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Basel Agreements in the Efficiency of Algerian Banks

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Moussouni Habiba, https://orcid.org/0009-0008-6642-8604

Lecturer grade A, University Abu Baker Belkaid- Tlemcen, Algeria

Email: moussouni.h13@gmail.com

Abstract. *The recent crisis has attracted much interest on the part of economists and prudential authorities. It resembles in some aspects: over-indebtedness widespread panic caused by the sharp devaluation of financial assets, poor management and prediction of crises by the prudential rules of Basel II. The Algerian banking authorities are engaged in a series of reforms of independence till the nowadays, to modernize their banking sectors. They include reforms to the restructuring of the liberalization and privatization of public banks, the establishment of prudential laws and systems of risk management and the strengthening of the powers of supervision. The aim of this article is to learn about the adequacy of the Basel agreements to achieve the basic ideas of reducing risks, stabilizing the financial sector, and maintaining its level of efficiency. Add to, the central idea is to show that our commercial banks are under the obstacle of the presence of the State in a very strong way in the shareholders of the banks, which weakens the regulatory governance. This obstacle more other political constraints preclude the application of the second Basel accord. This was done by first evaluating the different Basel agreements imposed internationally to banks by the Prudential Basel Committee authorities to avoid crises or at least prevent. Secondly the situation of Algerian bank compared to us neighbors and they are forced or the reasons for the slowness with the monetary authorities for the application of the agreement Basel 2, and finally analysis of some banks soundness indicators to measure the efficiency of the Algerian banking sector for the period from 2000 to 2021. The finding revealed that us to point out that they are improving for some and a slight decline for other. An analysis of the development of deposits by institutional sector appears at the end of December 2020 a decrease of -13.2% for deposits collected with public institutions and after government agencies, after the recorded height increased by 7.6% in 2018 and -2% in 2019 and 2020. These deposits moved from 3689.1billion dinars at the end of 2019 to 3202.5 billion dinars in 2020 and 3885.2 billion dinars in 2021.It also represents 33.9% of the total bank deposits collected compared to 39.3% at the end of 2019.This decline is due to the significant decrease in demand deposit for public institutions by (-18%) at the end of 2020, compared to a decrease of (-19.7%) at the end 2019. The Algerian economy's indicators, it can be said temporarily because Algeria's economy is rentier. In 2022, it has been expected that, the current account balance posts its first surplus since 2013 and international reserves have risen, stopping the constant downward trend of recent years. Similarly, A fiscal surplus is projected in 2022 reflecting windfall gains from hydrocarbon revenues and a significant under-implementation of budget spending, resulting from the global recovery and the war in Ukraine. The economic recovery strengthened, with non-hydrocarbon GDP growth projected to accelerate to 3.2% in from 2.1%.*

Keywords: Algerian banks, Basel agreements, banks' soundness indicators, corporate governance, efficiency of the Algerian banking sector, financial stability of banks.

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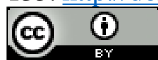

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Introduction

In a changing and rapidly changing economic environment such as globalization, privatization, the spread of financial instruments...

Banks are always seeking to manage their activities and control them and to hedge against crises as opposed to their limits, based on Basel II (Basel II-1988) and Basel II (Basel II) prudential rules issued in 2008, unlike the major global financial crisis of 2008, which caused a complete collapse of banking institutions And financial (or so-called corporate governance within banks, which emerged in many advanced and emerging economies in the financial and accounting collapses of many major international companies due to the lack of internal control, disclosure and transparency within banks. The Algerian banking sector, like all other banks, is not risk-free as a financial intermediary. The first signs of the Algerian authorities to apply the international precautionary rules issued by the Basel Committee for the management of banking risks under Law 10/90 to monitor the activity of the bank and the extent of application and full respect for the precautionary rules issued by the Basel I in 1988 to strengthen the Algerian banking system and its openness to the global economy. Our article raises a very specific question: **to what extent the rules of Basel agreements in the efficiency of Algerian Banks?**

To answer this question, we will divide our work into two axes: the first pillar: precautionary rules issued by the Basel Committee on Banking Supervision; the second theme: the reality and impact of the application of governance in Algerian banks (Basel decisions for banking supervision).

The concept of corporate governance

The concept of banking system governance has not received sufficient attention in recent studies, although it is important now. With the development of financial markets and technological development in general, the diversification of banking activity has increased, risk has increased, The Bank's governance, which has been specialized in monitoring performance, has come from the Board of Directors and the Executive Management of the Bank. Among the most important advantages of applying the principles of governance in banks:[13](ناصر)

- Banks play a supervisory role over customers to protect their loans from credit risk. This role cannot be adequately played by banks if there is no good governance to manage risk control and avoid the problem of asymmetry of information.
- Attract investment, whether foreign or local, through the accuracy, transparency and clarity in their financial statements and thus ensure the stability of the national economy.
- -Reducing the risks related to financial and administrative corruption faced by both financial and non-financial institutions through the control imposed by the principles of governance.
- -Good application of the principles of governance in private banks commitment to global control standards may lead to the lifting of the bank's shares and thus increase the value of its rival in the global financial markets.
- -Recently, banks have become interested in financial innovations (documentary credits, derivatives). They are considered a tool for various risks, both credit and operational liquidity. However, the source of income is considered the source of income. Therefore, adherence to the prudential standards of the Basel Committee has become very important to avoid Crises.

Establishment of the Basel Committee

The period of 1974 until the mid-eighties is the most important period in which several collapses of the largest banks in the world and emerged several risks did not take into account the risks of settlement and the risk of substitution operational risks. In 1974, the largest US bank broke down and Herstatt Bank in West Germany collapsed, causing huge losses to US and European banks due to its large foreign exchange and interbank market transactions, the collapse of Franklin National Bank in the United States and First Bank of Pennsylvania Banks, which had assets of about $ 8 billion dollars (supervision B. C., , « Enhancing Corporate Governances for Banking organization », 1999)[14]. In the wake of all these crises and banking collapses, serious thinking has begun on how to deal with and avoid these risks and try to create a common thinking among the central banks in different countries of the world to coordinate between the different regulatory authorities to face the various risks that may face banks.

Definition of the Basel Committee on Banking Supervision

By the end of 1974, the Basel Committee for Banking Supervision was established by the central bank governors of the industrial countries, which became (thirteen) countries composed of officials from the banking supervision bodies and central bank governors as members of Belgium, Canada, France, Germany.

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1. Literature Review

Van ROY analyzed the changes in capital and credit risks resulting from regulatory pressures and market pressures, in six of the ten major countries, Canada, France, Italy, Japan, the United States of America, and the United Kingdom. The researcher measured the risk using a ratio using the risk-weighted assets ratio. to total assets (TA-RWA), risk-weighted assets to total assets, and found a positive relationship between capital and risk in Canadian and European banks, and an inverse relationship between capital and risk in Japanese banks, meaning that banks with low capital increased capital ratios Money at a faster rate than well-capitalized banks in response to regulatory and market pressures, which was reflected in the low credit risks surrounding them, while the relationship was not clear in US banks. (Van Roy, .Capital Requirements and Bank Behavior in the Early 1990s: Cross-Country, 2008). In another study it assumes that the capital adequacy requirements proposed by the Basel Agreement pay Japanese banks, by changing their financial portfolios without relying on risk-weighted assets such as loans and corporate bonds using a set of budgets for the fiscal years 1999-1982. It was noted that the portfolios of international and local assets are not affected by the required capital ratio. (Montgomery, The effective of the basel accord in bank portfolios in Japan, 2004).

But the study of Berger aimed to examine the relationship between the ratio of capital to assets with the rate of return on equity in US commercial banks during the period 1983-1989 using the regression method. This study found that capital represents a safety factor of great importance in banks. The capital adequacy ratio has increased, and thus the confidence of customers' increases. (Barth, 2004). Next study aims to find out the effect of liquidity on the profitability of banks depending on the variable capital coverage ratio and Loan-to-deposit and Financing gap ratio. Parallel to traditionally applied profitability measures, Earnings before Taxes, Depreciation and Amortization are assumed to be alternative proxies 45 banks and 180 observations were analyzed during the period 2014-2017 and 37 observations for the year 2018. The study indicated inconclusive results as to whether the percentage of deposits affects the profitability of banks positively or negatively. Deposits contribute to increasing the percentage of profitability through financing. With cheap and stable financing, this may not be true in negative interest rate territory. Moreover, this changing economic environment may explain the inclusive results of this study. (Golubeva, 2019).

Finally, this paper provides an overview of the theoretical and experimental studies that will be used in this study modeling the relationship between efficiency, capital and risk behavior of commercial banks operating in Albania during the period 2002-2014. Based on previous studies Three-stage model was found to be a suitable model for such analysis about Albanian banking system. According to this model, first, the regression of efficiency and the variables indicating risk and capital should be analyzed, second capital will be regression against the variables indicating efficiency and risk and in the third stage the risk will be regression against the variables indicating efficiency and capital. So, this study examines the hypothesis of the relationship between the risk ratio, capital, and the efficiency of banks. It was concluded that the reduction in the efficiency ratio could create a risk for Albanian commercial banks. It is going to respond to the effects that reduction in cost efficiencies might have on future risks of Albanian commercial banks. Furthermore, this model gives the possibility to test the bad management hypothesis and efficiency version of moral hazard hypotheses for targeted banks and banking system. It also responds to the questions whether bank cost efficiency makes the foundation of banks' capital position and risk-taking and also whether there is an evidence of relationships between capital and risk-taking in line with moral hazard hypothesis. (Bozdo, 2016)

2. Criteria of the Basel Committee on Banking Supervision - Basel Convention 1

In 1988, the Basel Committee adopted its first agreement on the determination of the minimum capital adequacy ratio or the so-called ratio cook, in order to protect banks from potential risks, especially loan risk, to be adjusted in 1996 to include market risk. The minimum capital adequacy ratio has been set at 8%, to be applied from the end of 1992 to be tested for a period of three years from 1990 (ie, from 1990 to 1992). The actual implementation was at the end of 1992 under the proposal of Cook, as a percentage of the chairman of the committee) to ensure equal conditions of competition between international banks, as well as stability of banks through the stability of their own capital.

Main Provisions of the Basel Convention

The Basel Convention-1- recommended focusing on several things, including: (Basel Comittee on Banking supervision, 1998)[15]

- **Division of the world into two main groups according to credit risk weights:** The Basel Committee divided the world into two low-risk and high-risk groups.
  Group I: includes Economic Cooperation and Development (OECD) countries (OECD) plus the State of Switzerland and Saudi Arabia. Also, it includes all the countries that particular from the International Monetary Fund to borrow (FMI) namely Australia, Norway, Portugal, Finland, Austria, New Zealand, Iceland, Denmark, Greece, Turkey, and after it was amended in 1994 in July was excluded any state of the group for a period of Five years if it rescheduled its external debt.
  The second group includes all the countries except the first group.
- **Capital division:** The Basel Committee divided the Bank's capital into two tranches for supervisory and supervisory purposes.
  The first slide: includes core capital which encompasses shareholders' equity, stated general reserves and legal reserves as well as retained earnings.
  The Second slide: Supplementary or supplementary capital: it includes both undeclared reserves, revaluation reserves, reserves against bad debts. Medium and long-term borrowings of shareholders, shares and bonds that become shares after a period (securities) 1998 P 5 (B I S)
- **Weighting weights for asset-related risks**
  The bank assets are weighted at four different risk weights to distinguish between the different assets (0, 20, 50, 100%) and included assets inside and outside the budget, while the local monetary authorities left different countries free to choose the appropriate weight for the risks of others.
- **Focus on credit risk:** This agreement focused on credit risk at the expense of the standard Cook with the neglect of some other risks that could affect the financial side of the bank.
  And this becomes the capital adequacy rate (Cook) according to the decisions of the Basel as follows:
  Capital adequacy ratio= $\frac{Capital(first\ slide+second\ slide)}{Weighted\ assets\ are\ risk\ weighted}$ ≤8%

3. Amendments to the Basel Convention on the -1

After noting the shortcomings recorded, the Basel Committee felt the need to reconsider how the capital adequacy calculation, so she enters the first amendment, which was in April 1995, and introduced market risks borne by the banks and this to strengthen the global banking system. (Habiba, les accords de Bâle et règles prudentielle de Banques défis et contraintes pour le système bancaire Algérien, 2013-2014).

The new amendments to this agreement gave flexibility in application and maintained the solvency ratio (8%), although the amendment resulted in the addition of (1.5) of the components of the ratio by adding a third tranche of capital to meet part of the market risk of supporting loans for two years, The total capital consists of:

Total capital = first tranche (paid-up capital + reserves + retained earnings) + second tranche (capital cushions) + third tranche (late debt grade short-term)

Accordingly, the capital adequacy criterion after adding market risk is as follows:

$$\text{Capital adequacy ratio} = \frac{Capital(first\ slide+second\ slide)}{Weighted\ assets\ are\ risk\ weighted+Market\ risk\ scale 12.5\%} \geq 8\%$$

After the Asian crisis of 1997, (Pedro Arbulu, 2011 p 11)[16] many of the consultations began to develop these standards to show a new agreement or the so-called standard Basel Committee II in June 1999 shows the first in June 2001 as orally composed of three basic integrated columns.

4. Basic Aspects Of The Basel Convention-2

In June 1999, the Basel Committee published its first proposals on the amendment of the Capital Adequacy Standard to be more precise and comprehensive. On January 10, 2001, it gave more precise and detailed proposals on the new framework of the banking solvency standard. Comments and observations were to be sent by the

competent and competent International Monetary Fund May 2001, to produce the final version of the Convention before the end of 2001, But the large number of responses and observations and comments, was adopted the final version of the Convention in June 2004 under the name of Basel -2- that the application will be until the end of 2006 maximum.

The basic pillars of the Convention: The Basel Convention -2- represents an important step in ensuring sound and accurate management of the various risks facing the Bank in a constantly changing environment characterized by technological development and financial globalization (increased new financial instruments). The Convention has three pillars: (MonetaryInstitutions, 2004)[17]

- **Minimum capital requirements:** What is new in this agreement is the proposal of a set of approaches or methods that remain optional for banks from simplified to more complex to meet both credit risk and operational risk, while the market risk remains as in the first agreement unchanged.

This means that the Bank's solvency margin or so-called "Ratio Mac Donough" shall be as follows.

$$Capital\ adequacy\ ratio\ (2004)\ = \frac{Gross\ capital}{Credit\ risk + Market\ risk + Operational\ risk} = \geq 8\%$$

- **Supervisory reviews:** This column is based on the supervisory review of capital adequacy and includes four basic principle (supervision B. c., 2010)[18]:

Banks should have methods and systems to assess the adequacy of capital to meet various risks, in addition to the strategy necessary to maintain capital levels. The supervisory authority assesses the internal estimates of the banks in terms of capital adequacy and the extent of their commitment, and to take the necessary measures in a timely - The regulatory body expects the banks to maintain an increase in their capital and oblige them to do so. The ability of the regulatory body to intervene in the early stages to prevent the capital reduction from the required limit and to take the necessary measures in the event that the bank is unable to maintain the required level.

3. Market discipline

This pillar is complementary to the previous pillars (I and II). Through this pillar, the Basel Committee considered that the promotion of market discipline is through a set of disclosure requirements to allow participants to assess various information about the risks faced by the Bank, as well as the level of capital required to cover those risks (thus avoiding the problem of information asymmetry) Monitors the risk management of banks and avoids the spread of complex and incorrect information about the size of the risks faced by the bank (the need to disclose the methods used to determine the size of the risks, types, how to deal with them, the internal bank system to assess the size of capital required ...)

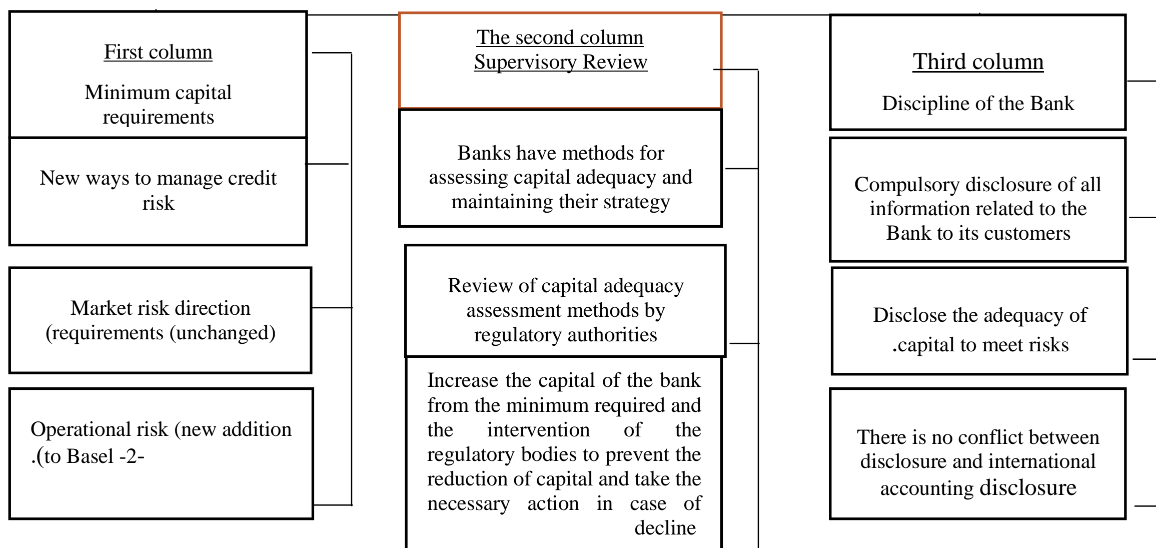

Figure 1. The basic pillars of the Basel Convention -2-

Source: Prepared by the Professor based on The New Basel Capital Accord (April 2003). https://bcbcs.org

However, despite all the characteristics of the Basel II Accord - the solidity of the financial and banking system, this did not prevent the emergence or occurrence of the major global financial crisis in late 2007, which resulted in a large debt default. This led investors and depositors to suffer losses which led to the Basel Committee for rapid intervention and radical changes to the previous agreement concerning new standards of capital, debt, and liquidity to enhance the economic and financial pressures imposed by the environment, whether internal or external, and increase transparency to ensure the financial stability of the bank in the long term.

4. Basel III - and its role in the management of banking risks

Following the global financial crisis, the Basel Committee on Banking Supervision met to prepare new and more stringent standards in line with Basel II principles - called Basel II -2, 5 - in July 2009 to be applied internationally on January 1, 2011, under the Basel III - Which aims to address the problems of securitization of mortgages.

Reasons for the emergence of the Basel III-

In the wake of the global financial crisis, the leaders of the G20 met central bankers in 2009 to set up stricter capital regulations and rules and to make the results of any future financial crisis less damaging. In this context, the Basel Committee on Banking Supervision announced the approval of each of the heads of central banks and officials of the regulatory bodies from 27 countries of the world's leading economies to enact stricter rules with regard to the concept of capital and liquidity in the twelfth September 2010 so named Basel -3- represented With a number of new regulatory standards, to be gradually applied until the beginning of 2019. ((BCBS)., 2013.)

The new Basel -3-Convention standards include the following objectives: (BCBCS, 2010c)[19] . 1 **improves the quality and structure of the capital:** The Basel Committee has decided to support and improve the quality of private capital to increase the Bank's ability to absorb losses and ensure the durability and hardness of the banking financial system to raise the minimum capital of 2% to 4.5%.

So, the Basel Convention -3- made substantial changes with respect to the minimum requirements of capital as the cancellation of the third tranche of the capital, which existed in Basel -2- said the head of the precautionary capital and thus the minimum capital of 10.5% compared to 8% will be in Basel - 2. also, some countries called for passage of the proportion of protection or hedge an additional rate of (2.5%), but it was rejected this demand and left him to choose agreement.

This is illustrated in Table 1 below.

Table 1. The new Basel -3-Convention standards

	2012	2013	2014	2015	2016	2017	2018	2019
Hard core ratio (equity)	2	3.5	4	4,5	4,5	4.5	4.5	4.5
Incremental slide ratio	2	1	1,5	1,5	1,5	1,5	1.5	1.5
Capital Category 1-	4	4.5	5.5	6,0	6,0	6.0	6.0	6.0
Capital Class 2-	4	3.5	2.5	2	2	2	2	2
Hedge capital	-	-	-	-	0.625	1.25	1.875	2.5
Minimum Equity (Hardcore Ratio) + Hedge Capital	2	3.5	4	4.5	5.125	5.75	6.375	7.0
The minimum total capital	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0
Minimum Capital Total + Hedge Capital	8.0	8.0	8.0	8,0	8,625	9.25	9.875	10.5

Source: Basel committee on banking supervision, «Group of governors and heads of supervision», Announce higher global minimum capital standards», press release, Bank for international settlements Switzerland 12 September 2010 P07.

Thus, the capital adequacy ratio is as follows: $\boldsymbol{Capital\ adequacy\ ratio} = \frac{\boldsymbol{Capital}\ (\boldsymbol{first\ tranche + second})}{\boldsymbol{Loan\ risk}\ (75\%) + \boldsymbol{Market\ risk}\ (5\%) + \boldsymbol{Operational\ risk}\ (20\%)} =\geq \%\ \mathbf{10,5}$

.

Risk coverage: The Basel Convention has allocated part of the capital to cover risks arising from derivative transactions, debt financing and repo operations. This requires an adjustment to the counterparty's credit rating in the event of a decline in creditworthiness.

Introducing leverage ratio: The agreement introduced a new ratio called the Leverage Ratio in order to put an end to the increase in the ratio of debt in the banking system resulting from the increase in the granting of bank loans to be an additional guarantee against the basic risks. This is an optional ratio of <3% Money is calculated by the following equation: (-3, 2010)[20]

$$Leverage = \frac{First\ slide\ of\ capital}{Total\ debt} => 3\%$$

Regulation of the lending policy: The agreement spoke on the matter and stressed the need not to link the policy of granting loans with the policy or economic cycle of countries in the case of prosperity of the economy banks are active significantly in financing the economy and the opposite of the recession, the rate of lending is declining.

Reduction of systemic risk: The risk to the banking system is disrupting the financial system and thus destabilizing the macroeconomic environment. The Basel Committee has therefore strengthened prudential requirements in the financial sector by introducing a new liquidity standard, which shows how important it is during the global financial crisis for the functioning of the financial system. The agreement proposed two basic ratios to be developed as a global liquidity standard.

Liquidity coverage ratio (LCR): Requires banks to maintain high liquidity assets to cover cash flow within a maximum of 30 days. This is to ensure that banks can self-finance if any crisis occurs and is calculated as follows:

$$\text{Short Term Liquidity Ratio (LCR)} = \frac{Gross\ Capital}{Net\ cash\ flows\ within\ 30\ days} =\geq 100\%$$

Long-term liquidity criterion (Net Stable Funding ratio) (Ipid p 25-31)[21]**:** The objective of this ratio is to provide the banks with stable sources of financing for their activities especially in the period of financial distress or pressure that may last for a longer period due to the decline in performance and thus the decline in profitability ... Calculated as follows**:**

$$Long - Term\ Liquidity\ Ratio\ (NSFR = \frac{Stable\ resources\ available\ for\ the\ year}{Need\ for\ stable\ funding\ for\ the\ year} =\geq 100\%$$

Expected effects of the Basel Convention -3-

The Basel III Convention is a tool to immunize the banking sector from financial imbalances and crises. This is why central banks have created new rules aimed at large increases in the bank's capital as a precaution against any pressures or high shocks without the need for government intervention to save the situation. The recent global financial. In addition to the increase in capital reserves (column 1), Pillar II and III of Basel III, they focused on the various risks facing banks and allocated two ratios to the long- and short-term liquidity standard for measuring and managing them simultaneously. For Pillar 3 The agreement contains provisions calling for transparency in the financial system by disclosing the banks on the size of the risks and how to deal with them.

In contrast, the new agreement carries many challenges and difficulties for banks, which can be summed up in: (BIS, 2011)[22]

1. The new agreement carries very complex texts on how to apply them. Therefore, banks that have not implemented the Basel II Agreement will find it difficult to absorb them.

2. The new definition of capital and the inclusion of new risks with higher weighting of certain risks will lead to a reduction in the capital adequacy ratio, which leads banks to seek other sources, either raising their capital through new shares for public subscription, or not allocating profits. The banks will find themselves forced to seek other sources to keep pace with new increases, for example by reducing the volume of

borrowing or putting pressure on weak institutions and increasing the cost of borrowing, but in return for profits. Banks will shrink significantly.

3. Compliance with the standard of leverage leads to the reduction of the credit ratio in banks, which directly affects the profitability of banks and to compensate for this decline resort to raising the rate of interest in this case customers seek to find other sources to finance them such as financial markets.

4. Compliance with long-term and short-term liquidity criteria will also increase high-quality assets within banks, indicating a decline in their employment (they will become rigidly unfit for employment and finance the economy).

5. To reduce inter-bank crisis transmission, both will be dealt with directly or through organized and unregulated financial markets.

6. The reality of the application of governance in the Algerian banks

The Algerian regime was affiliated to the French regime. It included a group of important commercial banks, some business banks, and institutions to re-discount. But after independence, some banks changed, and others stopped. The capital was withdrawn, and deposits were withdrawn by the old. Banker is in line with the large and rapid changes in the economic environment.

The development of the Algerian banking sector can be divided into two main stages:

The first stage: before (1990), which in turn divided into three basic stages:

- (1970-1962): At this stage, the Algerian Central Bank was established, which is now called the Bank of Algeria.
- (1986-1970): The banking sector was modernized and restructured.
- (1986-1990): The most important stage for the banking sector where it witnessed a major development through the enactment of laws and legislative regulations to start reforming the banking system and guaranteeing its independence.

The second stage (Banque d'Algérie, 2011 p 15)[23]: (after 1990): The stage of the reform of the banking sector and liberalization of all restrictions (financial liberalization) and its introduction into a market economy in line with changing environmental factors such as technological development, globalization, privatization ... through the issuance of the Money and Credit Law 10/90 of On 19 April 1990.

2003 - To this day: This period was defined as an amendment to the Monetary and Loan Law dated 26 August 2003 under Order No. 11/03, which is based mainly on the principle of supervision and control to avoid the various risks that the Bank may face. It is possible to say that the real start of the banking sector was after the issuance of the Money and Credit Law 10/90 and my father came some of the occurrence of several gaps or even crises in the banks of Algeria resulting in weak supervision and supervision of the Central Bank, and amended this law in 2003 in order to strengthen the solidity of the banking system.

In this context, it was the first signs of the Algerian authorities towards the application of international prudential rules issued by the Basel Committee for the management of banking risk and monitoring its activities, has established a banking committee under 10/90 law to monitor the activity of the bank and the extent of its application and respect for the full rules of the precautionary of the Commission for the first Basel in 1988, and this to strengthen the system Algerian banking and its openness to the global economy.

The Basel Convention is one of the most important principles of the Cook Index, which requires that it be greater than or equal to 8%. The Algerian authorities in this regard have given a time scale to reach this percentage in accordance with Order 74/94 of 94/11/29. The banks had to have a ratio of 4% starting from the end of June 1995 and raising it to 5% at the end of December 1996 until it reached 8% at the end of December 1999 of the total capital to deal with credit risk in particular. In this context, the Bank of Algeria imposed on banks and financial institutions reduce the credit risk by not exceeding the following ratios with the same level Regarding the risks of granting loans: - 4% as of January 1, 1992, 30% in January 1993 and 25% as of January 1995.

At the beginning of the third millennium, the Monetary and Loan Law was amended by virtue of Order (01/02) amended and completed on 02/02/2002. It was compensated by Order No. (11/03) dated August 26, 2003 relating to cash and loan, after the bankruptcy of the Bank of the Caliph and the Bank of Industry and the Algerian Trade (BCIA). In this regard, the Banking Committee pointed out that the poor governance resulting from poor supervision and supervision by the Bank of Algeria is the main cause of the bankruptcy of the two banks. Poor governance within banks is the result of a lack of respect for the basic principles of sound application: - Lack of respect for disclosure and transparency in reporting to the Bank of Algeria.

- Absence of supervision and supervision.
- Failure to respect the rules of caution.
- Non-compliance with accounting procedures.

In general, despite the Algerian authorities' efforts to reform and liberalize the banking system to cope with major economic developments and its openness to the market, the main problem for Algerian banks is government intervention in the activity of banks, although there are procedures for financial liberalization, which Hampered banks' efficiency, efficiency and application of Basel II decisions.

7. Analysis of some indicators to measure the efficiency of the Algerian banking sector (2000-2021)- Better pooling of resources

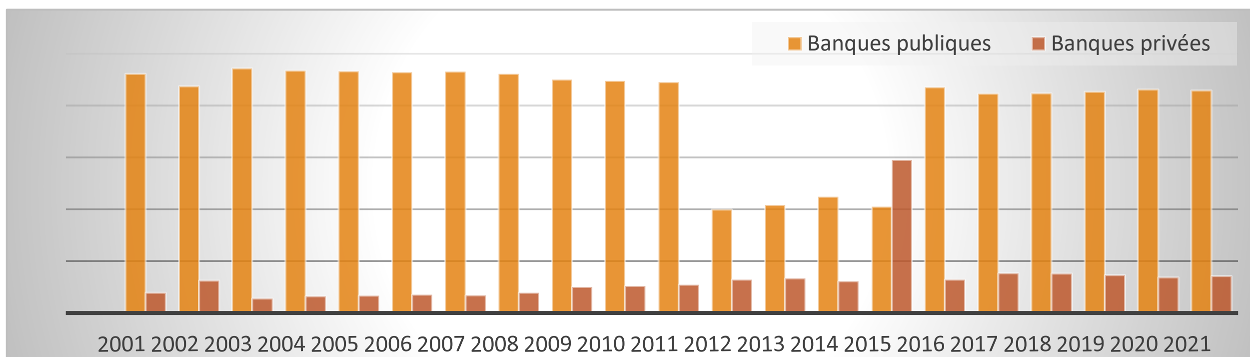

Figure 2. Better pooling of resources

Source: Produced by the researcher on the basis of the annual reports of the Bank of Algeria (2001-2021) (https://www.bank-of-algeria.dz)

Public banks constitute the dominant segment with an average of 90% of the total volume of resources collected over the period 2000-2015, compared to an average of 10% for private banks. However, the negative flows of deposits collected were registered by the public banks in dinars with the public sector (-324.2 billion dinars, against a positive flow of 709.4 billion dinars in 2014) while the flow of deposits in dinars they collected from private companies and households is positive (275.9 billion dinars, against 270.7 billion dinars in 2014).

Regarding private banks, they recorded in 2015 a negative flow of resources collected in dinars from private enterprises (-99.6 billion dinars) but a positive flow from households (30.1 billion dinars), against positive flows in 2014 for both private enterprises (32.8 billion dinars) and households (43.4 billion dinars). The latter has been affected by the decline in the average price of oil, which is reduced from $ 100 per barrel in 2014 to $ 59 per barrel in 2015 and (40.1% en 2017) and (39.7% en 2018) and (37.99% en 2021).

Credit Distributor

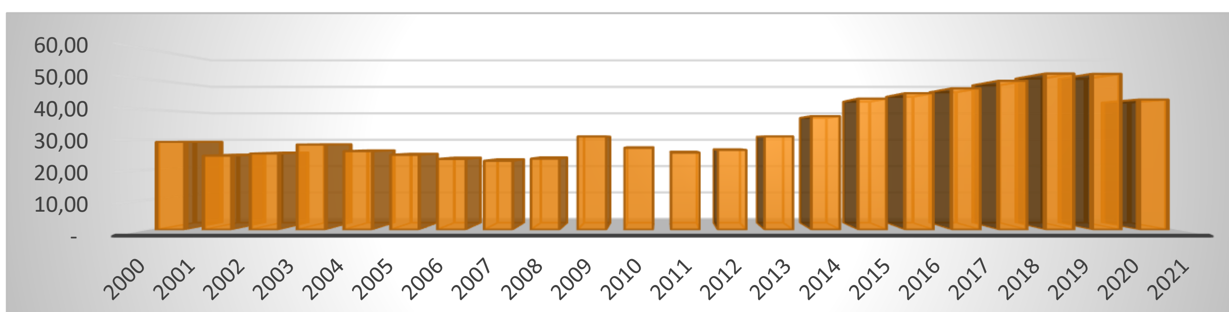

Figure 3. The percentage of Credit Distributor

Source: Produced by the researcher on the basis of the annual reports of the Bank of Algeria (2000-2021). https://www.bank-of-algeria.dz

The distribution of loans showed an upward trend during the period (2000-2018) ranging from 993.053 billion dinars in 2004 to 7275.6 billion dinars over the period considered.

Financing of loans to the economy is largely provided by the public banks compared to private banks over the period under review 37.8%,43.6%, 45.4%, 47%,49.5%,51.8% and43.3% respectively à 2014, 2015, 2016, 2017, 2018, 2019 and 2021 where they remain heavily committed to financing large public investment projects, particularly in the private sector. Energy and water sectors.

The evolution of credit / deposit ratio

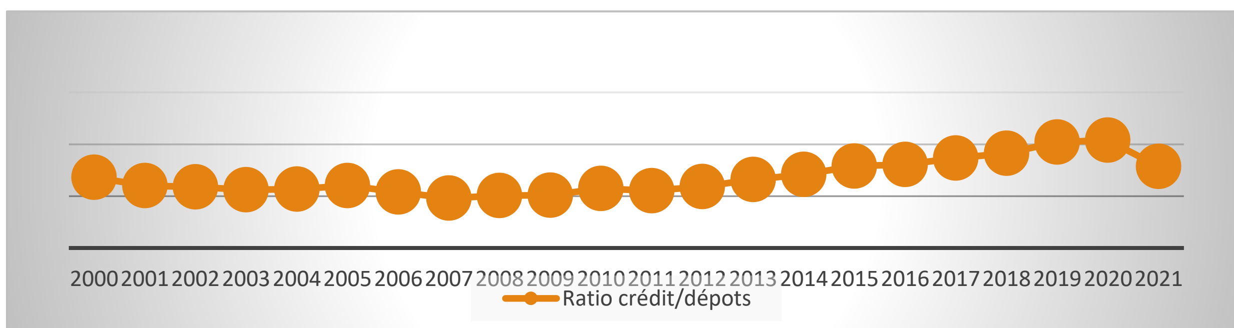

Figure 4. The evolution of credit / deposit ratio

Source: Produced by the researcher on the basis of the annual reports of the Bank of Algeria (2000-2021) https://www.bank-of-algeria.dz

Moreover, concern the ratio the credit-to-deposit ratio measures the level of liquidity of the banking sector. This ratio is around 79% in 2021, showing that loans granted are significantly lower than deposits. The Algerian banking sector was characterized by a situation of excess liquidity.

Evolution of th liquidity of the economy (M_2 /GDP)

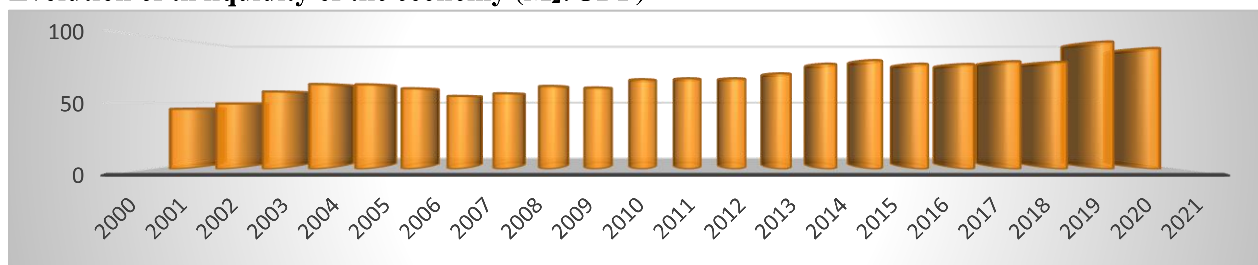

Figure 5. Evolution of the liquidity of the economy (M2 /GDP)

Source: Produced by the researcher based on the annual reports of the Bank of Algeria (2000-2021). https://www.bank-of-algeria.dz

This graph show that the level of liquidity continued to increase, reaching 91,2% at the end of this period. This percentage experienced a slight decrease for the second time in 2016(79.4%), and in 2017(79.2%) against (82.1%) in 2018 and (91.2%) in 2021.

Troubled credit as a percentage of total credit

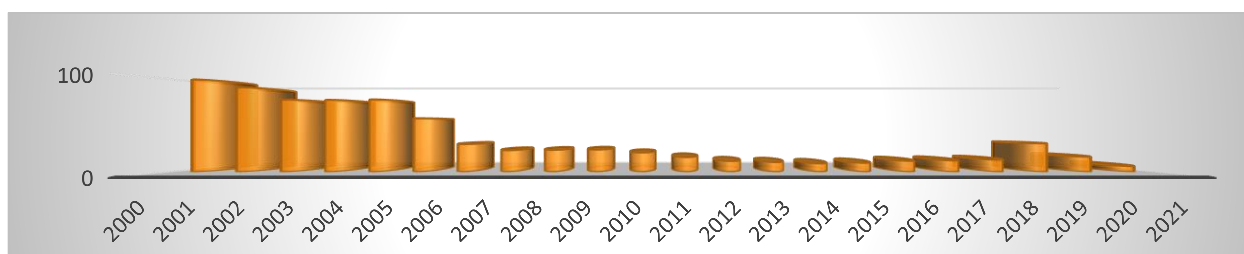

Figure 6. Troubled credit as a percentage of total credit

Source: Produced by the researcher based on the annual reports of the Bank of Algeria (2000-2021). https://www.bank-of-algeria.dz

The level of moderate non-performing loans in commercial banks in Algeria. The decline in this rate is significant and considerable, rising from 99.85% in 2000 to 23.4% in 2007 to 9.8% in 2015, mainly due to the rise in non-performing loans in private banks (8%). 7%, compared to 9.2% in 2014),13,13%in2018,16.4 in 2020 and 6.3% in 2021, but it remains insufficient compared to other countries in the world and international standards (6%). It will then be necessary to set stricter governance policies in order to reduce these debts as much as possible.

Evolution of Return on Equity (ROE) and Return on Assets (ROA)

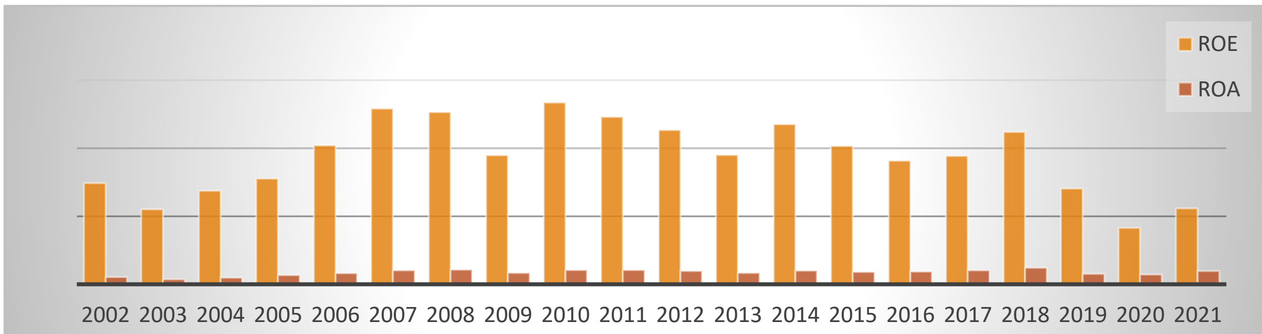

Figure 7. Evolution of Return on Equity (ROE) and Return on Assets (ROA)

Produced by the researcher based on the annual reports of the Bank of Algeria (2000-2021). https://www.bank-of-algeria.dz

This diagram shows a volatile development of the percentage of return on equity,and an almost constant development of the percentage of active returns during the period 2002-2021, between 2002 and 2003 , the return on equity decreased by 3.85% , then there was a consecutive increase between 2004and 2007.It estimated 10.97%. for having another decrease in 2008 and 2009 where the ration reached 25.3% and 18.97% respectively.

This period corresponds to the appearance of the international financial crisis which affected the prices of hydrocarbon export.

The Bank of Algeria also took measures to contain the effects of the health crisis on the banking sector during the years 2020and 2021 ,this resulted in an improvement in the return on capital (ROE).where it rose from 8.3% in 2020 to 11.2 in 2021 .at the same rate, the return assets increased (ROA). From 1.43% in 2020 to 1.95% in 2021.

This significant improvement is mainly due to an increase of 23.6% percent in the value of net product before tax.

The bank solvency ratio

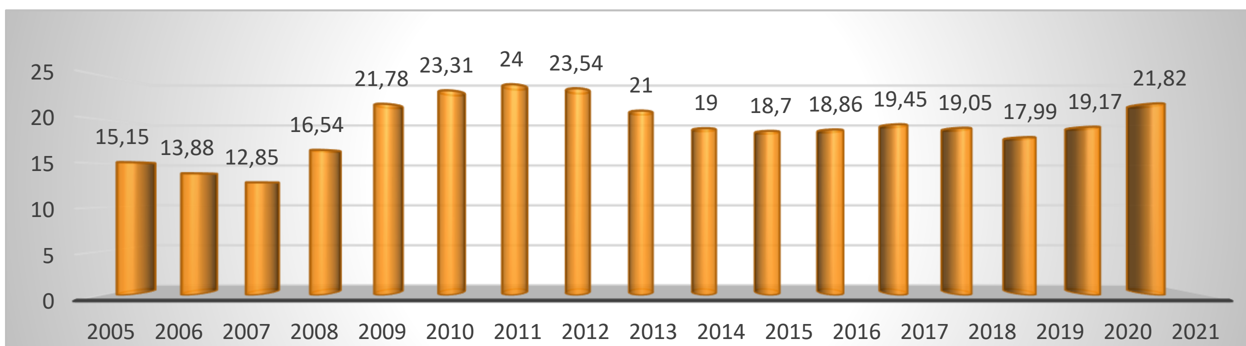

Figure 8. The bank solvency ratio

Source: Produced by the researcher based on the annual reports of the Bank of Algeria (2000-2021) https://www.bank-of-algeria.dz

The governor of the Bank of Algeria announces that all domestic and foreign banks operating in Algeria largely respect prudential rules, including the bank solvency ratio which reached 18.70% at the end of 2015 after a decrease over the period (2011- 2015) thanks to the effects of the recapitalization of banks carried out in 2009. He adds that the level of this solvency ratio to 18.70% is very appreciable, especially since this same ratio is much lower in the countries hit by the crises. Economic and financial, not exceeding 10% and even rates well above the minimum standards recommended by Basel III. During the year of 2020, the Algerian

banking sector remains similar to regulatory standards in terms of stability. The stability ratios have improved in 2020 after declining in the previous year. According to the mitigation measures taken by the Bank of Algeria to facing the repercussions of the global health crisis that touched the whole world banks noticed an increase in average capital at a rate exceeding 62%between 2019 and 2020, after the decline of 33.6in 2019.The net product of the banking sector improved by 6.7% in 2020.Which allowed the return on assets ratio to rise from 1.47%in 2019 to 1.54%in 2020 and 2021.

On the other hand, this high level of the ratio shows above all an unused credit capacity.

Conclusion

Banking crises and, by definition, the occurrence of an unexpected event and that cannot be predicted or controlled, is why the bank's governance is essential for the control of the management rules to avoid any possible crisis that may have a detrimental effect on the economy of a country (application of Basel agreements 1,2,3).

The Algerian authorities have transposed all the directives and recommendations of the Basel Committee, whose purpose is not to expose themselves to a possible problem or crisis, knowing that the effect of crisis can spread from one country to another, and the simplest and most real example is the 2008 crisis.

The study examined the impact of the Basel regulations on the banking efficiencies in Algeria from 2000 to 2021.

We found that, by the end of 2021, the indicators of banking intermediation, financial resilience, and the profitability of the banking sector have developed well, with the exception of loans directed to the economy compared to other years, because Algeria is enjoying a temporary respite with the end of the Corona pandemic and the rise in hydrocarbon prices (fuel) to new highs that it has not seen since the crisis. Oil in 2014, which led to a gradual increase in the shares of crude oil production and then a prosperity in natural gas production and exports.

Accordingly, the government's structural reform will be necessary to accelerate the pace of recovery to support macro and microeconomic indicators, reduce Algeria's dependence on hydrocarbon exports, diversify the economy, and create job opportunities. In this context, the state has digitized traditional and Islamic banking financial services and supported financial inclusion as well. As a positive step, it has encouraged artuptS projects. All these measures help banks respect and apply the precautionary rules, and thus increasing its efficiency. Despite all these procedures, however the Algerian banking system, still largely dominated by the public sector (public banks hold about 90% of total assets), contributes insufficiently to the financing needs of the private sector, and the capital market also remains undeveloped and offers a limited number of instruments and alternative sources to bank financing so it should urgently including through the reform of public banks and state-owned enterprises.

Finally, the prudential standards are still based on Basel I, and in this context, the Instruction n ° 94-74 of November 1994, relative to the setting of the prudential rules of management of the banks and the financial institutions must be canceled with the bank of Algeria, because it is compatible with Basel I, while the world has finished the application of Basel III.

For Future research it would be for interest to measure. The Impact of the Basel agreement on liquidity risks and credit risks, which are the most prevalent in the work of Algerian banks to know the measures that banks can take to reduce these risks. Also, the relationship between efficiency and the moral risk hypothesis and capital can be studied as part of the operational risks. Algerian institutions Corruption and manipulations abound, and with this study, government authorities can control the moral hazard without reducing their capital imposed by the agreement. and the cut from the risk of their investment projects

References

1. Alamgir, M. (2007, May). Corporate governance: A Risk perspective. Paper presented to corporate and Reform : paving the way to financial stability and developpement, a conference organized by the Egyptian banking Institute; Cairo, 5.

2. Arbulu, P., Lamarque, É. (2011). Les restructurations et la reconstruction de la confiance envers 1les banques: une nécessité de l'après-crise [Restructuring and rebuilding confidence in banks: a post-crisis necessity]. Pearson France: Management de la banque, 3e éd. [Link] (in French)
3. Bank for International Settlements Communications. (2010, December). International framework for liquidity risk measurement, standards and monitoring. *Basel committee on banking supervision*, 3-5. Switzerland. ISBN print: 92-9131-860-4; ISBN web: 92-9197-860-4. [Link]
4. Banque d'Algérie. (2011). Contrôle et supervision bancaire : du renforcement de la solidité bancaire. . Algerie: Rapport annuel. [Banking control and supervision: strengthening banking soundness. . Algeria: Annual report] [Link] (in French)
5. Barth, J. R. (2004). Bank Regulation and Supervision: What Work Best? *Journal of Finance Intermediation, 13*, 205-248. [Link]
6. Basel Cometee on Banking Supervision. (1998, February). Enhancing Corporate Governances for Banking organization, Bank for international settlements, Switzerland, 5. [Link]
7. Basel Cometee on Banking Supervision. (1999, September). Enhancing Corporate Governances for Banking organization,. Bank for international settlements, Switzerland, 7. [Link]
8. Basel Cometee on Banking Supervision. (2010, December). Enhancing Corporate Governances for Banking organization, Bank for international settlements, Switzerland, 5-8. [Link]
9. Basel Comittee on Banking supervision, B. (1998, February). En hancing Corporate Governances for Banking organization. *Bank for international settlements, Switzerland*, 5. [Link]
10. Bozdo, A. M. (2016). Modeling the relationship between bank efficiency, capital and risk in Albanian banking system. *Procedia Economics and Finance 39*, 319-327. [CrossRef]
11. BCBCS. (2010c, December 16). Results of the comprehensive quantitative impact study. *Bank for international settlements*, 6. [Link]
12. (BCBS)., B. C. (2013). Basel III: The liquidity Coverage Ratio and Liquidity Risk Monitoring Tools. [Link] (accessed on 10 January 2022).
13. Golubeva, O. D. (2019). The impact of liquidity risk on bank profitability: some empirical evidence from the European. *Journal of Accounting and Management Information Systems, 18(4)*, 455-485. [CrossRef]
14. Habiba, M. (2013-2014, Mai 22). les accords de Bâle et règles prudentielle de Banques défis et contraintes pour le système bancaire Algérien. . Thèse de doctorat soutenu à Université de Tlemcen [Basel agreements and banking prudential rules challenges and constraints for the Algerian banking system. . Doctoral thesis defended at University of Tlemcen], 21. [Link] (in French)
15. Lee, T. &. (2013). Does financial regulation affect the profit efficiency and risk , Evidence from China's commercial banks. *North American Journal of Economics*, Elseiver, *26*(C), 705-724. [Link] [CrossRef]
16. Monetary Institutions. (2004). Basic features of Basel II agreement and developing countries. Arab Monetary Fund Abu Dhabi, 18-19.
17. Montgomery, H. (2004). The effect of the basel accord in bank portfolios in Japan. *Journal of the japanese and Iinternational Economies,* 19, 24-36. [CrossRef]
18. Van Roy, P. ((2008)). Capital Requirements and Bank Behavior in the Early 1990s: Cross-Country. *International Journal of Central Banking*, *4*(3), 29-60. [Link]