

## Evaluation of the Role of the Bank of Algeria in Banking Risk Management in Accordance with Basel Committee Regulations: A Case Study of the Local Development Bank (BDL).

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**Abstract:** This study aims to identify the mechanisms adopted by the Bank of Algeria in risk management in accordance with the Basel Committee's regulations, with a particular focus on the case of the Local Development Bank (BDL), considered one of the most important public banks in Algeria. The research is based on an analysis of the legal and regulatory framework established by the Bank of Algeria, in addition to prudential indicators.

The findings indicate that the Bank of Algeria has undertaken significant steps to strengthen risk management through the implementation of international Basel standards. These mechanisms include the legal and legislative framework, banking supervision, international cooperation, awareness and training, as well as prudential measures, which represent the most essential tool in risk management. However, the implementation of these standards has been delayed compared to the international schedule, which has affected the degree of compliance of Algerian banks, including the Local Development Bank. The results also reveal that the latter is striving to improve its compliance mechanisms and risk management practices.

**Keywords:** Risk Management, Basel Committee, Local Development Bank, Bank of Algeria.

**Jel Classification Codes :** G21, G28, G32, G38, O16, R51, E58.

**Résumé :** Cette recherche a pour objectif d'identifier les mécanismes mis en place par la Banque d'Algérie dans la gestion des risques conformément aux accords de Bâle, en mettant l'accent sur l'étude de cas de la Banque de Développement Local (BDL), considérée comme l'une des principales banques publiques en Algérie. L'étude repose sur l'analyse du cadre juridique et réglementaire instauré par la Banque d'Algérie, ainsi que sur les indicateurs prudentiels.

Les résultats ont montré que la Banque d'Algérie a entrepris des démarches importantes pour renforcer la gestion des risques, à travers l'application des normes internationales de Bâle. Ces mécanismes se traduisent par : le cadre légal et législatif, la supervision bancaire, la coopération internationale, la sensibilisation et la formation, ainsi que les mesures prudentielles, lesquelles constituent l'outil principal de gestion des risques. Toutefois, la mise en œuvre de ces accords a connu un retard par rapport au calendrier international, ce qui a influencé le degré de conformité des banques algériennes, dont la Banque de Développement Local. Les résultats ont également montré que cette dernière s'efforce d'améliorer ses mécanismes de conformité et de gestion des risques.

**Mots-clés :** Gestion des risques, Comité de Bâle, Banque de Développement Local, Banque d'Algérie.

**Jel Classification Codes :** G21, G28, G32, G38, O16, R51, E58.

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## I. **Introduction**

The global banking system, including the Algerian banking system, has witnessed increasing challenges related to financial risks. In light of these challenges, the Basel Committee has emerged as a leading international body in establishing standards for banking risk management. In response, the Bank of Algeria has taken significant steps to strengthen risk management within the Algerian banking sector through the implementation of international Basel standards. The Algerian monetary authorities, by enacting the Law on Money and Credit and its subsequent amendments, adopted the resolutions issued by the Basel Committee in its first accords of 1988. This was aimed at ensuring compliance with supervisory rules that enable banks to provide services of higher quality, enhance their ability to manage and control risks, and reinforce their financial positions.

However, the Algerian banking sector lagged behind in implementing these standards compared to the timetable set by the Basel Committee, which also led to delays in applying the second and third Basel accords. The Local Development Bank (BDL) is considered one of the most prominent public banks in Algeria, making it a suitable case for assessing the extent of its compliance with Basel Committee accords and for identifying the supervisory mechanisms employed by the Bank of Algeria to mitigate banking risks.

In order to clarify the strategy of the Algerian monetary and financial authorities in managing risks in line with the implementation of the three Basel accords, this study seeks to answer the following research question:

**To what extent has the Bank of Algeria complied with banking risk management requirements under the Basel accords, with a particular focus on the case of the Local Development Bank (BDL)?**

### ***I.1 Sub-questions:***

- What are the mechanisms adopted by the Bank of Algeria in risk management to enforce compliance with Basel Committee accords?
- To what extent has the Local Development Bank (BDL) complied with the implementation of Basel accords?
- What challenges and difficulties does the Local Development Bank face in implementing these accords?

### ***I.2 Hypotheses***

- The Bank of Algeria's implementation of the Basel Committee's regulations has contributed to improving the risk management system in Algerian banks.
- The Local Development Bank (BDL) complies with the risk management standards imposed by the Bank of Algeria.

- The Local Development Bank (BDL) adheres to the Bank of Algeria's instructions related to capital adequacy.

### ***1.3 Significance of the Study***

The significance of this study lies in highlighting the supervisory role of the Bank of Algeria in consolidating banking stability and clarifying the extent to which Algerian banks particularly the Local Development Bank (BDL) comply with Basel Committee standards. This, in turn, contributes to enriching academic research on the implementation of international standards within the Algerian banking sector.

### ***1.4. Research Objectives***

- To evaluate the role of the Bank of Algeria in banking risk management under Basel accords, with a focus on the experience of the Local Development Bank (BDL).
- To analyze the risk management mechanisms adopted by the Bank of Algeria.
- To assess the extent of the Local Development Bank's compliance with prudential regulations.

### ***1.5 Research Methodology and Tools***

*This research was conducted using the descriptive method, due to its suitability for topics of this nature. Data and information were collected, classified, and analyzed in order to formulate the theoretical background of the study. The research relied on a variety of sources, including both directly and indirectly related references, as well as published articles from online platforms and reports issued by the Bank of Algeria.*

*For the practical aspect, the study employed the case study method, focusing on the Local Development Bank (BDL). The research was based on the bank's annual reports, and the data contained therein were analyzed to determine the extent to which the bank complies with the risk management standards imposed by the Bank of Algeria.*

### ***1.6 Previous studies***

**Study by Bendehina Meryem & Zirar Soumia (2019):** The study, titled “*Basel III and Algerian Banks: Field Study a Sample of Algerian banks*”, aimed primarily to highlight the role of the Bank of Algeria in establishing the basic pillars of Basel III, and to identify the main challenges facing the Algerian banking system in implementing this framework. The study's results showed that although there is a regulatory will to implement Basel III, especially regarding minimum capital requirements, there are very large “structural and institutional challenges” burdening Algerian banks, making compliance with Basel standards difficult to implement in practice. Despite the regulatory will, the actual banking reality in terms of capital, structure of banks, institutional capacity, does not



provide guarantees for effective implementation on the ground. This makes it difficult to ensure the solidity and stability of the banking system in the short and medium term.

**Study by Bellahrech A. & Addoun I. (2022):** The study titled “*The Reality and Prospects for the Application of Basel III Decisions in the Algerian Banking System*” aimed to identify the measures taken by the Bank of Algeria to activate the application of the new requirements of Basel III and to determine their expected effects on the Algerian banking system. The study concluded that although the Bank of Algeria has worked to adapt the Algerian banking system to the Basel III decisions, there remain several reforms that must be carried out due to the presence of some challenges that hinder the implementation of these decisions in practice; consequently, the application of Basel III decisions is unlikely to have a significant impact, given the current characteristics of the system.

**Study by Jlalila N. & Belaâchi A. (2024):** The study titled “*Financial Risk Management in the Banking Sector in Accordance With Basel III Standards, Bank of Algeria Case Study (2018–2022)*” aimed to assess the extent of compliance of the Bank of Algeria (representing the national banking system) with Basel III requirements during the period 2018–2022, by examining whether regulatory texts and supervisory mechanisms had been updated to meet the prudential standards. The results indicated that the Bank of Algeria enacted regulatory texts that are relatively consistent with the prudential requirements of Basel III, and updated the banking supervision system aiming to improve oversight, which shows regulatory and structural progress compared to earlier periods. This offers an opportunity to strengthen the resilience and effectiveness of risk management. However, since the compliance is “relative,” full alignment is not yet achieved; thus the expected benefits of enhanced capital cushion / risk buffer will remain limited until other conditions, governance, transparency, effective internal supervision, are fully consolidated.

Although previous studies have highlighted the structural and institutional challenges to implementing Basel III standards in Algerian banks, they have not focused on the supervisory and effective role of the Bank of Algeria in guiding and managing banking risks in a specific bank such as Banque de Développement Local (BDL), which creates a scientific gap that requires field research and a realistic analysis of how governance and supervisory practices affect risk management outcomes in a specific bank.

## **II. Banking Risk Management**

Risk management in banks has become one of the key pillars in determining banking solvency and achieving the stability of the financial system. Therefore, in this section, the concept, importance, objectives, and various stages of risk management will be addressed.

### **II.1 The Concept of Risk Management**

Risk management has been defined as:

- The process through which risks are identified, assessed, measured, monitored, and controlled, with the objective of ensuring a comprehensive understanding of them and confirming that they remain within acceptable limits and within the framework approved by the bank's Board of Directors. (Abu Muheimid, 2008 ,p19).
- Risk management is also defined as a scientific approach to dealing with risks by anticipating potential losses and designing and implementing procedures that would reduce the likelihood of such losses occurring. (Abdel Aal, 2007, p50).
- Risk management refers to the set of processes and strategies that enable banks to understand, evaluate, and mitigate the impact of uncertainties on their financial performance. (World Bank, 2011).
- Risk management is a systematic approach to setting the best course of action under uncertainty by identifying, assessing, and prioritizing risks, followed by coordinated efforts to minimize, monitor, and control the probability or impact of unfortunate events. (ISO 31000 Standard, 2009).

In summary, risk management can be defined as the set of systematic procedures implemented by banks to identify potential risks, assess and measure them, and apply appropriate strategies to mitigate their adverse effects while ensuring effective hedging to safeguard the achievement of their objectives

### **II.2 The Importance of Risk Management**

The importance of risk management lies in the following (Najjar, 2014, p79):

- A tool for implementing strategy: It provides banks with a better outlook for the future and enables them to foresee potential outcomes or fluctuations in profitability.
- Enhancing competitive advantage
- Measuring capital adequacy and the ability to meet obligations.

- Contributing to pricing decisions.
- Reporting and monitoring risks.

### ***II.3 Objectives of Risk Management***

The main objectives of risk management can be summarized as follows (Jalal, 2013, p.5):

- Identifying the source of risk.
- Measuring the probability of risk occurrence.
- Determining the potential impact of risk on revenues and assets.
- Assessing the possible effects on the bank's operations.
- Planning the necessary control and mitigation measures to reduce or eliminate the impact.

### ***II.4 Steps of Risk Management***

The main steps of risk management can be outlined as follows (Amara, 2009, p.3):

***II.4.1 Risk Identification:*** For the bank to effectively manage risks, it must first identify them, as every product or service offered by the bank involves several types of risks.

***II.4.2 Risk Measurement:*** This step follows risk identification, where each type of risk is assessed in terms of three dimensions: its magnitude, its duration, and the probability of its occurrence.

***II.4.3 Risk Control:*** There are three fundamental approaches to controlling risks: avoiding certain activities, reducing risks, or eliminating their effects.

***II.4.4 Risk Monitoring:*** Monitoring risks is essential for banks as it directly affects their operations, continuity, and performance. This has led to the development of mechanisms for predicting, monitoring, and controlling risks. Accordingly, the prudential rules emerged, serving as preventive standards for controlling risks, which banks are required to comply with.

## ***III. The Mechanisms of the Bank of Algeria in Risk Management According to the Basel Committee***

The Bank of Algeria relies on a set of mechanisms for risk management in line with the recommendations of the Basel Committee, which include:

### ***III.1 The Legal and Regulatory Framework***

This is represented mainly in the Money and Credit Law, which establishes the

foundations for the functioning of the Bank of Algeria and contains provisions related to banking risk management. In addition, the directives and decisions issued by the Bank of Algeria complement this law, setting requirements for capital, reserves, and standards for managing various risks.

Since independence, the Algerian banking sector has undergone several reforms aimed at building a system aligned with global financial and economic changes. With worldwide developments in banking supervision, Algeria had to keep pace, beginning with the first focus on prudential regulation through the 1986 law, followed by:

- Regulation No. 90-01 dated July 4, 1990, related to the minimum capital requirements for banks and financial institutions operating in Algeria, considered the first prudential rule in the Algerian banking system.
- Regulation No. 91-09 dated August 14, 1991, which set prudential management rules for banks and financial institutions.
- Instruction No. 94-74 dated November 29, 1994, which defined the application of prudential management rules for banks and specified the reporting templates. This instruction required banks to comply with a minimum capital adequacy ratio of  $\geq 8\%$ , applied gradually, with a final deadline set for December 1999.
- Instruction No. 99-04 dated August 12, 1999, which specified reporting templates for coverage ratios and risk distribution.
- Instruction No. 07-09 dated October 25, 2007, which amended and supplemented Instruction No. 74-94.
- With the global trend moving towards the implementation of the Basel III Accord, Algerian authorities issued Regulation No. 14-01 dated February 16, 2014, establishing solvency ratios applicable to banks and financial institutions. It required compliance with a capital adequacy ratio of  $\geq 9.5\%$ , along with a 2.5% capital conservation buffer, in line with Basel II requirements and as a preparation for Basel III adoption.

### **III.2 Banking Supervision**

The Bank of Algeria adopts multiple forms of supervision to ensure sound risk management across the financial sector:

- **Early Supervision:** The Bank of Algeria continuously monitors banks and financial institutions to assess their capacity to manage risks and ensure compliance with regulations.
- **Comprehensive Supervision:** This approach aims to evaluate the effectiveness of risk management systems within banks and financial

institutions, identify weaknesses, and take the necessary corrective measures.

- **Risk-Based Supervision:** This type of supervision focuses on banks and financial institutions exposed to higher levels of risk and requires more precise monitoring.

**III.3 Prudential Measures:** The Bank of Algeria issues guidelines and instructions to banks in order to mitigate risks. These prudential measures are considered the most significant mechanism in risk management and represent the central element emphasized by the Basel Committee, which is why this paper will particularly focus on them.

### ***III.4 International Cooperation***

The Bank of Algeria actively engages in international cooperation by participating in the Basel Committee's work, exchanging expertise, and signing cooperation agreements with international financial institutions to strengthen its risk management framework (World Bank, 2011).

### ***III.5 Awareness and Training***

The Bank of Algeria promotes awareness of risk management by organizing seminars and training programs for employees of banks and financial institutions. It also publishes studies and reports on banking risks, disseminating best practices and raising awareness across the financial sector (Najjar, 2014)

## ***IV. The Mechanisms of the Bank of Algeria in Risk Management under Basel I***

In 1988, the Basel Committee on Banking Supervision issued the Basel I Accord, which set minimum capital requirements that banks must hold as a percentage of their risk-weighted assets. This accord primarily addressed credit risk and aimed to strengthen banks' ability to absorb losses in the event of credit-related risks.

The Algerian banking sector was relatively late in implementing the Basel I requirements, as the Bank of Algeria granted a transitional period to Algerian banks to enable them to adapt to these standards, in line with the transitional phase of the Algerian economy toward a market-based system. The first compliance with Basel I was through the issuance of Regulation No. 90-01 dated July 4, 1990, which set the minimum capital requirements for banks and financial institutions operating in Algeria. Afterwards, the Bank of Algeria issued a series of prudential rules aimed at aligning banks and financial institutions with the new supervisory approach. These prudential rules are considered the most important mechanism for risk management in the Algerian-banking sector, which is why the main elements they introduced will be highlighted in this section.

### ***IV.1. Prudential Rules in Algerian Banks***

The Algerian monetary authorities adopted a number of prudential rules in line with the Basel I Accord. The most important of these rules can be summarized as follows:

**IV.1.1 Capital Adequacy:** Also known as the risk coverage ratio, this ratio aims to support the stability of the banking system. It represents the relationship between net equity (capital) and the risks faced by the bank as a result of the loans it grants to its clients, and is expressed in the following formula (Alamer, 2004, p.471): **risk coverage ratio= net equity/ risk weight assets $\geq$ 8%**

The calculation of the risk coverage ratio (Capital Adequacy Ratio) relies on the same formula established by the Basel I Accord. The Bank of Algeria, however, referred to capital as net equity, which represents core capital plus supplementary capital, excluding the elements specified by Basel.

This ratio is calculated periodically every three months, and Instruction 94-74 specified the reporting model for it. As for risk-weighted assets on the balance sheet, they are calculated based on the total amounts recorded in the balance sheet, after deducting both guarantees and necessary provisions, and then multiplying the result by a specific risk-weight factor.

**IV.1.2 Minimum Capital Requirement:** The establishment of a minimum capital requirement for banks and financial institutions represents one of the earliest rules applied in the Algerian banking system. The Algerian monetary authorities require banks and financial institutions engaged in banking activities to maintain a minimum level of capital, as stipulated in Article 01 of Regulation No. 90-01 of April 7, 1990, relating to the minimum capital of banks and financial institutions operating in Algeria.

It further required compliance by December 31, 2020, with an interim threshold of 15 billion DZD for banks and 5 billion DZD for financial institutions by December 31, 2019.

**IV.1.3 Required Reserves:** The required reserve is constituted from the total liabilities denominated in Algerian dinars and the liabilities related to off-balance sheet operations, excluding liabilities vis-à-vis the Bank of Algeria. This reserve shall not exceed 15% (Ordinance No. 03-11 of August 26, 2003, relating to the constitution of required reserves).

**IV.1.4 Ratio of Equity to Permanent Resources:** The purpose of this ratio is to maintain a balance between the uses of banks and financial institutions and their long-term resources in the national currency. The numerator of the ratio consists of equity and long-term resources, from which are deducted the unpaid portion of capital, losses, intangible assets, and establishment expenses. The denominator of

the ratio is composed of fixed assets, equity securities, doubtful receivables, and securities not listed on the official securities register. This ratio is calculated on December 31 of each year. At the end of the transitional period 2004–2006, the ratio must reach 60% as of December 31 of each year (Regulation No. 04-04 of July 19, 2004, establishing the ratio known as the equity-to-permanent resources coefficient).

**IV.1.5 Risk Concentration and Distribution Ratios:** These ratios serve to determine the level of commitments with a single beneficiary or with a group of beneficiaries exceeding a maximum threshold, in order to prevent any concentration of risks with the same client or group of clients (Alamer, 2004, p. 471).

Prudential rules applied in Algeria define two types of risk distribution, as follows (Regulation No. 91-09 of August 14, 1991, establishing prudential rules for the management of banks and financial institutions):

The maximum ratio between the total risks incurred through operations with the same beneficiary and the net amount of equity. Instruction No. 94-74, Article 2, set this ratio at 40% starting January 1, 1992; 30% starting January 1, 1993; and 25% starting January 1, 1995. Thus, risks arising from the same beneficiary must not exceed 25% of the net equity of the bank or financial institution (Regulation No. 91-09 of August 14, 1991, establishing prudential rules for the management of banks and financial institutions).

#### **Risks arising from the same beneficiary \ Net equity of the bank $\leq 25\%$**

This ratio represents the maximum level of total risks incurred by the bank as a result of its operations with beneficiaries, each of whom has obtained loans exceeding a certain percentage of the bank's net equity, relative to the total net equity. Instruction No. 94-74 set this ratio at 15%.

**IV.1.6 Foreign Exchange Position Monitoring:** The purpose of monitoring foreign exchange positions is to mitigate the risks arising from foreign currency operations. In this regard, the Bank of Algeria established two ratios (Article 3 of Instruction No. 95-78 of December 26, 1995, concerning the rules applicable to foreign exchange positions):

Ratio of the value of each currency, whether long-term or short-term, to net equity, where:

$$\frac{\text{Sum of the net values of each foreign currency position (short-term or long-term)}}{\text{Net equity}} \leq 10\%$$

This means that banks and financial institutions are required to comply, on a permanent basis, with a ratio not exceeding 10% between the net value of each

foreign currency position, whether long-term or short-term, and the bank's net equity.

Ratio of the total value of all foreign currencies, whether long-term or short-term, to net equity, where:

$$\frac{\text{Sum of the net values of all foreign currency positions (short-term and long-term)}}{\text{Net equity}} \leq 30\%$$

This means that banks and financial institutions are required to comply with a ratio not exceeding 30% between the total net value of all foreign currency positions, whether short-term or long-term, and the amount of net equity.

**IV.1.7 Deposit Guarantee Scheme:** The purpose of this scheme is to compensate depositors in the event that their deposits or other deposit-like repayable funds are unavailable (Article 3 of Regulation No. 97-04 of December 31, 1997, concerning the deposit guarantee scheme). This scheme was established in Algeria under Article 170 of Law No. 90-10 on money and credit. The Monetary and Credit Council set the deposit guarantee premium rate payable at 1%, in accordance with Article 118 of Ordinance No. 03-11. The maximum compensation amount per depositor was set at 600,000 DZD (Zidan, 2008, p. 13).

On February 21, 2016, the contribution rate payable by banks and foreign bank branches operating in Algeria to the Deposit Guarantee Fund was set at 0.25% of the total bank deposits recorded in 2014 (Instruction No. 01-16 of February 21, 2016, establishing the contribution rate to the Deposit Guarantee Fund).

## V. Mechanisms of the Bank of Algeria in Risk Management under Basel II

The Bank of Algeria sought to align with the Basel II Accord through the issuance of Regulation No. 02-03 of November 14, 2002, which obliges banks and financial institutions to establish internal control systems to address their risks. The objective of this regulation is to define the content of internal control systems that banks and financial institutions must implement, particularly those related to risk assessment, analysis, monitoring, and control. According to Article 3 of Regulation No. 02-03, the internal control systems that banks and financial institutions must establish should include the following (Regulation No. 02-03 of November 14, 2002, concerning internal control in banks and financial institutions):

- A system for monitoring operations and internal procedures;
- An accounting organization and information processing system;
- Risk and performance assessment systems;
- Risk monitoring and control systems;



- A documentation and reporting system.

These requirements are explained in detail in the same regulation from Article 4 to Article 48. Within this framework, the Algerian monetary and financial authorities implemented the AMSFA Program (Appui à la Modernisation du Secteur Financier Algérien) to support the modernization of the Algerian financial sector. This initiative enabled the establishment of internal control systems in several public and private banks. Moreover, the regulation referred to operational risks but did not include them in the denominator for calculating the capital adequacy ratio, which was addressed later through a specific instruction (Nasser, 2014, p. 53).

Additionally, Regulation No. 11-03 of May 2011 was issued concerning interbank risk monitoring. This regulation required banks and financial institutions to maintain an internal control system and to establish a system for recording and processing information that allows them to identify the amounts of loans granted and borrowings contracted, monitor the limits set for each counterparty, and inform executive bodies about compliance with these limits (Regulation No. 11-03 of May 2011, concerning interbank risk monitoring).

Furthermore, the Algerian authorities issued Regulation No. 14-01 of February 16, 2014, which obliges banks and financial institutions to continuously comply with a minimum solvency ratio of 9.5%, calculated between their total regulatory capital and the aggregate of credit risk, operational risk, and market risk. Core capital must cover credit, operational, and market risks at a minimum of 7%. In addition, a buffer, referred to as the capital conservation buffer, must be constituted of core capital covering 2.5%. This ratio must be reported quarterly to both the Banking Commission and the Bank of Algeria, in accordance with procedures established by a specific instruction issued by the latter. The Banking Commission may also require reporting at shorter intervals (Regulation No. 14-01 of February 16, 2014, concerning solvency ratios applicable to banks and financial institutions).

According to Article 5 of the same regulation, capital adequacy is calculated as follows:

$$\text{Capital Adequacy Ratio} = \frac{\text{Regulatory Capital}}{\text{Credit Risk} + \text{Operational Risk} + \text{Market Risk}} \geq 9.5\%$$

The same risk classification adopted by Basel II was applied, whereby risks are divided into three categories: credit risk, operational risk, and market risk.

## **VI. Mechanisms of the Bank of Algeria in Risk Management under Basel III**

The Bank of Algeria sought to incorporate certain innovations introduced by the Basel III Accord by taking a number of measures aimed at preparing the ground for its implementation. Among these measures are the following:

### **VI.1.Raising the Minimum Capital Requirement:**

Previously established thresholds were raised again in late 2018, setting the minimum capital at 20 billion DZD for banks and 6.5 billion DZD for financial institutions (Regulation No. 18-03 of Safar 26, 1440 / November 4, 2018, concerning the minimum capital of banks and financial institutions operating in Algeria). This measure contributes to strengthening the capital adequacy ratio.

### **VI.2.Imposing a Minimum Liquidity Ratio:**

The Bank of Algeria issued Regulation No. 11-04 of August 26, 2011, on the definition, measurement, management, and monitoring of liquidity risk. This regulation requires banks and financial institutions to comply with a ratio calculated between, on the one hand, the total available and realizable short-term assets and the financing commitments received from banks, and, on the other hand, the total demand and short-term liabilities and commitments granted. This ratio, referred to as the minimum liquidity ratio, must be maintained at a level of at least 100% (Regulation No. 11-04 of August 26, 2011, Article 1).

**VI.3.Raising the Capital Adequacy Ratio:** Banks and financial institutions are required to continuously comply with a minimum solvency ratio of 9.5%, calculated between their total regulatory capital and the aggregate of credit, operational, and market risks. Core capital must cover these risks at a minimum of 7% (Regulation No. 14-01 of February 16, 2014, concerning solvency ratios applicable to banks and financial institutions).

**VI.4.Establishing the Capital Conservation Buffer:** A buffer, known as the capital conservation buffer, must be constituted of core capital covering 2.5%. This buffer must be reported quarterly to the Banking Commission and the Bank of Algeria, in accordance with procedures specified by an instruction issued by the latter (Regulation No. 14-01 of February 16, 2014, concerning solvency ratios applicable to banks and financial institutions).

**VI.4.Establishing a Stress Testing Program:** The lessons learned from the 2008 financial crisis highlighted the need for banks to assess the potential losses that may result from crises. In this context, financial institutions are required to strengthen their resilience in the face of such crisis scenarios.

Stress tests aim to provide both a preventive and corrective perspective on the measures to be taken by banks and supervisory authorities. In this regard, and with technical support from the World Bank, the Bank of Algeria initiated the development of an integrated and dynamic stress testing model. This model consists of an automated application based on a financial projection system, incorporating severe but plausible shock scenarios. It is designed to identify and measure the vulnerabilities of banks and financial institutions, as well as their ability to withstand the assumed shocks, both at the individual institution level and across the banking system as a whole.

This application enables the evaluation of banks' and financial institutions' sensitivity to changes in risk factors arising from their banking activities (e.g., probability of default, interest rates, excessive deposit withdrawals), whether such factors occur individually or simultaneously. It also assesses the soundness of the banking sector by accounting for contagion risk among financial institutions and the impact of macroeconomic variables on the banking sector.

Stress testing further reveals the ability of banks to cope with economic difficulties and the potential decline in their capital levels, while at the macro level, it demonstrates the fragility or robustness of the national banking sector (Bank of Algeria Annual Report, 2015, p. 119).

#### **VI.4.The Information Project (Synoba Banking Rating System):**

The Synoba system is a unified supervisory method inspired by the CAMELS methodology, considered one of the best international practices. It focuses on performance and solvency assessment indicators of banks. Thanks to its predictive nature regarding risks, this system allows for (Bank of Algeria Annual Report, 2012, p. 144):

- A targeted and prompt reaction by the Banking Commission through appropriate corrective measures to address difficulties faced by a financial institution;
- A significant reduction in supervisory costs, achieved by better assessing the risks of each financial institution and making more rational use of resources;
- Targeting banks experiencing financial difficulties.

### **VII. Banking Risk Management at the Local Development Bank (BDL)**

#### **VIII.1. Definition of the Local Development Bank (BDL):**

The Local Development Bank (BDL) is a public financial institution in Algeria, established in 1985 as part of the restructuring of the national banking system. Its

core mission is to finance economic and social development projects, particularly in housing, infrastructure, and support for small and medium-sized enterprises, in addition to offering traditional banking services to individuals and businesses. Furthermore, it contributes to the implementation of Algeria's monetary and financial policies under the supervision and regulation of the Bank of Algeria.(Local Development Bank, 2025).

## VIII.2. Risk Management Mechanisms at the Local Development Bank (BDL)

As a public financial institution, the Local Development Bank (BDL) is subject to a set of prudential regulations issued by the Bank of Algeria, aligned with the Basel Committee's standards (Basel II and Basel III).

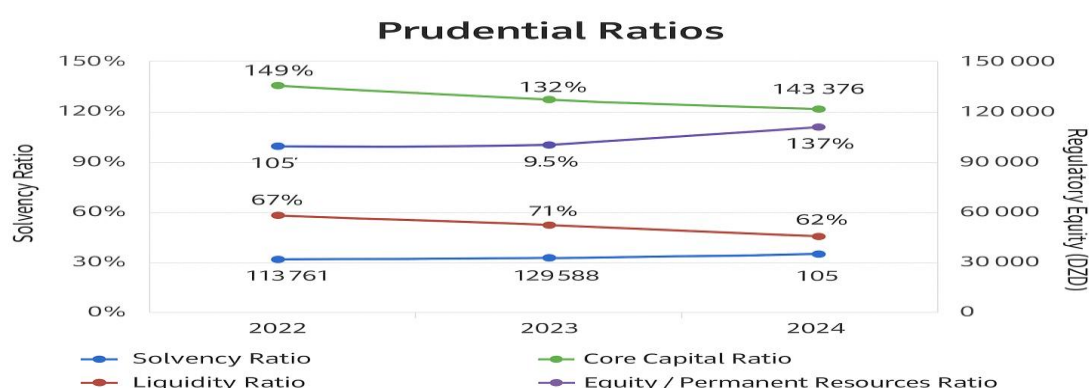
**VIII.2.1. Prudential Rules at the Local Development Bank (BDL):** The table below illustrates the prudential rules of the Local Development Bank (BDL) over a three-year period.

**Table (01): Prudential Rules at the Local Development Bank (BDL)**

| Prudential Ratios                       | 2022   | 2023   | 2024   |
|-----------------------------------------|--------|--------|--------|
| Solvency Ratio                          | 12.83% | 11.57% | 12.24% |
| Core Capital Ratio                      | 10.56% | 9.56%  | 10.43% |
| Liquidity Ratio                         | 149%   | 132%   | 137%   |
| Equity / Permanent Resources Ratio      | 57%    | 71%    | 62%    |
| Regulatory Equity (prudential) (in DZD) | 113761 | 129588 | 143376 |

Source: (Bank of Local Development. 2024).

**Fig.(01): Prudential Rules at the Local Development Bank (BDL)**



Source: (Bank of Local Development. 2024).

The chart presents a comparison of the key prudential indicators over a three-year period.

- **Solvency Ratio:** The chart shows that the solvency ratio stood at 12.83% in 2022, then decreased to 11.57% in 2023, falling below the required standard

(12%). This may indicate an increase in risk-weighted assets or a decline in capital. However, it rose again to 12.24% in 2024, reflecting corrective measures taken by the bank.

- **Core Capital Ratio:** The ratio demonstrates relative stability above the required benchmark of 7%. It was 10.56% in 2022, then declined slightly to 9.56% in 2023, before rising again to 10.43% in 2024. This indicates that the bank maintains an adequate level of core capital to cover risks.
- **Liquidity Ratio:** This represents the bank's strongest performance indicator. The chart shows very high ratios: 149% in 2022, 132% in 2023, and 137% in 2024. All of these figures significantly exceed the required standard (100%), confirming that the bank enjoys strong liquidity and an excellent capacity to meet its short-term obligations.
- **Capital-to-Permanent Resources Ratio:** In 2022, the ratio was 57%, below the required threshold of 60%. This represented a weakness, as the bank at that time relied more heavily on short-term resources to finance its operations. It then increased to 71% in 2023, surpassing the standard by a wide margin, which indicates that the bank had a solid base of permanent funding. In 2024, the ratio decreased to 62%, though it remained above the minimum requirement. This suggests that the bank is in a sound and stable position, financing its long-term assets through permanent funding sources.
- **Regulatory Equity:** The chart illustrates a steady growth in the bank's equity, rising from 113,761 in 2022 to 143,376 in 2024. This continuous growth reflects a sustained strengthening of the bank's capitalbase, making it more resilient and better positioned to face future risks.

It can thus be concluded that the Local Development Bank (BDL) effectively complies with the prudential rules imposed by the Bank of Algeria, and even exceeds them in several indicators (liquidity, solvency, and equity). The only exception was in 2022, when the capital-to-permanent resources ratio fell below 60%. However, this situation was corrected in 2023 and 2024.

Based on the above, the main risks faced by the Local Development Bank (BDL) can be summarized along with the mechanisms for their management as follows:

**Table (02): BDL Risk Management Mechanisms**

| Risk Type   | BDL Risk Management Mechanisms                                                                                 |
|-------------|----------------------------------------------------------------------------------------------------------------|
| Credit Risk | Assessing customer creditworthiness; setting lending limits; provisioning for non-performing loans             |
| Market Risk | Monitoring foreign exchange positions; setting exposure limits to exchange rate and interest rate fluctuations |

|                                |                                                                                                             |
|--------------------------------|-------------------------------------------------------------------------------------------------------------|
| Liquidity Risk                 | Respecting minimum liquidity ratio (100%); balancing liquid assets with liabilities                         |
| Operational Risk               | Strengthening internal control systems; developing cybersecurity; forming specialized risk management teams |
| Compliance and Reputation Risk | Compliance with Bank of Algeria regulations; AML/CFT policies                                               |

**Source:** Prepared by the researchers.

## VIII. Conclusion

The study concluded that the Bank of Algeria plays a crucial role in strengthening the risk management framework within Algerian banks by adopting international prudential standards derived from the Basel Committee regulations. The results indicated that the implementation of these standards has significantly contributed to improving supervisory performance and enhancing the efficiency of practices employed in managing various types of risks within the banking sector.

Furthermore, the study, through the case analysis of the Local Development Bank (BDL), showed that the bank demonstrates a relatively high level of compliance with the supervisory instructions issued by the Bank of Algeria, particularly regarding capital adequacy, risk assessment systems, and the development of internal control tools. This commitment reflects the bank's intention to strengthen its financial resilience and its ability to withstand shocks, in alignment with global developments in the banking sector.

## IX .1Discussion of the Hypotheses

Hypothesis 1: The Bank of Algeria's implementation of Basel Committee regulations has improved the risk management system in Algerian banks.

Accepted: Integrating Basel requirements into the Bank of Algeria's regulatory framework positively affected banks' risk management by enhancing assessment tools, internal controls, and compliance with international standards, while strengthening financial stability through stricter capital and liquidity requirements.

- Hypothesis 2:The Local Development Bank (BDL) complies with the risk management standards imposed by the Bank of Algeria.

Accepted: BDL has aligned its policies with the Bank of Algeria's supervisory instructions, adopting precise credit classification systems, periodic risk assessments, and strengthened internal controls, while fostering a culture of compliance and governance.

- Hypothesis 3: The Local Development Bank (BDL) adheres to the Bank of Algeria's capital adequacy instructions.

Accepted: BDL maintains the minimum capital adequacy ratios required by the Bank of Algeria, consistent with Basel II and III, ensuring sufficient capital buffers to absorb potential losses and mitigate financial instability.

## **IX.2 Results**

The Bank of Algeria has played an important role in keeping pace with developments in the global banking system by adopting and implementing the Basel Committee standards on banking supervision. This has enabled significant progress in the field of banking risk management, thereby contributing to the strengthening of the financial stability of the Algerian banking system. The main findings can be summarized as follows:

- The Bank of Algeria has taken significant steps to enhance risk management in the Algerian banking system in order to ensure the stability of the banking sector and strengthen its ability to withstand various risks, by implementing international Basel standards. These mechanisms have included the legal and regulatory framework, banking supervision, international cooperation, awareness and training, in addition to prudential measures, which represent the most important tool in risk management.
- The Bank of Algeria seeks to align with modern international standards, particularly in the areas of banking supervision and risk management, albeit with some delay. It has adopted a set of prudential rules, most notably: the minimum capital requirement, the compulsory reserve, rules governing risk distribution and diversification, monitoring of foreign exchange positions, and the deposit guarantee scheme. For instance, Regulation No. 91-09 of 14 August 1991 established prudential rules for the management of banks and financial institutions, followed by Instruction No. 94-74 of 29 November 1994, which specified the modalities of applying prudential rules for bank management and set out the reporting templates to be used.
- The Algerian authorities issued Regulation No. 14-01 of 16 February 2014, which defined solvency ratios applicable to banks and financial institutions. It required them to maintain a capital adequacy ratio greater than or equal to 9.5%, in addition to a 2.5% capital conservation buffer, in order to comply with Basel II and prepare for the adoption of Basel III.
- The Local Development Bank (BDL) is subject to a set of prudential regulations issued by the Bank of Algeria, which are aligned with the Basel Committee standards, particularly Basel II and Basel III.

### **IX.3 Practical Recommendations**

#### **Recommendations for the Bank of Algeria:**

- Enhance preemptive supervision by developing quantitative and qualitative risk analysis tools in banks.
- Provide training programs on the latest risk management practices.
- Improve the legislative framework in line with ongoing amendments in Basel III and IV regulations.
- Enforce stricter standards on banks that repeatedly exhibit weaknesses in compliance.
- Encourage digital transformation in banks to address cyber risks, which pose an increasing threat.

#### **Recommendations for the Local Development Bank (BDL):**

- Develop information systems to facilitate more accurate and faster risk assessment.
- Invest in human resources training to raise awareness about the importance of a risk management culture.
- Adopt internal risk assessment models that comply with advanced Basel recommendations.
- Develop early warning systems, particularly regarding credit and market risks.

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