

## The Impact of Unconventional Financing on Bank of Algeria Independence

تأثير التمويل غير التقليدي على استقلالية بنك الجزائر

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Received: 27/11/2019 ; Accepted for reviewing: 09/04/2020 ; Accepted for publishing: 03/06/2021

### Abstract:

This study aims to evaluate the impact of unconventional financing on bank of Algeria BA independence, and assessing BA independence since 1990 until the amendement of the money and credit law 2017. results show that that BA had a significant legal independence according to the money and credit law of 1990, lower governor's turnover rate and relatively less independence concerning political vulnerability using Cukierman methodology, however this does not always imply a high level of independence. we find that unconventional financing had a negative impact on BA independence.

**keyword:** Bank of Algeria independence; unconventional financing.

**JEL classification code :** XN1, XN2

**ملخص:** تهدف الدراسة إلى تقييم مدى تأثير اللجوء إلى التمويل غير التقليدي على استقلالية بنك الجزائر، وتقييم استقلاليته منذ سنة 1990 إلى غاية تعديل قانون النقد والقرض سنة 2017.

وقد أظهرت النتائج تمتع بنك الجزائر باستقلالية قانونية معتبرة ضمن قانون النقد والقرض 90-10، كما تميز باستقلالية فعلية ظهرت من خلال مؤشر معدل تغير المحافظ واستقلالية أقل نسبيا من حيث الضعف السياسي للبنك المركزي باستخدام منهج Cukierman، بالرغم من أن هذين المؤشرين غير كافيين للدلالة على استقلالية البنك المركزي.

توضح النتائج انخفاض استقلالية بنك الجزائر نتيجة اللجوء إلى التمويل غير التقليدي.

**الكلمات المفتاحية :** استقلالية بنك الجزائر ؛ التمويل غير التقليدي .

**تصنيف JEL :** XN1 ، XN2

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## **1. Introduction :**

The central bank CB independence grant monetary policymakers more freedom from the political process, government influences and pressures, in order to achieve central bank objectives, mainly to achieve better economic performance, especially stabilizing inflation rates at their target levels. Practicing monetary policy in this context allow central banks to be effective in achieving the main objectives set in CB charter.

In Algeria, unconventional financing was resorted in the amendment of the Money and Credit Law 2017, which included the ability of the Bank of Algeria BA to purchase securities directly from the treasury for the period of five years to finance both of the needs of the treasury, the internal public debt and the National Investment Fund. the adoption of unconventional financing indicates the additional new role played by the Bank of Algeria During the program implementation period from 2017 to 2019. In this study we try to discuss the main question:

**What are the scope impacts of unconventional financing implementation on the bank of Algeria independence?**

**Sub-questions:** we devide the main question to the following sub-questions:

- What are the levels of Legal independence granted to the bank of Algeria based on different amendement law of money and credit n° 90-10?
- what changes in BA actual independence that can be seen during the period between 1990 and 2018?

**Hypotheses:** in following we propose some hypotheses:

- the implementation of unconventional financing had a negative impact on BA independence
- Money and credit law n° 90-10 attribute considerable legal independence to the Bank of Algeria;
- actual independence differ from the legal BA independence;

**Research objectives:** the study aims to achieve the following objectives:

- evaluating BA legal and actual independence;
- investigate the impact of unconventional financing on BA independence

**research model:** to answer the main question of our study we follow Cukierman methodology, using a descriptive analytical method.

### **Literature review:**

- ✓ **Sikken Bernd Jan, de Haan Jakob (1998), Budget deficits, monetization, and central bank independence in developing countries, *Oxford Economic Papers*, 50, 493-511.**

The purpose of the study is to examine first, the relationship between CB independence and government budget deficit in developing countries, and second, analyse whether CB independence affects the monetization of deficit using simply regression of the average budget surplus on various measures of CB independence, and regression the money growth on current and past values of the budget surplus. Using data of 30 developing countries in the period of 1950-1994.

The study concludes that only if the turnover rate of CB governor's and the political vulnerability index is used as a proxy for CB independence monetary accommodation of deficits is negatively related to CB independence in the case of developing countries.

- ✓ **Ben Ltaief Leila (2016), Indépendance des Banques Central et Politique Monétaire Non Conventionnelles : Investigation Empirique Lors de la Crise Financière 2008, *Maghreb Review of Economic and Management*, 03 (1).**

The studies try to examine the relationship between the degree of CB independence and the use of unconventional monetary policy instruments during the economic crisis. Studying a panel sample of 18 central banks of three Groups of countries: G5, emerging countries and developing countries during the period 2006-2013 characterized by financial crises. The study concludes that the CB independence reduces the use of exceptional instruments in the G5 countries. For emerging countries, central banks do not rely on those instruments in the purpose of maintaining CB independence. While developing countries, because

of the weakness of its financial markets, the CB independence is vulnerable to political pressures and it can be sacrificed.

✓ **Maxwel J.Fry (1998), Assessing central independence in developing countries: do actions speak louder than words?, *Oxford Economic Papers*, 50, 512-529.**

The study investigate the fiscal dominance hypothesis of CB independence, and whether the size of government deficit and methods by which it is financed determine CB independence in developing countries using a sample of 70 developing countries over the period of 1972-1995 following three stage least square method. The researcher conclude to support the fiscal dominance hypothesis, that the CB independence in developing countries is determined by both the size of government's deficit and the methods by which it is financed.

To achieve the study goal, we divide our study in the following way: first section, we discuss definitions and measurement of central bank independence. As for the second section it exposes legal overview of the BA independence, the third section present the calculation results of the legal and actual BA independence. The fourth section is consecrated to the results explanation and finally, finally the fifth concludes.

## **2. Definitions and measurement of central bank independence :**

Central bank independence took a large place in economic and monetary debate. Literature include concepts and methodologies to define and evaluate CB independence, thus explain its importance. In following an overview in this literature:

### **2.1. Definitions and importance of central bank independence:**

Central bank independence had a greater importance starting with 1990's, most country insulating monetary policy from the political process giving central bank more autonomy in the conduct of monetary policy. According to Cukierman 1994 there is several reasons that lead to a shift towards a more independence: the exchange rate experiences result that designation of institutions capable of increasing the commitment over the price stability became crucial; independence is a precondition for the adherence to the euro zone; the correlation proved

between independence and inflation, and the fact that highly independent CB like the Bundesbank and the Swiss National Bank achieve a good result about price stability. (Cukierman, 1994,p1446).

Central bank independence takes importance of the fact that it allows central bank to conduct an efficient monetary policy avoiding all political pressures. In the economic literature different definitions of the concept of CB independence can be found.

Central bank independence can refer to political and economic independence. Grilli, Tabellini, Masciandaro made a distinction between these two meanings. By political independence they mean a central bank's ability to pursue the goal of price stability unfettered by formal or informal instructions emanating from the politicians. On the other hand, economic independence means that a central bank has unlimited freedom to determine all monetary policy transactions that lead to changes in its operating targets (Bofinger, 2006, p 209). However, Debelle and Fischer define independence distinguishing between goal independence and instrument independence. Goal independence means that a central bank is free to choose its goals or at least free to decide the actual target values for a given goal, and has instrument independence when it is given control over the instruments of monetary policy and allowed to use them (Debelle & Fischer, 1994, p197). In another point of view, personal independence can be considered as a component of central bank independence, which requires that the decision-making body of a central bank be in a position to resist formal directives as well as informal pressure from the government (Bofinger, 2006, pp. 210,213).

Empirical studies investigate the effect of central bank independence on economic performance, showing that CBI contributes to achieving less inflation variability and that is a crucial precondition to inflation targeting adoption and successful strategy implementation. There is empirical evidence showing a significant negative correlation between CB independence and average inflation. An independent central bank has the ability to achieve a lower inflation rate than it had been proved in Bade and Parkin 1982 study. In investigating the relationship between central bank independence and economic performance, Alberto Alesina, Lawrence H. Summers 1993 concluded that the monetary discipline associated with central bank independence reduces the level and variability of inflation but does not have either

large benefits or costs in terms of real macroeconomic performance (Alesina & Summers, 1993, p 159).

Central bank independence in developing countries is influenced by the fiscal situation that dominates other areas of macroeconomic policy, as bigger a country deficit the more a government resort to the central bank borrowing at zero cost or borrowing at below market interest rates by forcing debt down the throats of captive buyers, primarily commercial banks, as form of financial repression. That is, the fiscal dominance is associated with less central bank independence, in result the size of deficit and the methods by which it is financed determine the extent of central bank independence in a country (J.Fry, 1998, p513). An independent central bank may serve to insulate the economy from political cycles either by preventing pre-election manipulation of monetary policy (Alesina & H. Summers, 1993).

## **2.2. Measuring central bank independence :**

There exist different methodologies for assessing central bank independence, using central bank index developed by GMT 1991, and methodology used by Cukierman 1992, where both focused on legal CB independence, and later the turnover of Central Bank governor's in Cukierman 1995 research paper. Furthermore, central bank independence and inflation targeting index developed by Florin Cornel Dumiter.

### **A. GMT (1991) index:**

Grilli, Masciandaro and Tabellini considered both of political and economic independence in measuring CB independence, and assigns to the CB's one 1 point for each satisfied criteria from the 16 criteria's index .

- Political independence aim at the ability to select the final objectives of monetary policy. Its assessment focus on three main areas :
  - The appointment procedure and tenure of the CB board ;
  - The functional relationships that link the CB to the government ;
  - The CB's formal responsibility in the conduct of monetary policy.
- Economic independence aims at measuring the CB's independence in selecting instruments, it focuses on the main areas :
  - the degree of availability of CB credit to the government;

-the nature of monetary instruments over which monetary authorities has full control (Laurens, Arnone, & Segalotto, 2009, p125).

### **B. Cukierman (1992) index :**

Cukierman 1992 methodology in one of the most comprehensive index, this index assess the legal independence as an essential component of actual independence, and it indicates what is the degree of independence that the legislators meant to confer on the central bank.

For coding the legal central bank independence, Cukierman rely on the legal characteristics of the central bank as stated in its charter, viewed in 4 four dimension as follows:

- The appointment, dismissal, and term of office of the chief executive officer of the bank (governor) ;
- The policy formulation, which concern the resolution of conflicts between the executive branch and the central bank over monetary policy and the participations of central bank in the budget process ;
- The central bank objectives;
- Limitations on the ability of the central bank to lend to the public sector .

Cukierman index were built up from 16 different legal variables, each coded on a scale of 0 (lowest level of independence) to 1 (highest level of independence), the codes are set so that a higher number indicates that central bank have greater autonomy.

The legal independence are just a part of the assesment of CB independence, Cukierman seek to determine the actual independence, by adding turnover of central bank governors, which is an indicator based on the presumption that at least above some threshold, more rapid turnover of central bank governors indicates a lower level of independence. Indeed, more rapid turnover presumably creates dependence. if high turnover rate, the tenure of the central bank governor is shorter than that of the executive branch, which makes the governor susceptible to influence by the executive branch, and discourages him from implementing longer term policies, especially those that would extend beyond the election cycle. Instead, a low turnover does not necessarily imply a high level of central bank independence (Cukierman, Webb, & Neyapti, 1995, p 363).

Another indicator of actual independence in Cukierman 1992 methodology, was based on a questionnaire answered by specialists in 23 countries, a questionnaire was sent to a nonrandom sample of specialist on monetary policy in various central banks. The question focus on the practice rather the law, and so the responses help to identify divergence between actual and legal independence, particularly when the the divergence is large (Cukierman, Webb, & Neyapti, 1995, p367).

Three indicators was used by Cukierman 1992 to assess the CB independence: legal independence index; turnover rate and questionnaire. While Cukierman shed the light on measuring the tunover rate of governor with relation on a political change.

Computing the frequency of central bank turnover in intervals at various lags from political changes was important for assessing the size and duration of the effect of political changes on the propensity for central bank turnover, Cukierman 1995 propose a measure of political influence, by computing an index of political vulnerability of the central bank, defined as the fraction of political transitions that are followed promptly by a replacement of the central bank governor (Cukierman & Webb, 1995, p405), as follow :

$$V(i) = \frac{\text{Number of replacements of the CB governor within } i \text{ month following a political transition}}{\text{Number of political transitions}}, \quad i=1,6$$

### **C. Central bank independence and inflation targeting index :**

Florin Cornel Dumiter (Cornel, 2009, p41) try to develop a new index for central bank independence and inflation targeting regardless of the differences between de jure and de facto independence, in order to measure independence both for developed countries and emerging countries based on some legal aspect and some actual practice and behaviour of the central banks. The index refer to the idea that the main correlation between central bank independence and inflation targeting represent two important aspects : transparency and accountability. The index is constructing as a sum of numerical values assign to thirty eight institutional arrangements both in law and practice of central banks:

- Nine attributes each for political and legal central bank independence ;



- Fifteen attribute for central bank governance and conduct of monetary policy ;
- Fourteen attributes for central bank transparency and accountability.

### **3. Bank of Algeria independence: legal overview:**

In following we attempt to have an overview of the money and credit law of 90-10 and its different amandement in the period of 1990 to 2019:

#### **3.1. Money and credit law:**

##### **A. Money and credit law 90-10 dated 14/04/1990:**

The banking reform provided by the Law n° 90-10 dated April 14, 1990 relative of money and credit represents the most important reforms known to Algeria in the economic and banking fields, especially monetary. The law gave the Central Bank of Algeria wide powers that did not know since independence of Algeria as a "National institution with moral personality and financial independence" and deals with others in the name of "Bank of Algeria", considering "the central bank trader in relations with others", in the concept of articles 11-12-13 of Law n° 90-10.

The Bank of Algeria is headed by a governor with assistance of three deputies, the Money and Credit Board serves as the Board of Directors of the Central Bank, as well as observers. The Governor is appointed by a decree of the President of the Republic for a period of 6 years and can be renewed once. He is also dismissed in case of legally proven health disability or a grave error by decree of the President of the Republic only. he can not exercise any other activity or profession during the term of office.

The Money and credit Board, which also serves as the Board of Directors, autorized to the functions of monetary authority and carry out monetary policy formulation, consisting of the Governor as Chairman and the three Deputies as members, as well as three senior officials appointed by decree of the Prime Minister (Article 32). The law indicates that in the event of any disagreement between the Bank of Algeria and the Government, the final word shall be of the Central Bank.

The Money and Credit Law n° 90-10 specifies the objectives of the Bank of Algeria in Article 55 of the Bank, but its mission in the field of money, credit and exchange rate is to provide the best conditions for

regular growth of the national economy and maintain it by developing all national production capacities while ensuring the internal and external stability of the money. This statement shows a set of conflicting objectives such as the employment and internal stability of money. The law does not explicitly mention the objective of price stability while including the internal stability of money.

In the area of lending to the Central Bank of the Government, Law 90-10 provides for the possibility of granting the treasury advances for a maximum of 240 consecutive or non-consecutive days during one year on a contractual basis and up to a maximum of 10% of the normal state revenues recognized during the previous fiscal year. The Bank of Algeria may intervene in the money market within the conditions specified by the Money and Credit Council, in particular the seller and purchaser, especially public bonds maturing in less than six months, but in no case shall such transactions take place in the primary market (Article 76) ( *بنك الجزائر، قانون النقد والقرض، 10-90* ).

**B. Order 03-11 dated 26 /08/ 2003:**

By virtue of Ordinance n° 01-01 dated 27/02/2001, the Money and Credit Law 90-10 was amended, mainly with regard to the separation of the Board of Directors of the Bank of Algeria from the Monetary Authority. The Money and Credit Board consists of the members of the Board of Directors of the Bank of Algeria in the sense of Law 90-10, and additional three persons chosen in the base of their competence in economic and monetary field, they are appointed by a decree of the President of the Republic.

Within the separation between the Board of Directors of the Bank of Algeria and the Money and Credit Board, Order n°03-11 amending law n°90-10 and dated 26/08/2003 specified the members of the Board of Directors consisting of the Governor and his three deputies, in addition to three employees appointed by a decree of the President of the Republic. In addition to two persons selected by virtue of their competence in economic and monetary field. they are appointed by decree of the President of the Republic. The law didn't provide the term of the appointment of the Governor, who is appointed by decree of the

President of the Republic for an indefinite period in the concept of this order.

It also included modification to the objectives of the monetary policy, stating that the mission of the Bank of Algeria in the fields of money, loan and exchange rate is to provide and maintain the best conditions for rapid growth of the economy while ensuring the internal and external stability of the money, without stating the objective of employment.

With regard to the limits of government lending, Order n° 03-11, in addition to the provisions of Law n° 90-10, added the authorization of the Bank of Algeria to grant the treasury an advance directed exclusively to the active management of the external public debt, and the order also ensures that the modalities of the implementation of the payment is determined by the maturity of the payment through an agreement between the Central Bank and the public treasury and this is done after hearing the Council of Money and Credit and notify the President of the Republic accordingly (11-03 *بنك الجزائر ، الأمر*).

### **C. Order n°10-04 dated 26/08/2010, amending and supplementing order n°03-11:**

In order n° 10-04 of 26/08/2010, the objective of price stability was established as an objective of monetary policy in addition to provide the best conditions in the fields of money, loan and exchange rate and maintain rapid growth of the economy while ensuring monetary and financial stability (04-10 *بنك الجزائر ، الأمر*).

### **3.2. Unconventional financing in the modified money and credit law of 2017 :**

Unconventional Financing was launched in 2017 through the amendment of Money and credit Law presented in 17-10 law dated 11/10/2017 which completes Order n°03-11 dated 26/08/2003. Article 45 bis included an exceptional purchase of treasury securities by the Bank of Algeria for a period of 5 years directly from the Treasury. whose main purpose is to contribute:

- to cover treasury financing needs;
- Financing of the internal public debt;
- Financing the National Investment Fund.

The mechanism would culminate with major structuring reforms especially economic and budgetary reforms. And led in end of the period in which the mechanism is planned to public treasury and balance of payments equilibrium (الجريدة الرسمية، القانون 10-17).

Unconventional financing mechanism consist mainly of mobilizing funds from the Bank of Algeria for issuing government bonds with different maturities of 5 to 30 years at a single interest rate of 0.5% (بنك الجزائر، 2017، ص18) until January 2019, the non-conventional financing program included:

**Table1: Unconventional financing program until January 2019**

| Nature of financing  | Amounts           |
|--|-------------------|
| Financing the public deficit   | 2470 BILLION DZ   |
| Clearing the debt of Sonelgaz, Sonatrach's treasury debt and repayment of the National Growth Loan | 1813 BILLION DZ   |
| Financing the CNR's debts  | 500 BILLION DZ    |
| The National Investment Fund and Financing AADL Program and CNR Deficit                            | 1773.2 BILLION DZ |

**Source:** BANQUE D'ALGERIE, *Point de situation sur le financement nonconventionnel*, 2019, p6.

The total amount mobilized until the end of January 2019 is 6556.2 billion dinars DZ, which was traded in the national economy of the total amount represents 3114.4 billion dinars DZ (BANQUE D'ALGERIE, 2019, p6).

#### **4. Assessing bank of Algeria independence :**

Based on Cukierman methodology, our study consist first, on calculating the legal and actual indicators of the BA independence, and latter evaluate the impact of adopting the unconventional financing mechanism on BA independence.

##### **4.1. Legal independence**

Legal independence indicates what is the degree of independence that legislators give to the central bank, the laws and charters of central banks vary concerning their focus, details. Assessing central bank independence requier ranking central bank charter. using CB independence index faces difficulties to evaluate it, especially the

interpretation of the statement, Cukierman believe that it is difficult to do and inevitably requires subjective judgement.

In the case of the bank of Algeria, we rely on laws of money and credit n°90-10 , n°03-11, n°10-04 and n°17-10 using the Cukierman 1992 index as following :

**Table 2: measure of Bank of Algeria legal independence**

| Description of variables                           | weigh        | 90-10         | 03-11         | 10-04         | 17-10        |
|--|--------------|---------------|---------------|---------------|--------------|
| <b>1.Chief executive officer CEO</b>               | <b>0.20</b>  | <b>0.366</b>  | <b>0.216</b>  | <b>0.216</b>  | <b>0.216</b> |
| - Term of office                                   |              | 0.00          | 0.00          | 0.00          | 0.00         |
| - Who appoint CEO                                  |              | 0.00          | 0.00          | 0.00          | 0.00         |
| - Dismissal  |              | 0.83          | 0.83          | 0.83          | 0.83         |
| - May CEO hold other offices in government         |              | 1.00          | 1.00          | 1.00          | 1.00         |
| <b>2.Policy formulation</b>                        | <b>0.15</b>  | <b>0.15</b>   | <b>0.15</b>   | <b>0.15</b>   | <b>0.1</b>   |
| -who formulate monetary policy                     |              | 1.00          | 1.00          | 1.00          | 1.00         |
| -who has final word in resolution of conflict      |              | 1.00          | 1.00          | 1.00          | 0.00         |
| -role in the government's budgetary process        |              | 1.00          | 1.00          | 1.00          | 1.00         |
| <b>3.Objectives</b>                                | <b>0.15</b>  | <b>0.00</b>   | <b>0.00</b>   | <b>0.09</b>   | <b>0.09</b>  |
| -central bank objective                            |              | 0.00          | 0.00          | 0.60          | 0.60         |
| <b>4.Limitation on lending to the government</b>   |              | <b>0.0425</b> | <b>0.0383</b> | <b>0.0383</b> | <b>0.010</b> |
| -advances ( limitations on nonsecuritized lending) | <b>0.15</b>  | 0.67          | 0.67          | 0.67          | 0.33         |
| -securitized lending                               | <b>0.10</b>  | 0.67          | 0.67          | 0.67          | 0.00         |
| -term of lending                                   | <b>0.10</b>  | 0.67          | 0.33          | 0.33          | 0.00         |
| -potential borrowers from the bank                 | <b>0.05</b>  | 1.00          | 1.00          | 1.00          | 0.33         |
| - limits on central bank lending                   | <b>0.025</b> | 0.33          | 0.33          | 0.33          | 0.00         |
| -maturity of loans                                 | <b>0.025</b> | 0.67          | 0.67          | 0.67          | 0.33         |
| -interest rate on loans                            | <b>0.025</b> | 0.25          | 0.25          | 0.25          | 0.25         |
| -central bank prohibited from bying or selling     | <b>0.025</b> | 1.00          | 1.00          | 1.00          | 0.00         |
| <b>results</b>                                     |              | <b>0.558</b>  | <b>0.404</b>  | <b>0.494</b>  | <b>0.416</b> |

*Source: the author's calculations.*

#### **4.2. Actual independence :**

For assessing the actual independence of the Bank of Algeria, we follow the Cukierman 1995 methodology for measuring the governor's turnover rate and political vulnerability. First we present the results of governor's turnover rate in the following table:

**Table 3 : Bank of Algeria governor's from 1990 to 2018**

| period    | governor                             | Turnover    | Average |
|-----------|--------------------------------------|-------------|---------|
| 1990-1992 | Abderrahmane Elrostomi<br>Hadj Nacer | <b>0.5</b>  | 0.13    |
| 1992-1998 | Abdelwahab Karmane                   | 0.11        |         |
| 1998-2001 | Abdelwahab Karmane                   |             |         |
| 2001-2016 | Mohamed Laksaci                      | 0.06        |         |
| 2016-2019 | Mohamed Loukal                       | <b>0.33</b> |         |

*Source: the author's calculations.*

To measure the political vulnerability of the Bank of Algeria, we calculate the Central Bank's political vulnerability rate based on the Cukierman 1995 methodology by observing the changes of the Governor of the Bank of Algeria within periods of political changes considered in this study as the political changes for the Algerian government.

**Table 4 : political vulnerability of the Bank of Algeria**

| <b>Political changes</b>   | <b>Governor's changes</b>   | v(i=1)      | v(i=6)      |
|--|---|-------------|-------------|
| 05/06/1991 –Sid-Ahmed Ghozali<br><b>19/07/1992 – Belaid Abdessalem</b><br>21/08/1993- Redha Malek  | 15/04/1990- Abderrahmane<br>Elrostomi Hadj Naser<br><b>21/07/1992- Abdelwahab<br/>Karmane</b> |             |             |
| 11/04/1994- Mokdad Sifi<br>31/12/1995- Ahmed Ouyahia<br>15/12/1998- Ismail Hamdani<br>23/12/1999- Ahmed Benbitour                        | 22/07/1998- Abdelwahab<br>Karmane (renowble term)   |             |             |
| 27/08/2000- Ali Benflis<br>05/05/2003 –Ahmed Ouyahia<br>24/05/2006- Abdelaziz<br>Belkhadem<br>23/01/2008- Ahmed Ouyahia                  | 02/06/2001- Mohamed<br>Laksaci  |             |             |
| 03/09/2012- Abdelmalek Sellal<br>24/05/2017- Abdelmadjid<br>Teboune<br>15/08/2017- Ahmed Ouyahia<br><b>11/03/2019- Noureddine Bedoui</b> | 31/05/2016- Mohamed<br>Loukal<br><br><b>Amar Hiouani ( interim)-<br/>20/04/2019</b>           |             |             |
| <b>Central bank vulnerability</b>  |   | <b>0.13</b> | <b>0.13</b> |

*Source: author's calculation using data from Algerian Government, Bank of Algeria.*

### **5.Study Results :**

According to our calculation of legal and actual independence using Cukierman methodology. as shown in Table2 we notice that the Law of money and credit n° 90-10 attribute a great independence to the Bank of Algeria, the indicator of legal independence was equal to 0.558, and decreased relatively to the value of 0.404 in the amendment of the Law of money and credit in the Order n° 03-11, this is due to the term

appointment of the Governor and also because of granting the Treasury an exceptional advance exclusively for the active management of external public debt. While within the order n° 10-04, the value was 0.494, we can explain it as a result of the adoption of price stability objective as a goal of the monetary policy of BA. After the amendment of money and credit law n°17-10 that allow unconventional financing, the value of legal independence decline to 0.416.

While our finding about actual independence show according to the results in the table3, that the first period was characterized by a rapid change of governor, wich explain a higher turnover rate, while results during the period 1992 -2001 was at a value of 0.11 wich explain lower turnover. Then a value of 0.06 during the period 2001-2016.with the period between 2016-2019 the turnover rate was 0.33 that is relatively a higher turnover in this period when unconventional financing had been adopted. A total average of governor turnover is equal to 0.13, indicating a significant level of actual independence. However, In some cases a lower turnover rate does not always imply a high level of actual independence and may not indicate that a central bank governor cannot conflict with political authorities.

Result in table 4 describes the political vulnerability of the Bank of Algeria during the period 1990-2019, the value calculated is 0.13. we note that the first change of the Bank of Algeria Governor's that followed a political change of the Prime Minister was in 1992, as this change came two years after the appointment of the BA Governor's, whose term of office in the Money and credit Law n°90-10 was set at 6 Years, instead this change was been within one month of a political transition. The results show the impact of the political transition on the Bank of Algeria and reveals a political weakness of the Bank of Algeria during this period. While all the Governor's changes in the period 2000-2017 were out of the political transition period. The second change was in 2019 after a month of a political transition wich reflect the effect of adopting unconventional financing in decreasing BA independence, because of financing budget deficit lead to more weakness in CB actual independence consequently it result on political vulnerability of central bank .



Results of both BA legal and actual independence during the period started for unconventional financing according to the law n°17-10 to 2019, shows that independence indicator's decline relatively.

We note that implementation of unconventional financing impact negatively legal and actual independence.

## 6. Conclusion :

In this paper, our purpose was first, to evaluate BA independence during the periode from 1990 to 2019. second, and essentially investigate the impact of unconventional financing on BA independence. following Cukierman methodology, we found that the amendement of money and credit law in 2017 with the purpose of unconventional financing implementation, had a negative impact both on legal and actual BA independence. Consequently, imply less commitement on price stability objective, and lead to less effective monetary policy in achieving its objectives mainly reducing inflation.

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