

The Role of Bank Capital in Absorbing Credit Risk According to the Basel Committee on Banking Supervision: The Case of the Algerian Banking System

دور رأس مال البنوك في امتصاص المخاطر الائتمانية وفقاً للجنة بازل للرقابة المصرفية:

حالة النظام المصرفي الجزائري

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Received: 20/07/2025

Accepted: 24/09/2025

Published: 30/09/2025

Abstract:

This study aims to analyze the role of bank capital in absorbing credit risk in Algeria, by assessing the extent to which banks comply with capital adequacy requirements in accordance with the Basel Committee's recommendations. The researcher employed a descriptive and analytical approach, combining a theoretical review of the Basel accords with a statistical analysis of financial data from Algerian banks—both public and private. The findings indicate that the Algerian banking system demonstrates relative regulatory robustness and solid compliance, as capital adequacy ratios have surpassed the minimum thresholds stipulated in Basel III, despite a downward trend in the overall solvency ratio. Public banks have shown a steady improvement in both total and Tier 1 solvency ratios, with annual growth rates indicating structural reforms such as capital increases and enhanced asset management. Furthermore, the narrowing gap between the two solvency ratios signals an improvement in the quality—not just the quantity—of regulatory capital. Meanwhile, private banks have maintained relative stability, without significant qualitative growth.

Keywords: Total Capital Ratio; Tier 1 Capital Ratio; Core Capital; Risk-Weighted Assets; Financial Resilience.

JEL Classification Codes : G01, G11, G21, G28, G32, G33,

ملخص:

تهدف هذه الدراسة إلى تحليل دور رأس مال البنوك في امتصاص المخاطر الائتمانية في الجزائر، من خلال تقييم مدى احترام البنوك لمتطلبات كفاية رأس المال وفقاً لمقررات لجنة بازل. اعتمد الباحث منهجاً وصفيّاً تحليليّاً يجمع بين دراسة نظرية لمقررات لجنة بازل وتحليل إحصائي للبيانات المالية للبنوك الجزائرية، العمومية والخاصة. وخلصت النتائج إلى أنّ النظام المصرفي الجزائري يُظهر صلابة تنظيمية نسبية وامتثالاً تنظيميّاً جيداً، حيث تجاوز الحدود الدنيا لكفاية رأس المال وفق اتفاقية بازل III رغم الاتجاه التنازلي في نسبة الملاءة الكلية. وقد أظهرت البنوك العمومية تحسناً تصاعدياً في نسب الملاءة الكلية والقاعدية، بنسب نمو متزايدة سنوياً حيث يشير هذا التحسن إلى تنفيذ إصلاحات بنوية، مثل زيادة رأس المال، وتحسين إدارة الأصول وتقلّص الفجوة بين النسبتين، مما يُظهر تعزيزاً لنوعية رأس المال وليس فقط كميته. في حين حافظت البنوك الخاصة على استقرار نسبي دون نمو نوعي. كلمات مفتاحية: نسبة الملاءة الكلية، نسبة الملاءة القاعدية، رأس المال الأساسي، المخاطر المرجحة، الصلابة المالية.

تصنيفات JEL: G01 ، G33 ، G11 ، G32 ، G28 ، G21

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INTRODUCTION:

Banking experts have increasingly emphasized the importance of bank capital, viewing it as the first line of defence against potential losses resulting from the deployment of bank funds in inherently risky activities such as financing and various types of investments. This responsibility is particularly significant considering banks' fundamental obligation to safeguard depositors' funds. In this context, financial specialists have long sought to develop standards for measuring capital adequacy, which have evolved over time in various forms.

The earliest standard was the ratio of a bank's capital to total deposits. This benchmark was globally adopted in 1914 at a rate of 10%, meaning that total deposits should not exceed ten times the bank's capital. This standard remained in use until 1942, after which many banks—particularly in the United States—began to abandon it.

Following World War II, monetary authorities and banking institutions shifted toward a new standard based on the ratio of capital to total assets. This approach emphasized the importance of how funds were utilized and the liquidity of available assets. Later, the focus evolved to calculating capital as a percentage of total loans and investments, excluding certain low-risk assets such as cash, government securities, and state-guaranteed loans. This method began to be implemented around 1948.

By 1979, U.S. monetary authorities placed greater emphasis on capital as a regulatory tool to enhance oversight of banks and banking credit, within the framework of what became known as the CAMEL rating system (Capital Adequacy, Asset Quality, Management Quality, Earnings, and Liquidity). Subsequently, in 1999, the Basel Committee introduced a set of proposals aimed at expanding the scope of capital measurement to include new categories of risks introduced by the modern banking environment. These proposals sought to increase financial soundness and stability across the banking sector.

In this context, accurately evaluating capital adequacy using precise indicators becomes essential for sound bank classification and for strengthening the effectiveness of banking supervision. From this perspective, the following research problem can be posed:

- **Research Problem:** To what extent do Algerian banks adhere to the capital adequacy standards established by the Basel Committee, in a manner that ensures their resilience in absorbing credit risk and maintaining financial stability?
- **Research Hypotheses:** Based on the preceding discussion, the following hypotheses are proposed:
 - Enhancing the capital adequacy of Algerian banks improves their capacity to absorb credit risk.
 - Solvency ratios differ between public and private banks in Algeria.
 - Implementing capital structure reforms positively influences bank performance and helps narrow the gap between total capital and core capital.
- **Objectives of the Study:**

This study aims to:

 - Analyse the evolution of financial solvency ratios in Algerian banks during the period 2019–2023.
 - Assess the degree of compliance with Basel III regulations.

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- Examine the impact of capital quality on financial stability within the banking sector
- **Significance of the Topic:** The importance of this research lies in the pivotal role bank capital plays in promoting financial stability and mitigating crises—especially in an emerging economy like Algeria, which heavily relies on banking-sector financing and lacks a developed financial market.
- **Methodological Approach:** A descriptive analytical methodology has been adopted, combining theoretical examination of Basel Committee provisions and their application in the Algerian context, along with statistical analysis of data from public and private banks over the specified time period.

Review of research literature: Many researchers have studied the role of bank capital in absorbing credit risk and the extent of the impact of credit risk on banks financial performance, we try to summarise a set of such studies as follow:

- 1.(Dagher & and others, 2020, pp. 249–291) – ***Bank Capital: A Seawall Approach***
The authors concluded that banks require capital ratios ranging between 15% and 23% of risk-weighted assets to adequately absorb losses during financial crises. High capital buffers serve as an effective protective barrier against systemic failures in the banking sector.
- 2.(Saleh & Abu Afifa, 2020, pp. 1-13)– ***Credit Risk, Liquidity Risk and Bank Capital***
This study demonstrated that bank capital has a positive impact on profitability, while helping mitigate the effects of credit and liquidity risks. The implementation of Basel standards was found to enhance banking efficiency and strengthen resilience to financial shocks.
- 3.(Sharma & Jain , 2025) – ***Capital and Systemic Risk:*** The study revealed that in emerging economies, bank capital has a stronger impact on reducing systemic risk compared to developed countries. Moreover, liquidity alone was deemed insufficient, underscoring the need for adequate capital buffers alongside liquid assets.
- 4.(Dewangan & Pandey, 2011, pp. 236-246)– ***Capital Requirements and Financial Stability***
According to the findings, capital reserves enable banks to withstand financial shocks, particularly during major crises such as the 2008 collapse. Basel III frameworks were shown to enhance financial stability and reduce the likelihood of systemic breakdowns.
- 5.(Benchenna & i Korichi, 2023 , pp. 31-39)– ***Credit Risk Management and Its Impact on the Profitability of Algerian Banks*** This panel data study (2009–2020) found that capital adequacy ratio and loan loss provisions are key indicators influencing bank profitability. The authors concluded that higher capital buffers reduce non-performing loans, thereby enhancing financial performance.

1- Components of Bank Capital According to Basel I Framework: According to Basel I regulations, bank capital is defined as the total value contributed by founders and shareholders in exchange for common or preferred shares, along with accumulated reserves and retained earnings over time. Capital represents the cornerstone of a bank’s financial soundness, acting as the first line of defence against risks—particularly credit risk. The Basel I framework classifies regulatory capital into two main tiers (BCBS, BIS, Strengthening the Resilience of the Banking Sector, 2009, & <https://www.bis.org/publ/bcbs164.pdf>, 2009):

1-1 Tier 1 – Core Capital: Tier 1 capital, also known as core capital, comprises the highest

quality components of a bank's capital structure, characterized by their ability to absorb losses on a going-concern basis. These elements are permanent in nature and form the foundation of the bank's financial resilience. The main components include:

- **Paid-up Capital:** The value of fully issued and paid common shares held by shareholders.
- **Disclosed Reserves:** Profits retained and allocated to legal or general reserves, including issuance premiums and undistributed earnings from previous years.
- **Minority Interests:** Shareholders' equity in subsidiaries where ownership exceeds 50%, provided consolidated financial statements are applied.

Exclusions from Tier 1: Certain elements are explicitly excluded from Tier 1 due to their limited ability to absorb losses or their non-permanent nature, including:

- Unrealized revaluation reserves.
- Cumulative preference shares.

1-2 Tier 2 – Supplementary Capital: Tier 2 capital, also referred to as supplementary capital, encompasses a range of subordinated instruments that support a bank's financial resilience, particularly in absorbing unexpected losses. Although these components possess lower quality compared to Tier 1 capital in terms of immediate loss absorbency, they are nonetheless recognized within regulatory frameworks as essential for reinforcing solvency. The principal elements of Tier 2 include:

- **Undisclosed Reserves:** Profits realized by the bank that are not publicly disclosed in the official financial statements. Their inclusion as regulatory capital is subject to verification and approval by supervisory authorities, ensuring that such reserves meet minimum standards of reliability and permanence.
- **Revaluation Reserves:** Represent valuation gains resulting from the reassessment of bank-owned assets—most notably fixed assets such as real estate or long-term investments. Due to their non-cash nature and potential volatility, these reserves are typically incorporated into capital calculations at a discounted rate to reflect their limited capacity to absorb losses in a timely manner.
- **Subordinated Debt:** Long-term debt instruments—typically with maturities of no less than five years—that are unsecured and subordinated to other bank obligations. These instruments are designed to absorb losses only in the event of liquidation and must meet specific conditions (e.g., non-redeemability before maturity, loss-bearing capacity) to be considered eligible capital under regulatory standards.
- **General Provisions:** These refer to credit risk buffers that are not tied to specific impaired exposures. Instead, they are established to account for anticipated but non-specific credit losses. Their recognition within Tier 2 capital hinges on strict accounting rules that ensure they are prudently calculated and not duplicative of specific provisions.
- **Hybrid Instruments:** Financial instruments with both debt-like and equity-like features. These may include convertible subordinated bonds or preference shares with loss-absorption capacity. Under stress conditions or supervisory intervention, hybrid instruments can be reclassified as equity, thereby enhancing the institution's capital base.

Regulatory Note: Under the Basel Committee's guidelines, the inclusion of Tier 2 capital in the calculation of the capital adequacy ratio is capped. Specifically, Tier 2

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capital may not exceed the amount of Tier1 capital, thereby preserving the overall quality of regulatory capital.

This classification highlights the Basel Committee's deliberate emphasis not merely on the quantity of capital held by banks, but more importantly on its quality and ability to effectively absorb losses. The core capital components, commonly referred to as Tier 1 capital, are considered the primary safeguard against financial shocks, ensuring the bank's ongoing viability during periods of distress. In contrast, Tier 2 capital functions as a supplementary layer of protection, reinforcing the bank's capital base during heightened periods of financial stress. This two-tiered structure underscores the Committee's objective of strengthening the resilience of financial institutions through both adequate and high-quality capital.

The capital components adopted by the Bank of Algeria align with those established by the Basel Committee, particularly regarding the division of capital into two main tiers: Tier 1 (core capital) and Tier 2 (supplementary capital). This alignment was confirmed through Instruction No. 94-74 dated December 29, 1994, concerning the method for calculating banks' capital adequacy ratio. The instruction stipulated the necessity of adhering to the same capital classification introduced by the Basel Committee, in the context of strengthening risk oversight and ensuring the soundness of the Algerian banking sector.

Instruction No. 94-74 further specifies which elements must be included in—and excluded from—the calculation of regulatory capital:

- Components to be included in regulatory capital:

- ✓ Paid-up capital
- ✓ Legal and general reserves
- ✓ Retained earnings
- ✓ Financial instruments qualifying as supplementary capital under prescribed conditions.

- Items to be excluded from regulatory capital:

- ✓ Unrealized losses
- ✓ Intangible assets
- ✓ Cumulative preference shares (consistent with the Basel Committee's treatment).

2- Components of Bank Capital According to Basel II: During the 1990s, the increasing exposure of banks to various forms of market risk—particularly fluctuations in exchange rates, interest rates, and securities prices—highlighted the inadequacy of traditional capital structures (Tier 1 and Tier 2) in absorbing such dynamic risks. In response, the Basel Committee on Banking Supervision introduced a third tier of regulatory capital, known as Tier 3, as part of the Basel II framework issued in January 1996. This tier was designed exclusively to address market risk and was not intended to cover credit or operational risks. Tier 3 capital primarily consists of short-term subordinated debt instruments provided by investors, subject to regulatory approval and specific qualifying conditions. These instruments serve as an auxiliary and temporary buffer, supplementing the higher-quality components of capital. Tier 3 is characterized by (Tarbert, 2011, p. 18) :

- A lower loss-absorption capacity relative to Tier 1 and Tier 2 capital.
- Exclusive allocation to cover market risk exposures, particularly those arising from trading activities and price volatility.
- Inclusion of short-term financial instruments, contrasting with the long-term instruments typically associated with Tier 2.

To be eligible as Tier 3 capital, instruments must fulfil the following regulatory criteria:

1. They must be unsecured and fully paid-in at the time of issuance.
2. They must have a minimum original maturity of two years.
3. Early repayment is prohibited unless explicitly authorized by the supervisory authority, to prevent an abrupt reduction in regulatory capital.
4. The amount of Tier 3 capital may not exceed 250% of Tier 1 capital, ensuring a balanced capital structure.
5. Tier 3 may be utilized solely to meet market risk capital requirements, and not for credit or operational risk coverage.

The introduction of Tier 3 was a strategic effort to provide regulatory flexibility in a rapidly evolving financial environment. However, the limited quality and short-term nature of Tier 3 instruments ultimately led to their phasing out under Basel III, which favoured a more resilient and permanent capital base focused on core capital adequacy and systemic stability. In the Algerian banking sector, monetary authorities were unable to implement Tier 3 in accordance with Basel II due to a range of institutional and infrastructural challenges. Chief among these were the absence of domestic credit rating agencies, the lack of internal credit assessment systems in many banks, and the insufficient adoption of advanced technological infrastructure and data collection systems. These deficiencies significantly hindered the practical and comprehensive implementation of Basel II in Algeria, particularly with respect to the effective deployment of Tier 3 capital instruments.

3-Components of Bank Capital According to Basel III Framework:

The Basel Committee on Banking Supervision announced a set of banking sector reforms on September 12, 2010, following its meeting at the Bank for International Settlements (BIS) headquarters in Basel, Switzerland. These reforms were endorsed by the G20 leaders at their summit in Seoul, South Korea, on November 12, 2010. Basel III rules require banks to significantly strengthen their resilience against future financial crises and to overcome financial distress independently, as much as possible, without the need for assistance or intervention by central banks or governments. Basel III aims to enhance the robustness of the banking sector and its capacity to absorb losses, particularly amid market volatility and financial turmoil (BCBS, BIS, Basel III: Finalising post-crisis reforms, 2017, & <https://www.bis.org/bcbs/publ/d424.htm>, 2017). To achieve this, the structure of regulatory capital was redefined and reclassified according to its loss-absorbing capacity in both the going-concern and gone-concern scenarios, with specific minimum thresholds and strict eligibility criteria imposed for each category.

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Regulatory capital under Basel III is structured into three main components (BCBS, BIS, Basel III: A global regulatory framework for more , 2011, & <https://www.bis.org/publ/bcbs189.htm>, 2011):

- Common Equity Tier 1 (CET1).
- Additional Tier 1 Capital (AT1).
- Tier 2 Capital.

3-1 Common Equity Tier 1 (CET1) (Giordana, G. A & Schumacher, 2017 , p. 15): CET1 constitutes the bank's first line of defense against operational and non-operational losses. It reflects the bank's ability to continue performing its essential functions during financial shocks. As the highest-quality form of capital, CET1 includes common equity, retained earnings, and legal reserves that form the foundation of the financial statements. Its strength lies in its permanent and unconditional ability to absorb losses. CET1 provides a high level of confidence to depositors, investors, and regulators and is a primary indicator of a bank's financial stability. Under Basel III, banks must maintain a minimum CET1 ratio of 4.5% of risk-weighted assets (RWA) at all times.

3-2 Additional Tier 1 Capital (AT1): AT1 consists of financial instruments that possess specific regulatory features, such as convertible preferred shares or contingent convertible bonds (CoCos) that can be converted into equity under predefined financial stress scenarios. These instruments must have the capacity to absorb losses, either through value reduction or conversion, to support the bank's going-concern status. AT1 complements CET1 by providing an additional protective buffer that allows the bank to withstand acute financial pressures. It also helps reduce the risk of insolvency by strengthening the bank's capacity to absorb losses without disrupting its operations. CET1 and AT1 together must amount to at least 6% of the bank's risk-weighted assets.

3-3 Tier 2 Capital: Tier 2 is considered the third line of defense after CET1 and AT1, and it is primarily used to absorb losses in the event of liquidation. It typically includes:

- Long-term subordinated debt instruments (with a maturity of at least 5 years)
- Other eligible capital reserves (subject to strict revaluation conditions)

The amount of Tier 2 capital that may be recognized for regulatory purposes must not exceed 100% of CET1. The aggregate of CET1, AT1, and Tier 2 must equal or exceed 8% of risk-weighted assets.

3-4 Additional Prudential Capital Requirements under Basel III: Basel III introduced three macroprudential buffers aimed at controlling procyclical credit expansion and enhancing the banking system's resilience (BCBS, BIS, Basel III: A global regulatory framework for more , 2011, & <https://www.bis.org/publ/bcbs189.htm>, BIS, 2011):

a. Capital Conservation Buffer: An additional 2.5% of CET1, bringing the total minimum CET1 requirement to 7%. This buffer is intended to preserve capital in periods of economic growth, providing a cushion to absorb losses in times of economic stress.

b. Countercyclical Capital Buffer: This buffer may be imposed at up to 2.5% of CET1, depending on macroeconomic conditions, particularly during periods of excessive credit

growth or asset bubbles. It is designed to mitigate the build-up of systemic risk during economic booms.

c. Leverage Ratio: Defined as a minimum ratio of 3% of Tier 1 capital to total non-risk-weighted assets, the leverage ratio aims to contain excessive balance sheet expansion and address potential weaknesses in risk-weighted asset calculations.

The stricter and phased capital requirements introduced under Basel III represent a substantial enhancement compared to Basel II. Banks are now more capable of withstanding significant financial shocks without compromising their stability. Additionally, the capital buffers provide a flexible mechanism to counter economic cycles, thereby curbing excessive credit growth during expansionary periods and reinforcing the resilience of the banking system as a whole.

Table (1): Basel III Implementation Timeline for Capital Structure Requirements (2011–2019)

	2011	2012	2013	2014	2015	2016	2017	2018	As of 1 January 2019
Leverage Ratio	Supervisory monitoring		Parallel run 1 Jan 2013 – 1 Jan 2017 Disclosure starts 1 Jan 2015					Migration to Pillar 1	
Minimum Common Equity Capital Ratio			3.5%	4.0%	4.5%	4.5%	4.5%	4.5%	4.5%
Capital Conservation Buffer						0.625%	1.25%	1.875%	2.50%
Minimum common equity plus capital conservation buffer			3.5%	4.0%	4.5%	5.125%	5.75%	6.375%	7.0%
Phase-in of deductions from CET1 (including amounts exceeding the limit for DTAs, MSRs and financials)				20%	40%	60%	80%	100%	100%
Minimum Tier 1 Capital			4.5%	5.5%	6.0%	6.0%	6.0%	6.0%	6.0%
Minimum Total Capital			8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Minimum Total Capital plus conservation buffer			8.0%	8.0%	8.0%	8.625%	9.25%	9.875%	10.5%
Capital instruments that no longer qualify as non-core Tier 1 capital or Tier 2 capital			Phased out over 10 year horizon beginning 2013						

Source: Basel Committee on Banking Supervision (2011) Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems. Bank for International Settlements, Revised Version, Basel, June 2011.

with the Basel III framework during the period from 2011 to 2019. This regulatory framework, introduced by the Basel Committee on Banking Supervision (BCBS), aims to enhance the quality of capital and strengthen banks' resilience to financial shocks. The major phases of implementation can be summarized as follows:

1. **Leverage Ratio:** Initially subject to supervisory monitoring between 2011 and 2012, the leverage ratio entered a parallel run phase from 2013 to 2017, with public disclosure beginning in 2015. It was fully incorporated into Pillar 1 requirements starting in 2018.
2. **Minimum Common Equity Capital Ratio:** Representing the core component of high-quality capital, the minimum Common Equity Tier 1 (CET1) requirement began at 3.5% in 2013, increasing incrementally to 4.5% by 2015. This reflects efforts to ensure that banks maintain stronger internal capital positions.
3. **Capital Conservation Buffer:** Designed to absorb losses during periods of economic stress, the Capital Conservation Buffer was phased in beginning at 0.625% in 2016, rising annually until reaching its full level of 2.5% by January 1, 2019.

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4. **Minimum CET1 Plus Conservation Buffer:** The combined requirement for CET1 capital plus the buffer increased from 3.5% in 2013 to 7.0% in 2019, reflecting an integrated approach to capital adequacy.
5. **Minimum Tier 1 Capital Ratio:** Increased from 4.5% to 6.0%, this metric excludes Tier 2 capital and focuses on core financial soundness, providing a stricter solvency measure.
6. **Minimum Total Capital Requirement:** Although the baseline minimum capital requirement remained at 8.0%, the addition of the conservation buffer raised the effective requirement to 10.5% by 2019, reflecting a significant tightening in regulatory expectations.
7. **Phasing Out Non-Qualifying Instruments:** Basel III introduced a 10-year transitional period beginning in 2013 for the gradual elimination of non-compliant capital instruments, such as certain hybrid securities and non-loss-absorbing preferred shares. These instruments were phased out at a rate of 10% per year, improving the transparency, quality, and credibility of bank capital. The objective was to ensure that capital components included in regulatory capital are capable of fully absorbing losses in stress scenarios (BIS, 2013).

4- Capital Adequacy Ratio in the Algerian Banking System: The Algerian authorities place significant emphasis on ensuring financial stability within the banking sector, given its pivotal role in financing the national economy amid the absence of an active and developed financial market. In this context, the year 2023 witnessed the promulgation of the new Monetary and Banking Law No. 23-09, which aims to reinforce the stability of the financial system in general and the banking system in particular. This is achieved by expanding the powers of both the Money and Credit Council and the Banking Commission. The latter, affiliated with the Bank of Algeria, remains the designated authority responsible for overseeing the implementation of prudential regulations across financial institutions. In line with efforts to institutionalize governance and regulatory standards, the monetary authority issued a series of decrees and regulations concerning capital requirements and solvency ratios. Notably, Regulation No. 14-01, dated February 16, 2014 and published in Official Gazette No. 56 (September 2014), raised the minimum capital adequacy ratio from 8% to 9.5%, effective October 1, 2014. Under this regulation, Tier I capital must cover no less than 7% of total credit, market, and operational risks, in addition to a capital buffer of 2.5%. Furthermore, Regulation No. 24-02, issued on February 6, 2024 and published in Official Gazette No. 18 (March 2024), established new minimum capital requirements for banks and financial institutions. It stipulates that the capital must be fully paid in cash prior to submitting a licensing application, with thresholds set as follows:

- 20 billion DZD for commercial banks,
- 10 billion DZD for digital banks,
- 6.5 billion DZD for financial institutions.

This regulatory update marks a significant revision of previous frameworks, which, prior to 2018, set minimum capital requirements at 15 billion DZD for banks and 5 billion DZD for financial institutions.

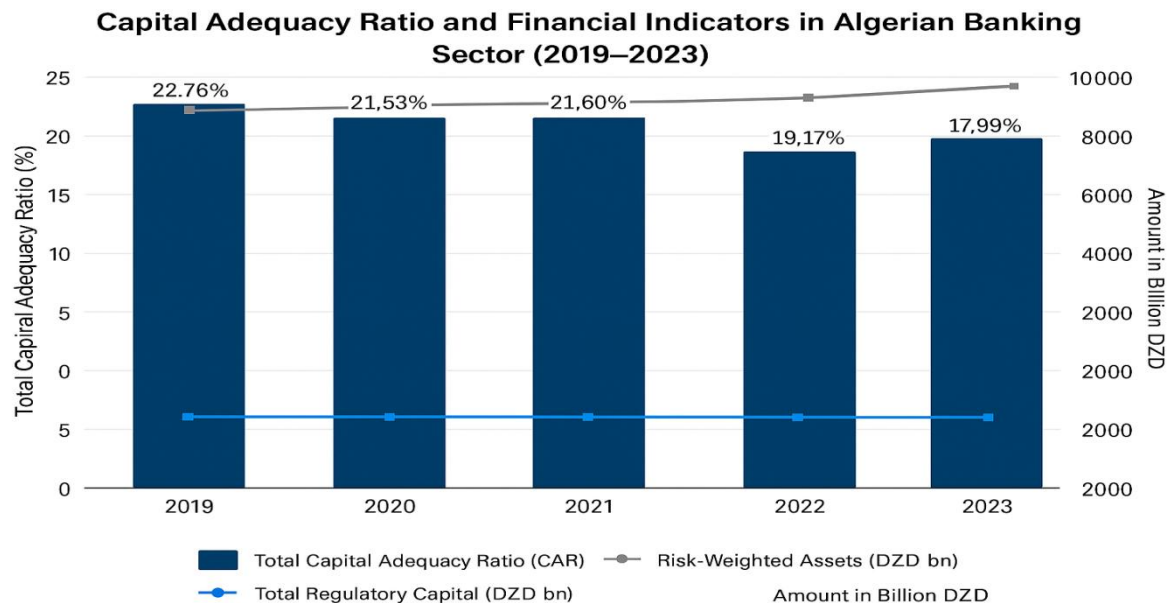
4-1 Total Solvency Ratio in the Algerian Banking System: The Total Solvency Ratio is a financial indicator used to assess a bank's overall capacity to absorb risk by comparing total

regulatory capital (including both Tier I and Tier II capital) to risk-weighted assets. It is one of the core metrics adopted in banking supervision, as it reflects the institution's ability to withstand various types of financial risks without compromising its stability.

This ratio holds particular importance in evaluating the soundness of the banking sector and is employed by regulatory authorities to ensure compliance with international capital adequacy standards, notably those issued by the Basel Committee. Basel III stipulates a minimum total capital adequacy ratio of 10.5%, distributed between 8% mandatory Tier I capital and a 2.5% capital buffer, designed to enhance banks' resilience against unexpected economic and financial shocks.

In Algeria, the total solvency ratio is a central tool within the broader banking reform framework aimed at strengthening financial stability. The Bank of Algeria has worked to align minimum capital adequacy thresholds with international standards while accounting for the specific characteristics of the national economic environment. Recent statistical data covering the period from 2019 to 2023 reveal that the total solvency ratio peaked at 22.76% in 2019, indicating a relatively robust banking system. However, it declined gradually to 17.99% in 2023, which may signal reduced risk coverage capacity, weaker capital reinforcement, lower retained earnings, or an increase in high-risk lending. This downward trend is attributed to a decrease in total regulatory capital from 2,147 billion DZD in 2019 to 2,029 billion DZD in 2023, alongside an increase in risk-weighted assets from 9,761 billion DZD to over 10,000 billion DZD during the same period—placing pressure on the solvency ratio. Despite this decline, the 17.99% ratio remains above the Basel III global minimum of 10.5%, suggesting that the Algerian banking system is still within a safe zone, albeit with a downward trajectory that warrants close monitoring.

Fig (1): Capital Adequacy Ratio and Financial Indicators in Algerian Banking Sector (2019–2023)



Source: Bank of Algeria. (2023b). Annual Report 2022–2023. Retrieved from <https://www.bank-of-algeria.dz>

4-2 Total and Tier 1 Capital Adequacy Ratios in Public and Private Banks: The Tier 1 Capital Ratio—also known as the Core Capital Adequacy Ratio—is a precise measure used to evaluate a bank's fundamental financial strength, namely its ability to absorb losses without suspending operations or resorting to external support. This ratio is defined as the relationship

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between a bank's Tier 1 (core) capital and its total risk-weighted assets (RWA). Under the Basel III framework, banks are required to maintain a minimum Tier 1 Capital Ratio of 6%.

The Total Capital Adequacy Ratio in the Algerian banking system peaked in 2019 at 22.76%, reflecting a relatively strong banking sector, before declining gradually to 17.99% by 2023. This downward trend may signal a reduced capacity of banks to cover risks, weaker reinforcement of proprietary capital, lower retained earnings, or an increase in higher-risk lending. As illustrated above, the main drivers of this decline were a reduction in total regulatory capital—from DZD 2,147 billion in 2019 to DZD 2,029 billion in 2023—and a rise in risk-weighted assets—from DZD 9,761 billion in 2019 to over DZD 10,000 billion in 2023—which together exerted downward pressure on the overall capital adequacy ratio.

Despite this decrease, a ratio of 17.99% remains comfortably above the Basel III global minimum of 10.5%, although the trend points downward and warrants close monitoring. Data from the figure below covering the period 2019–2023 indicate that the Algerian banking sector—particularly public banks—has recorded continuous improvements in solvency indicators, as follows:

▪ **Public Banks :** In 2019, public banks recorded a total capital adequacy ratio of 17.81%, a level that—while comfortably above the Basel III minimum of 10.5%—nonetheless indicates relative vulnerability; their Tier 1 ratio stood at 13.67%. The following year witnessed a marked improvement, as the total ratio surged to 20.92% (an increase of 3.1 percentage points) and the Tier 1 ratio rose to 16.70%, reflecting both fresh capital injections and enhancements in asset quality. Between 2021 and 2023, these ratios continued to climb, albeit at a more moderate pace. By 2023, the total ratio had reached 23.68%, with the Tier 1 ratio at 18.81%, narrowing the gap between overall and core capital metrics—an encouraging sign of strengthened core-capital formation.

In summary, Algerian public banks have achieved steady, gradual growth in their capital metrics. This progression underscores improvements in their financial structure, a shift toward greater reliance on core equity, and enhanced risk-management practices that bolster their resilience to future shocks.

▪ **Private Banks:** Private banks in Algeria commenced 2019 with relatively high capital buffers, reporting a total capital adequacy ratio of 22.81% and a Tier 1 ratio of 17.43%. Over the period from 2020 through 2023, these ratios exhibited only marginal variation: the total ratio fluctuated between 22.2% and 22.6%, while the Tier 1 ratio remained broadly stable at approximately 17.8%. The absence of a clear upward trajectory may reflect a state of capital maturity, wherein institutions already maintain ample buffers and focus on preserving them. Thus, private banks have retained elevated safety margins from the outset but have not demonstrated the same degree of capital strengthening observed in public banks. Their relative steadiness—rather than qualitative growth—signals robust capitalization practices and a firm adherence to the international standards of capital management prescribed under the Basel III framework.

Table (2): Capital Adequacy Indicators for Public and Private Banks in the Algerian Banking System (2019–2023)

Year	Public Banks - Total Solvency Ratio	Public Banks - Tier 1 Solvency Ratio	Private Banks - Total Solvency Ratio	Private Banks - Tier 1 Solvency Ratio
2023	23.68%	19.47%	19.03%	17.93%
2022	22.04%	17.56%	19.33%	18.52%
2021	22.21%	17.60%	19.06%	18.24%
2020	18.95%	14.58%	20.29%	19.46%
2019	17.81%	13.47%	18.90%	18.17%

Source: Bank of Algeria. (2023b). Annual Report 2022–2023. Retrieved from <https://www.bank-of-algeria.dz>

Conclusion: This study aimed to analyse the role of bank capital in absorbing credit risk in Algeria, by assessing the extent to which banks comply with capital adequacy requirements as outlined by the Basel Committee. The findings and recommendations presented below reflect an in-depth evaluation of the evolution of capital adequacy ratios in Algerian banks between 2019 and 2023.

Findings and Results :

1. The gradual decline in the system-wide total solvency ratio suggests a weakening of banks' ability to cover risks, posing a challenge to overall financial stability.
2. All banks—particularly public institutions—have maintained capital levels above Basel thresholds (Tier 1 $\geq 6\%$ and Total Capital Adequacy Ratio $\geq 8\%$), indicating strong regulatory compliance and relative sectoral resilience.
3. Public banks have demonstrated consistent improvements in both total and core solvency ratios, with annual growth rates pointing to structural reforms such as capital increases and better asset management. The narrowing gap between total and Tier 1 ratios reflects enhanced capital quality, not just quantity.
4. Over the five-year period(2019-2023), public banks have shown marked performance gains, in some cases matching or surpassing private banks on key indicators—suggesting successful reform and strategic repositioning within the public sector.
5. Private banks display maturity in capital structure and stability; however, they require more dynamism to adapt to future modernization efforts.
6. Overall, both public and private banks maintain capital levels well above the minimum Basel III requirements, reinforcing Algeria's commitment to international financial standards.

Recommendations: Based on the analytical assessment of the performance of the Algerian banking sector during the period from 2019 to 2023, the following set of recommendations is proposed:

For Public Banks:

- Continue strengthening Tier 1 capital through strategic equity adjustments and retained earnings.
- Maintain high solvency ratios alongside rigorous control of non-performing loans and operational risks—emphasizing asset quality and loan portfolio discipline.
- Invest in internal control systems and quantitative risk management tools.

For Private Banks:

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- Encourage capital expansion via equity offerings to investors or reinvestment of earnings.
- Develop Tier 2 capital instruments such as subordinated loans or convertible bonds to diversify capital sources.

For the Bank of Algeria:

- Closely monitor capital adequacy ratios on a bank-by-bank basis, applying targeted supervision where solvency levels are low.
- Activate macroprudential supervisory mechanisms to mitigate systemic risk.
- Mandate full transparency in bank financial disclosures—including capital adequacy metrics—and guide institutions toward implementing Internal Capital Adequacy Assessment Processes (ICAAP).

Enhancing Algeria's banking system requires a coordinated effort between banks, the central bank, and financial policymakers. The ultimate goal is not merely to attain elevated solvency ratios but to establish a resilient, competitive, and internationally aligned banking sector capable of supporting sustainable economic development and withstanding external shocks.

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