovereign investment funds. These funds will be used mainly to increase a country's wealth and thus benefit the population. A sovereign fund, therefore, allows a country to diversify its cash inflows and to have a long-term investment strategy. Countries that export commodities, such as oil and gas, are among the largest holders of foreign exchange reserves and are among the main practitioners of more active reserve management using sovereign wealth funds. The commodities that these countries export will run out over time and therefore constitute a limited resource. Therefore, prudent economic management and intergenerational equity imply that countries exporting these products should only consume the real return on the stock of realized commodity reserves (Vujanovic, 2011). Several countries have adopted this strategy and have been able to create sovereign investment funds. Several sovereign funds have been created on occasion: Norway, for example, has created a sovereign fund, called the "Norwegian Pension Fund". Hong Kong holds a fund called the Exchange Fund. Another important fund is the Abu Dhabi Investment Authority (ADIA) and many others.

Another classification of foreign exchange reserve management is given below:

#### **4.3. The management of reserves in terms of currencies:**

As Lagerlof & Levy-Ruef (2006) and McCauley & Chan (2014) have mentioned, the composition of the portfolio in terms of currencies depends on several factors:

- ♦ The exchange rate regime adopted by the country allows the choice of reserve currency, if a country has an exchange rate regime that is not a free float, in which case the currency or basket of anchor currencies is decisive in the constitution of this portfolio. Some countries, particularly Asian countries, have pegged their currencies to the US dollar, which justifies the large share of the US dollar in their foreign exchange reserves.
- ♦ The structure of the country's trade and financial flows: The reserve currency may be that of the country or countries with which the country trades most or borrows most. This currency will be used to meet commercial or financial obligations.
- ♦ In addition to these two determinants, there is the management of the risk/return ratio, which allows foreign reserve managers to allocate assets more efficiently, which means to choose the most profitable and least risky currency.

Other authors, such as Gabriele Galati & Philip Wooldridge (2006) in a BIS working paper, argued that at least four factors influenced the emergence of a reserve currency in the world: first, a country's share of world production and trade. Secondly, the macroeconomic stability of the country issuing

this currency. Thirdly, the development of the country's financial markets and, fourthly, network externalities, i.e. the status of a currency depends on its use by others as a reserve currency. An important feature of the main determinants of a currency's international status is that they tend to change slowly over time. These authors found that empirical studies on changes in the foreign exchange composition of foreign exchange reserves and their determinants confirmed the importance of the four factors mentioned above.

Sudden changes in the composition of reserves in terms of currencies should be avoided by central banks as this could cause market disruption. Therefore, it must be gradual and well thought out. IMF data are the most relevant data and give us a progressive evolution over time of these reserves. However, it should be noted that the figures on the composition of foreign exchange reserves are calculated on the basis of allocated reserves<sup>1</sup>, which in 2019 represented about 94% of total world reserves.

The Figure (2), shows us the main currencies that constitute foreign exchange reserves in 2000 and 2019. Since the end of the Bretton Woods regime, the US dollar is no longer the single reserve currency of the international monetary system. Other currencies are added to the dollar, such as the euro, the yen and pound sterling, currencies of countries that are economic and financial powers. Despite this evolution, the dollar remains the dominant currency in the foreign exchange reserve portfolio. When analysing the currency composition of the reserve portfolio, it is clear that the euro's share is increasing while the dollar's share is decreasing, but the dollar's share is still the majority and significant. In 2019, the dollar foreign exchange reserves held by the world's central banks represented 61.64% of the total amount of allocated reserves. The dollar's share of foreign exchange reserves remains above 60 %, while the United States economy now accounts for less than a quarter of global GDP. According to McCauley and Chan, the weight of the dollar in portfolios rather reflects the share of global production from countries with a relatively stable exchange rate with the dollar - the "dollar zone". Despite the weakening of the dollar and the weight of the United States economy, the dollar zone still represents more than half of the world economy. The reserve stocks of the ten main countries holding these reserves are made up of asset classes denominated in US dollars, mainly in Asia. These countries generally have an exchange rate regime, which is based on the pegging of their currency to the US dollar and the structure of their foreign trade, which is dominated by relations with the United States and the dollar zone.

Some countries choose to hold foreign exchange reserves in currencies other than the US dollar. However, the value of these currencies must be stable over time and easily accepted by foreign exporters and creditors. As such, given its economic weight, the euro is the most serious rival to the dollar as an international reserve currency (Paul Krugman et al, 2013). Indeed, since the adoption of the euro in 1999, its share in international reserves has been steadily increasing. It rose from 18.29% in 2000 to 20.35% at the first semester of 2019 (see Figure (2)).

Pound sterling represents in 2019 only 4.43% of total reserves. The share of yen is also low. It is about 5.41% in 2019. And for other currencies, their shares are also marginal. Since June 2013, the IMF expanded the range of currencies in the COFER report by separately identifying the Australian

<sup>1</sup> It refers to data on foreign exchange reserves reported under The Currency Composition of Official Foreign Reserves (COFER).

dollar and the Canadian dollar. For 2019, their respective shares in total allocated reserves are 1.70% Australian dollar and 1.92% Canadian dollar. The IMF also separately identifies the Renminbi (RMB) or Yuan, the Chinese currency, in the COFER database from 1 October 2016. In the first half of 2019, the Yuan's share was 1.97%.

#### 4.4. The management of reserves in terms of asset classes:

The management of foreign exchange reserves in terms of instrument selection has gone through several stages over the past four decades. Mc Cauley and Fung, in their article published in 2003, identify three successive periods of this evolution:

- ♦ First period: Foreign reserve managers began to diversify their portfolios in mid-1970s, reducing the weight of short-term Treasury securities and investing their holdings in bank deposits and money market securities (including instruments issued by the Bank for International Settlements, BIS). This behaviour could be justified by the better returns on bank deposits and other instruments.
- ♦ Second period: It began in the early 1980s, a period characterized by the extension of maturities from short-term to long-term, thus accepting higher market risk and higher returns by investing reserves in long-term US Treasury securities.
- ♦ Third period: It began in the late 1990s, managers expressed a preference for long-term performance and high risk. Treasury securities in long-term and short-term assets decreased while an increase is recorded in investments in bonds of the governmental agencies such as Fannie Mae and Freddie Mac, corporate bonds and equities.

### III- The Management of Foreign Exchange Reserves in Algeria:

Algeria, like several oil-exporting countries, has accumulated foreign exchange reserves since 2003. In this section, we will study the evolution of foreign exchange reserves in Algeria, the management policy adopted by the monetary authorities, and some strategic measures followed by Algeria in the context of this management, namely: the early repayment of external debt and the creation of the Income Regulation Fund.

#### 1. Evolution of Foreign Exchange Reserves in Algeria:

Algeria is a country that produces and exports hydrocarbons. Its economy is very dependent on their revenues. At the end of 2018, hydrocarbons (gas and oil) accounted for more than 93% of total exports, more than 41% of budget revenues and about 22% of GDP. As a result, their macroeconomic balances (fiscal and trade balances) are very sensitive to oil price volatility. Algeria builds up its official foreign exchange reserves by exporting hydrocarbons. Oil prices, whose impact on the balance of payments remains significant, are also a major determinant in the constitution of these reserves.

The Figure (3) clearly shows us the relationship between the two variables foreign exchange reserves and the average price of a barrel of oil, where the two curves move in the same direction in most cases. During the 1990s, the level of these reserves remained low. Reserves were 1.5 billions USD in 1992 and 4.4 billions USD in 1999. Reserves fell compared to 1997, when Algeria recorded a level of 8.05 billions USD. This decrease is due to the external shock of 1998-1999 (fall in oil prices). The year 2000 was the beginning of the rebuilding of official foreign exchange reserves after



this external shock. Indeed, reserves have begun to increase steadily. Official foreign exchange reserves reached 143.1 billion dollar at the end of 2008. Moreover, after the sharp drop in oil prices per barrel in 2009, of more than 37 dollars, Algerian foreign exchange reserves did not decline. They were 148.91 billion USD in that year and continued to grow significantly in subsequent years until they peaked in 2013 at 194.01 billions USD.

The severe drop in oil prices in June 2014, on the other hand, reduced hydrocarbon revenues and had an impact on foreign exchange reserves, which declined. In 2014, Algeria lost about 15 billions dollars with a reserve level of 178.93 billions USD. This decline continued and fell to 62.75 billions dollars at the end of 2019 (Bank of Algeria), representing a loss of 131.26 billions dollars, about 67.66% of Algeria's foreign exchange reserves in six years.

According to the data in Figure (4), the currencies making up the Algerian foreign exchange reserve portfolio in April 2018 are the dollar, the euro and pound sterling with the respective shares of 61.30%, 20.90% and 17.81 %. The choice of currencies reflects the importance of trade relations between Algeria and the USA, the European Union and Great Britain respectively. On the other hand, the Japanese yen was abandoned in 2006, the main cause being the low or even zero interest rates recorded in Japan in recent years, combined with the low level of trade between the two economies.

## 2. Foreign Exchange Reserves Management Policy in Algeria:

For the management of reserves, Algeria has always opted for a prudent reserve management policy, which involves investing these funds in government securities with a modest return and minimal risk while guaranteeing liquidity. The composition of the Algerian foreign exchange reserve portfolio in terms of asset categories is unavailable. The Bank of Algeria does not publish or communicate this information. However, in various speeches and communications made by the former Governor of the Bank of Algeria, more than 80% of foreign exchange reserves are invested abroad. Almost all of these investments, spread between the United States and Europe, are made in sovereign securities portfolios (government securities). The remaining 20% are in the form of deposits with international private banks with an AAA rating (Mebtoul, 2012). However, it should be noted that the majority of these banks were certainly downgraded after the 2008 crisis.

The US Treasury Department publishes information on foreign holders of US public debt securities on its official website and thus makes it possible to determine each country's dollar holdings. Algeria's data had been integrated with those of other oil exporting countries for several years. Recently (in June 2016), data for Algeria have been provided separately from the other countries in this group. However, the data reported contradict what some authorities (the Bank of Algeria or the Ministry of Finance) have communicated for years, that a large part of these reserves were invested in American securities. According to Figure (5), it can be seen that Algerian reserves invested in US securities ranged from 650 millions USD to 780 millions USD from 2002 to 2018. With the exception of these years: 2003, 2004 and 2005, during which the value of the shares amounted to 945, 1627 and 1852 millions USD respectively. These data are very far from the amounts of reserves held by Algeria, more precisely during the last decade. For example, in 2013, the year in which the level of reserves peaked at 194.01 billion USD, reserves invested in US assets represented only 6.693 billions USD or 0.36% of total reserves. 0.693 billions USD is the amount invested directly by Algeria in the American market. The rest can be explained by the indirect investment of these

currencies by countries via foreign private banks (most likely, Algeria's allies, in this case two relevant questions arise: which are these countries and for what reasons they were chosen). As reported by the Bloomberg news site (2016), some countries accumulate treasury bills in offshore financial centres, which means that assets appear under the data of countries other than those that actually hold them. This is the example of China, which, in addition to the 1300 billions USD in treasury bills directly held in February 2016, also it has 143 billions USD invested via Belgium.

Such a practice can have two distinct consequences:

- ♦ Positive: a form of security against freezing its reserves in the event of a tension or crisis between the two countries;
- ♦ Negative: by taking more risks, because the passage through private banks that can go bankrupt, as was the case during the 2008 crisis when banks, which proved to be safe and well rated, marketed risky financial products and cost them huge losses of their assets.

The data in Figure (6) show the different categories of US Treasury securities held by Algeria. The majority of these American securities held by Algeria and published by the US Treasury are short term US Treasury bonds. With the exception of the two years: 2004 and 2005, Algeria has invested much more of its reserves in equities. (Approximately 717 millions USD in 2004 and 948 millions USD in 2005). Such a choice to own short-term debt securities could be explained by Algeria's prudent reserve management policy, which prefers to invest in safe and liquid government securities that may be available at any time.

Also, as part of the management of foreign exchange reserves and during the 2000s, which coincided with the rebuilding of reserves, Algeria took several strategic measures: debt reduction (early payment of external debt) and the establishment of a Fund to regulate hydrocarbon tax revenues. This has allowed our economy to achieve economic growth at a time when many other oil-producing countries have experienced negative growth with inflation.

### **3. Early Repayment of Debt:**

Algeria's external debt has fallen considerably since 2006. This decline coincided with the increase in foreign exchange reserves due to the increase in average oil prices during the same period. This judicious use of reserves to prepay debts is very important to limit countries' dependence on foreign borrowing. Algeria's total external debt, which was 23.35 billions USD in 2003, fell to 5.61 billions USD in 2006 and continued to decline to a historically low level of 3.02 billions USD at the end of 2015. The amount of external debt for the first quarter of 2019 is 3.88 billions USD (See the Figure (7)). But it should be noted that a decrease or exhaustion of these reserves may create a scenario of a return to the use of external loans. As a result, the decline in foreign exchange reserves over the past five years has led us to reflect on how to make better use of them.

### **4 .The Creation of an Income Regulation Fund (Fonds de Régulation des Recettes FRR):**

Created in 2000, this fund aims to finance the treasury deficit following a fall in the price of oil on the world market below a budgetary reference price<sup>2</sup> and the reduction of public debt. It is also a fund that does not invest across national borders, and its strategy is focused on the short term. This

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<sup>2</sup> The reference price of the oil price per barrel is 19 USD per barrel from 2000 to 2007, 37 USD between 2008 and 2016 and 50 USD between 2017 and 2019.

differentiates it from several existing global funds such as: the Norwegian fund "The Norwegian Pension Fund"; the Emirates fund "Mubadala of Abu Dhabi"; and the Qatari fund "Qatar Investment Authority"; and many others that are sovereign investment funds that have invested beyond their geographical borders by placing their reserves in assets around the world and in different sectors and whose strategy is based on the long term.

The revenues of this fund are mainly constituted when the price of hydrocarbons on the market is higher than that provided for in the Finance Act. The Ministry of Finance manages this fund and the existing money in it is in dinars.

As shown in Figure (8), the annual revenues paid into the Income Regulation Fund move in line with the market price of oil. Any increase in price results in an increase in income paid into the fund and any decrease in the price of oil results in a larger decrease in the amount paid into the FRR account.

The Figure (9) shows the amount of money withdrawn from the FRR between 2000 and 2019 and the amount remaining in the FRR account after various payments. From 2000 to 2008, the funds' income was used to repay domestic and external public debt, in 2007, to repay a short-term advance of 608 billions Algerian dinars (DZD) borrowed from the Bank of Algeria. In addition, since 2006, it had been possible to use the FRR to finance the State's budget deficit directly, on condition that the Fund maintained a minimum balance of 740 billions DZD. The revenues of this fund contributed to the financing of a large part of the Treasury's deficit, due to an increase in material spending under the public investment programmes (five-year plans 2005-2009, 2010-2014 and 2015-2019) (The Ministry of Finance, 2019). Since the second half of 2014, FRR's revenues have declined due to the drop in hydrocarbon prices by more than 50%. The balance of the FRR, which was 5563.3 billions DZD at the end of 2013, stood at 2073.6 billions DZD at the end of 2015, a decrease of more than 62% in two years. By the end of December 2016, the FRR balance had fallen to 840 billion DZD, approaching the minimum level authorised by law. With the 2017 Finance Act, it has become legal to draw down all the reserves in the fund and as a result, the fund balance during 2017 and subsequent years is zero. The fund still continues to exist since its resources come mainly from oil taxation and the country still exports hydrocarbons, only its balance is zero.

On the Linaburg-Maduell scale, which measures the transparency of national investment funds, the FRR is classified as a non-transparent fund with the worst score (one point out of 10) (SWFI, 2016). Indeed, the different uses of the income from this FRR are not detailed and this from its creation to its depletion, the corresponding data are grouped together in general accounts.

#### IV - CONCLUSION:

The level of reserves obtained in recent years has exceeded the accepted adequacy levels. This has enabled Algeria to face various external shocks and maintain its external stability so far. However, the decline in oil prices in 2014 and the decline in reserves call into question the current foreign exchange reserve management policy and a new policy should be considered to diversify foreign exchange resources and their use.

As we have just seen, the management of foreign exchange reserves has gone through several phases. Many central banks in managing their reserves were based on the principles of liquidity and safety, but in recent years they have begun to act like private investors, also preferring returns by

investing in risky and less liquid securities. Algeria, for its part, has remained in its traditional management, in short-term assets, mostly in US dollars. This justifies our first hypothesis.

From the date of its creation until 2017, the Income Regulation Fund has played the role attributed to it, namely the payment of public debt and the financing of the budget deficit. In 2017, the fund has dried up and can no longer play this role, of course. Our second hypothesis is only verified in the context of a good oil price situation, in the opposite case, i.e. when there is a drop in oil prices followed by a drop in oil taxation, it is not verified.

Algeria should create an investment fund different from the Income Regulation Fund created in 2000, based on the Norwegian model. This new fund will be an investment fund that will finance projects in other potential sectors such as industry (transformation), agriculture, tourism and will benefit future generations and its role will no longer be solely to finance the budget deficit. This fund will also aim to invest outside the national territory because through this type of the fund, countries can take control of strategic foreign companies in order to enable them to achieve economic development through technology transfer. This is generally achieved during economic crises, the 2008 crisis was a better example. This option could help Algeria to revive and diversify its economy.

Gold can also be an alternative investment of these reserves for a renter economy like Algeria. Gold is an asset that reserves its value over the long term and is considered a safe haven in case of turbulences in other markets (bonds, equities, real estate ...) and unlike the price of oil, the price of gold performs well during periods of economic and geopolitical tension and uncertainty.

On the other hand, the management of hydrocarbon resources should be transparent in order to avoid problems of corruption and theft. Because until now, we do not know the correct distribution of our foreign exchange reserves in terms of financial assets and geographical location. It is, therefore, necessary to publish annually the investments made of these reserves abroad in the reports of the central bank, and thus the Bank of Algeria will gain credibility and transparency with the public.

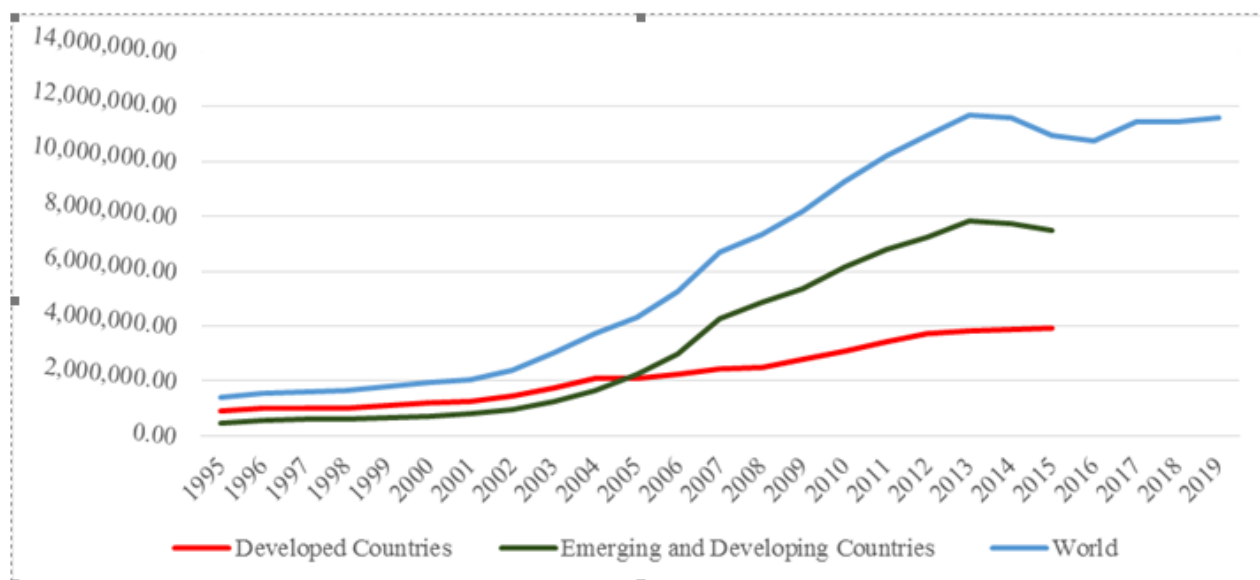
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## Appendices :

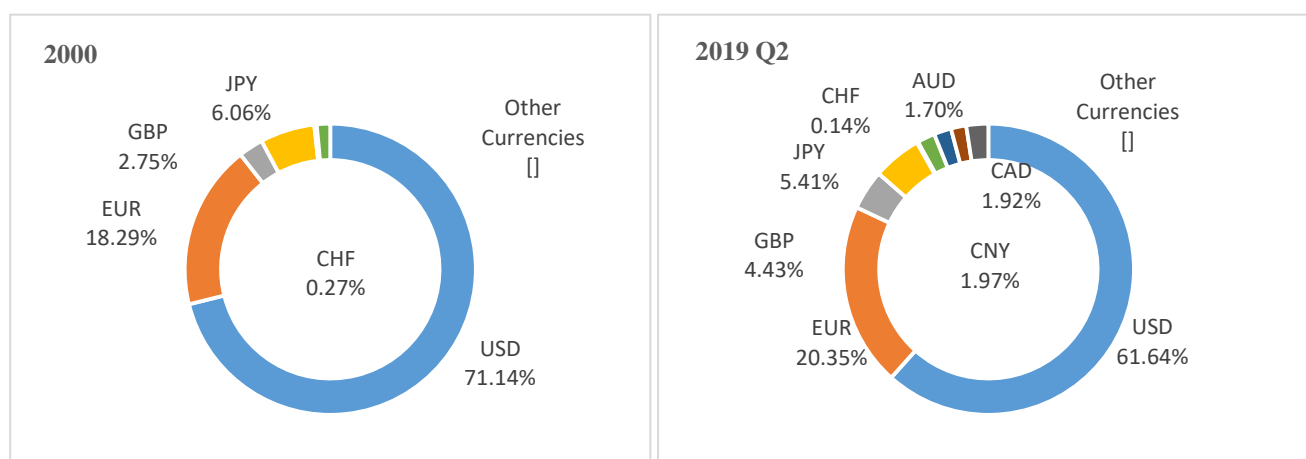
**Figure (1): Evolution of official foreign exchange reserves in the world in millions of US Dollars, [1995-2019].**



The source: International Financial Statistics (IFS) and Currency Composition of Official Foreign Exchange Reserves (COFER), 2019.

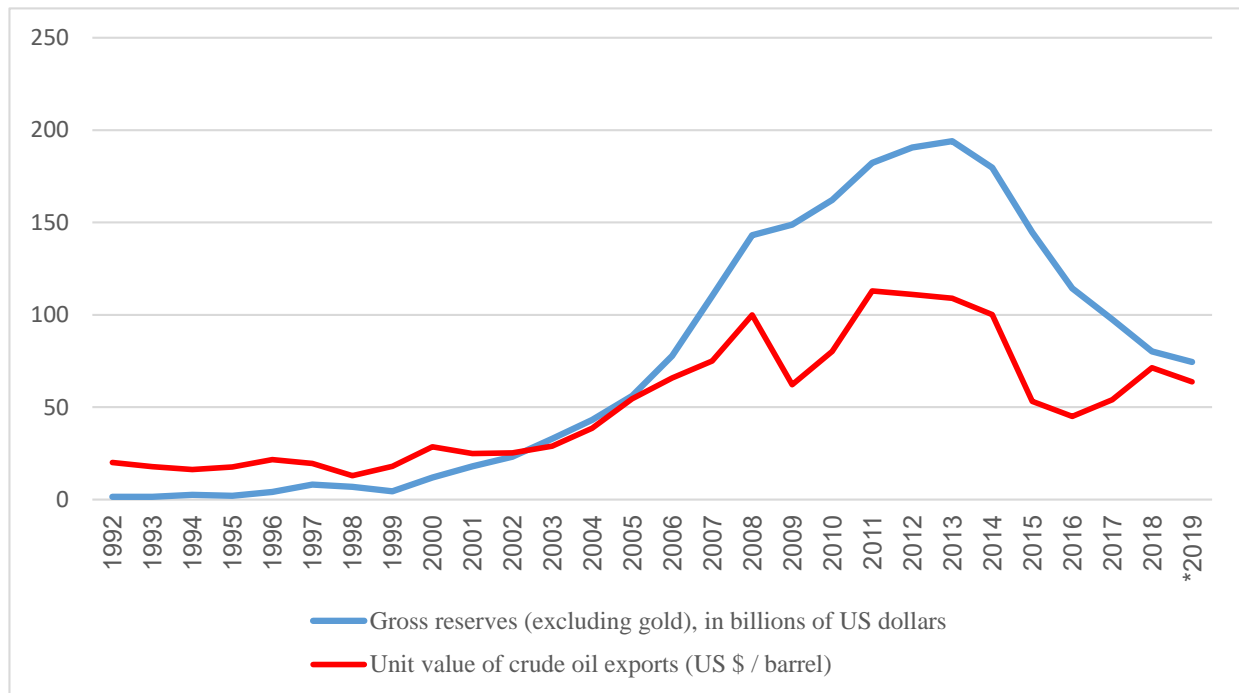
\*The data for 2015 for both categories of countries are for the first quarter of the current year and for the world, data for 2019 are for the first quarter.

**Figure (2): The development of the share of currencies in reserves in the world [2000 and 2019; %].**



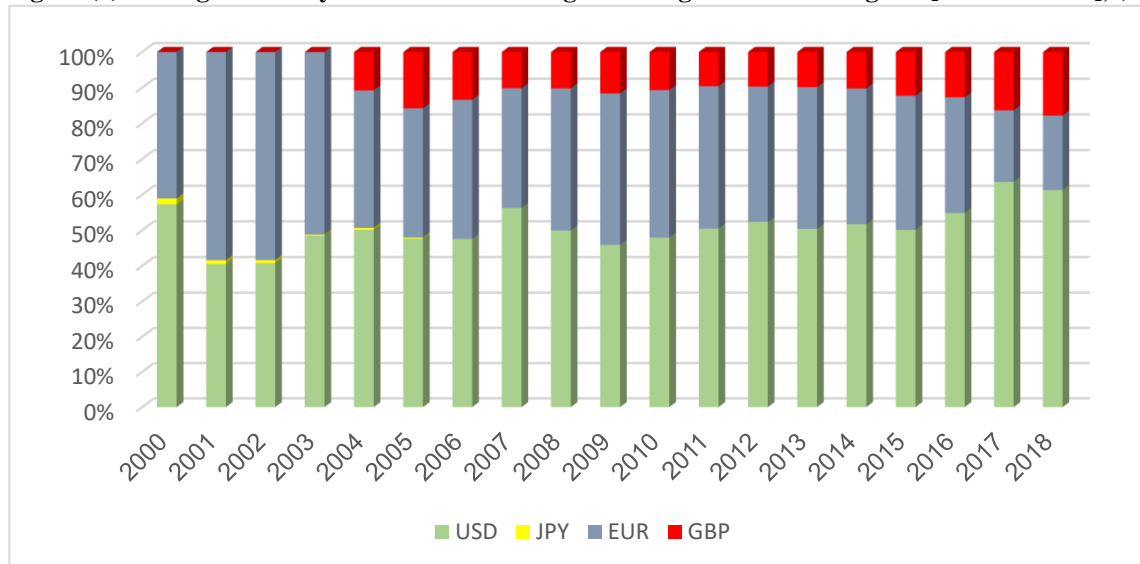
The source: COFER, 2019

**Figure (3): The evolution of foreign exchange reserves in Algeria and oil prices in the world market, [1992-2019 Q1].**



The source: The Bank of Algeria and FMI, 2019.

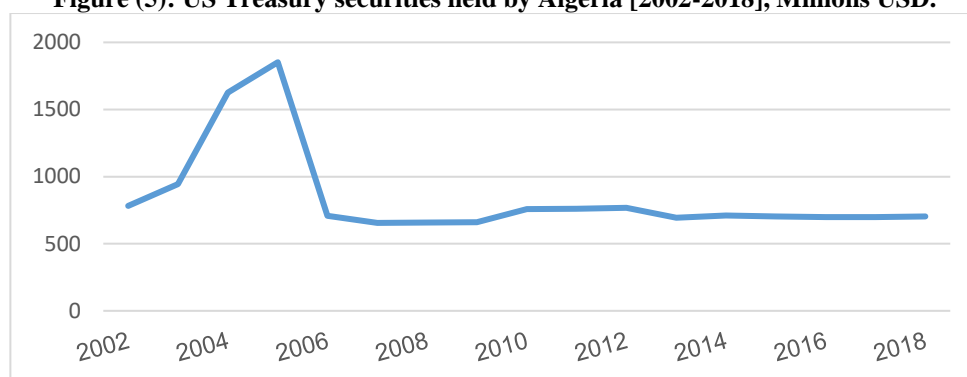
**Figure (4): Foreign currency distribution of foreign exchange reserves in Algeria [2000-2018M4], (%).**



Source: The Bank of Algeria, 2019.



**Figure (5): US Treasury securities held by Algeria [2002-2018], Millions USD.**



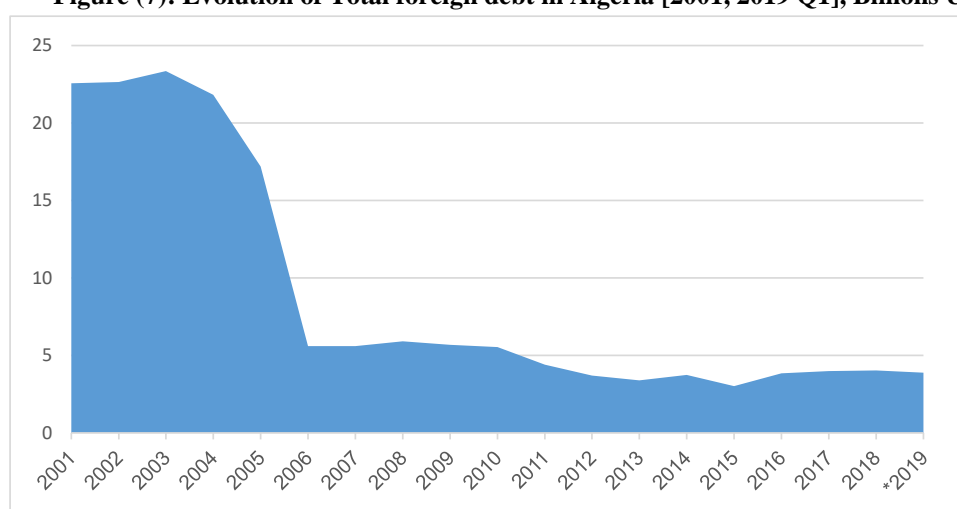
The source: US Department of the Treasury, 2019.

**Figure (6): US Treasury securities of Algeria by asset class in Millions of USD, [2002-2018].**



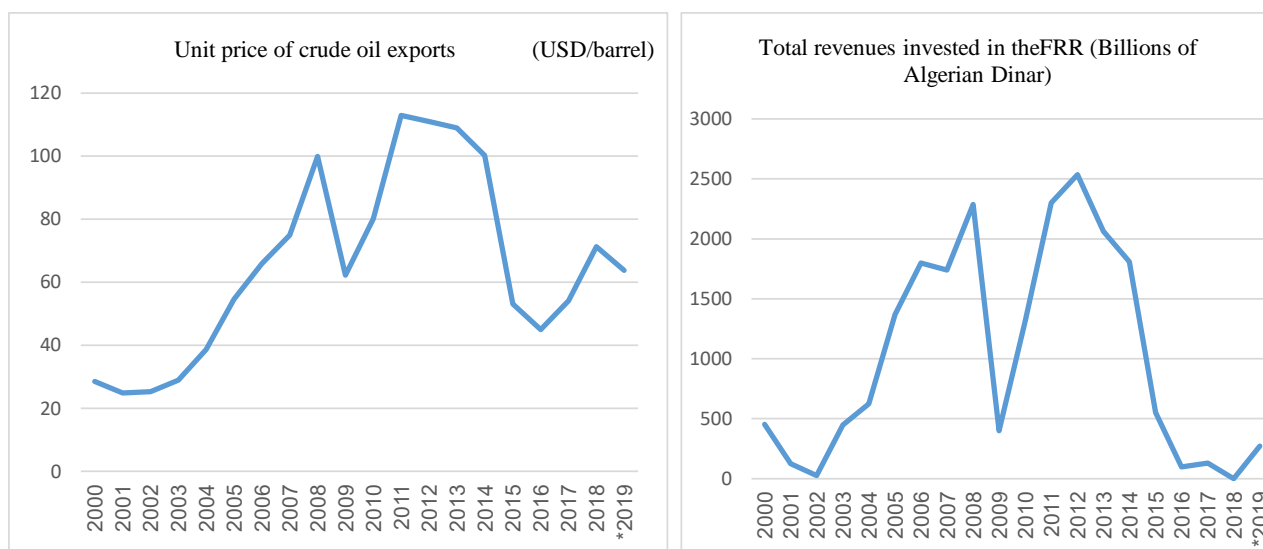
The source: US Department of the Treasury, 2019.

**Figure (7): Evolution of Total foreign debt in Algeria [2001, 2019 Q1], Billions USD.**



The source: The Bank of Algeria, 2019.

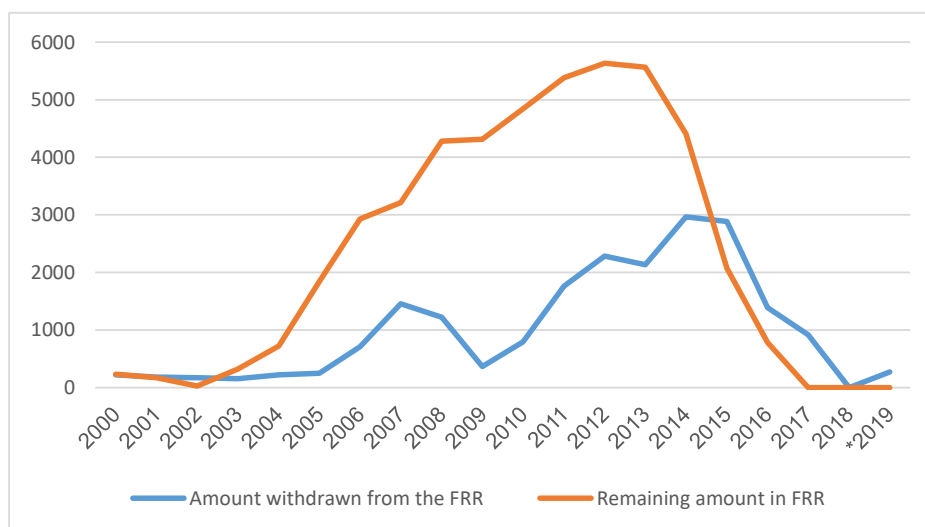
**Figure (8): Evolution of income invested in the FRR fund according to the evolution of oil prices [2000-2019\*]**



The source: The Bank of Algeria and the Ministry of Finance, 2019

\*Projected data for 2019

**Figure (9): The evolution of withdrawals from the FRR and the remaining amount in the FRR [2000-2019\*], Billions of Algerian Dinar.**



The source: The Ministry of Finance, 2019.

\*Projected data for 2019

#### How to cite this article by the APA method:

OUARET Samira, YAICI Farid. (2020), The Management of Foreign Exchange Reserves in Algeria, *Roa Iktissadia Review*, 10 (02), Algeria: University Eloued, pp 75-92

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