**PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA**

**MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH**

**HIGHER SCHOOL OF COMMERCE**

End-of-cycle dissertation for the purpose of obtaining a Master's Degree in Financial Sciences and Accounting

**Major** : Corporate Finance

Topic:

# Determinants of Deposits in Algerian Commercial Banks: Using A Panel Data Analysis


Submitted by :

MERAH CHAHINEZ

Supervised by :

Pr. BENILLES BILLEL


Location of the internship : TRUST BANK ALGERIA

Duration of the internship : From 12-04-2026 to 13-05-2026

Academic year 2025-2026

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## LIST OF ABBREVIATIONS

| Abbreviations | Definitions |
|---|---|
| **ABEF** | The Association of Banks and Financial Institutions |
| **ATM** | Automated Teller Machine |
| **BA** | Bank of Algeria |
| **BADR** | Bank of Agriculture and Rural Development |
| **BCIA** | Bank for Commerce and Industry of Algeria |
| **BDL** | Local Development Bank |
| **CA** | Cetelem Algeria |
| **CAD** | Algerian Development Fund |
| **CCMSA** | Central Fund of Agricultural Social Mutuals |
| **CNEP** | National Fund for Savings and Provident |
| **CNRC** | National Centre of Commercial Register |
| **EPE** | Public Economic Enterprises |
| **FMI** | International Monetary Fund |
| **GIE-MONETIQUE** | Economic Interest Group for Monetary Affairs |
| **HQLA** | High Quality Liquid Assets |
| **IPC** | Consumer Price Index |
| **LCR** | Liquidity Coverage Ratio |
| **MCC** | Monetary and Credit Council |
| **NPL** | Non-Performing Loans |
| **GDP** | Gross Domestic Product |
| **SATIM** | Society for the Automation of Interbank and Monetary Transactions |

| **Abbreviations** | **Definitions** |
|---|---|
| **SGA** | Société Générale Algeria |
| **SMEs** | Small and Medium-Size Enterprises |
| **SPA** | Joint Stock Company |
| **VIF** | Variance Inflation Factors |

## ABSTRACT

This research aims to identify and analyse the microeconomic and macroeconomic determinants of bank deposit growth in Algerian commercial banks. The study is based on a sample of 19 Algerian commercial banks both public and private over a period of 14 years, spanning from 2010 to 2023, accounting for approximately 90% of the total banking sector population. To this end, a panel data regression model is applied, which takes into account both the individual and temporal dimensions of the data. Bank deposits are measured through the deposits-to-assets ratio (DEPRATIOS), which constitutes the dependent variable of the model. Regarding the explanatory variables, 8 independent variables are retained, namely: bank size, capital adequacy ratio, operational efficiency, loan-to-deposit ratio, return on equity, GDP growth rate, inflation rate, and money supply growth. The results of analysis indicate, firstly, that all results were statistically significant. Secondly, concerning the relationship of the independent variables with the deposits-to-assets ratio, it was found that the loan-to-deposit ratio and the inflation rate exert a negative effect on bank deposits. Conversely, bank size, capital adequacy ratio, operational efficiency, return on equity, GDP growth rate, and money supply growth were found to exert a positive effect on the deposits-to-assets ratio of Algerian commercial banks.


**Keywords:** Bank Deposits; Determinants; Panel Data; Algerian Banks.

**RÉSUMÉ**

Cette recherche a pour objectif l'identification et l'analyse des déterminants microéconomiques et macroéconomiques des dépôts bancaires dans les banques commerciales algériennes. L'étude s'appuie sur un échantillon de 19 banques commerciales algériennes publiques et privées sur une période de 14 années, allant de 2010 à 2023, représentant environ 90% de la population totale du secteur bancaire. À cette fin, un modèle de régression sur données de panel , prenant en considération les deux dimensions individuelle et temporelle des données. Les dépôts bancaires sont mesurés par le ratio dépôts sur actifs totaux (DEPRATIOS), qui constitue la variable dépendante du modèle. Concernant les variables explicatives, 8 variables indépendantes sont retenues, à savoir : la taille de la banque, le ratio d'adéquation des fonds propres, l'efficience opérationnelle, le ratio prêts sur dépôts, la rentabilité des capitaux propres, le taux de croissance du PIB, le taux d'inflation et la croissance de la masse monétaire. Les résultats de l'analyse multivariée indiquent, dans un premier temps, que tous les résultats étaient statistiquement significatifs. Dans un deuxième temps, concernant la relation des variables indépendantes avec le ratio dépôts sur actifs, il s'est avéré que le ratio prêts sur dépôts et le taux d'inflation exercent un effet négatif sur les dépôts bancaires. En revanche, la taille de la banque, le ratio d'adéquation des fonds propres, l'efficience opérationnelle, la rentabilité des capitaux propres, le taux de croissance du PIB et la croissance de la masse monétaire exercent un effet positif sur le ratio dépôts sur actifs des banques commerciales algériennes.

**Mots clés :** Dépôts bancaires ; Déterminants ; Données de panel ; Banques algériennes .

# GENERAL INTRODUCTION

## General Introduction

An Efficient Financial System Is Widely Recognised As A Pivotal Driver Of Sustainable Economic Growth And A Fundamental Enabler Of Dynamic Economic Development. Countries Endowed With Well-Developed Financial Institutions Tend To Grow At A Considerably Faster Pace, As Their Financial Systems Possess The Capacity To Mobilise Savings And Channel Them Toward The Most Productive Investment Opportunities, Thereby Enabling Economic Units To Meet Their Financial Needs Efficiently.

At The Heart Of Every Financial System Lies The Banking Sector. In Developing Countries Where Banks Dominate The Financial Landscape Such As Algeria Commercial Banks Constitute The Backbone Of Financial Intermediation, Collecting Funds From Surplus Units And Directing Them Toward Individual And Corporate Investors. This Intermediation Function, However, Cannot Operate Without Adequate Levels Of Bank Deposits, Which Represent Not Only The Principal Source Of Income For Commercial Banks, But Also The Working Capital Upon Which Lending Activities And Long-Term Institutional Sustainability Depend. As Garo (2015) Aptly Noted, Deposits Are The Very Oxygen Of Banks Indispensable To Their Existence And Operation.

Deposits Are Therefore Far More Than A Mere Funding Instrument. They Constitute The Structural Foundation Upon Which The Entire Edifice Of Commercial Banking Activity Is Built And Sustained. Despite The Oligopolistic Nature Of The Industry, Competition For Public Deposits Remains Intense, As The Volume Of Deposits Mobilised Is A Decisive Determinant Of A Bank's Profitability And Overall Financial Performance.

Yet The Stability And Continuous Inflow Of Deposits Toward Banking Institutions Cannot Be Taken For Granted, As Deposits Are Governed By A Range Of Determinants Operating At Multiple Levels. From The Broader Macroeconomic Environment, Where Indicators Such As Interest Rates, Inflation, And Real Gdp Growth Shape The Saving Behaviour Of Households And Businesses, To Bank-Specific Dimensions Such As Return On Assets, Capital Adequacy Ratio, And Non-Performing Loans Ratio That Influence Depositor Confidence, And Extending To The Structural Features Of The Sector, Including The Degree Of Financial Deepening And The Prevailing Prudential Regulatory Framework These Interacting Forces Collectively Enhance And Determine The Volume And Growth Of Bank Deposits

## Research Problem

Within this analytical framework, the growth and stability of bank deposits are shaped by the interaction between bank-specific microeconomic factors, broader macroeconomic forces, and the structural features of the banking sector. It is within this context that the present study is structured around the following central research question:

**What are the main determinants of bank deposit in Algerian banks?**

To address this central question comprehensively, it is decomposed into three subsidiary questions:

- How do bank-specific microeconomic determinants influence bank deposits ?
- How do macroeconomic determinants affect bank deposits?
- Does the deposits-to-assets ratio of Algerian public banks differ from that of Algerian private banks?

**Research Hypotheses**

In order to address the aforementioned research questions, the following hypotheses are formulated:

- **H1:** Bank-specific microeconomic determinants exert a significant impact on bank[1] deposits.
- **H2:** Macroeconomic determinants exert a significant impact on bank deposits .
- **H3:** The deposits-to-assets ratio of Algerian public banks differs from that of Algerian private banks.

**Importance of the Study**

The significance of this study is therefore far more than a mere academic exercise. Bank deposits constitute the structural foundation upon which the entire edifice of commercial banking activity is built and sustained directly conditioning a bank's capacity to extend credit, finance productive investment, and deliver long-term financial performance. In the Algerian context, characterised by underdeveloped capital markets, a pronounced reliance on bank credit, and a significant volume of funds circulating outside the formal banking circuit, understanding the forces governing deposit

[1] **Note:** H1 and H2 are further decomposed into sub-hypotheses (H1a–H1e and H2a–H2c) in the empirical study, corresponding to each explanatory variable.

growth becomes an essential prerequisite for ensuring the stability and efficiency of the banking system as a whole. This study therefore constitutes a meaningful contribution to the still limited local banking literature, while serving as a practical decision-making tool for bank managers seeking to strengthen deposit mobilisation strategies, for policymakers aiming to design effective savings-stimulating measures, and for regulators concerned with the long-term soundness of the Algerian banking sector.

**Research methodology**

To address the central research question, the subsidiary questions, and to verify the validity of the formulated hypotheses, the present study adopts two complementary approaches. The first is a descriptive approach, encompassing a thorough theoretical and empirical review of the existing literature on the determinants of bank deposit growth across diverse banking contexts. The second is an analytical approach, based on econometric modelling designed to empirically measure the impact of the selected determinants on bank deposit growth in the Algerian context.

The empirical investigation draws on a panel data sample comprising 19 Algerian banks over a period of 14, spanning from 2010 to 2023. A panel data linear regression model is applied to identify and quantify the influence of microeconomic, macroeconomic, and sector-level determinants on the volume and growth of bank deposits, drawing on the annual financial statements of the sampled institutions as well as macroeconomic data sourced from the World Bank and the Bank of Algeria. This dual methodological approach enables the study to provide robust and empirically grounded responses to the research problem under investigation.

**Research organization :** In order to address the research problem and achieve the objectives of this study, the work is organised into three chapters.

The first chapter provides a general overview of bank deposits. It begins with a presentation of the banking activity, before examining the conceptual and theoretical perspectives on bank deposits. It concludes with an analysis of bank deposit dynamics within the Algerian banking system.

The second chapter is dedicated to the determinants of bank deposits. It is structured around three levels of analysis opening with an examination of microeconomic and bank-specific determinants, followed by a detailed investigation of macroeconomic determinants of bank deposits, and concluding with an analysis of sectoral determinants thereby providing a comprehensive and multi-dimensional understanding of the forces governing deposit growth.

The third chapter constitutes the empirical core of the study. It opens with a presentation of the Algerian banking sector , before detailing the methodological framework adopted for the empirical investigation. It concludes with the estimation of the econometric model and a thorough interpretation of the results obtained, with the aim of empirically identifying the main determinants of bank deposit in the banking sector.

# CHAPTER 01 : GENERAL OVERVIEW OF BANK DEPOSITS

## Introduction

Banks occupy a central position in the financial system, serving as key intermediaries between economic agents with surplus funds and those in need of financing. Through this intermediation function, they facilitate the mobilization of savings, the allocation of capital, and the financing of economic activities, contributing significantly to economic growth and financial stability.

Among the resources available to banks, deposits constitute one of the most critical and stable sources of funding. They not only enable banks to carry out their core operations, particularly the extension of credit to households and businesses, but also serve as a key indicator of public confidence in the banking system. Consequently, any significant decline in deposit volumes may negatively affect banks' ability to finance the economy and preserve their financial stability.

In order to strengthen their resource base, banks continuously seek to mobilize savings by offering a variety of deposit products tailored to the needs of different categories of depositors. This objective has become increasingly important in a banking environment characterized by growing competition between public and private institutions, both domestic and foreign.

This chapter aims to provide a comprehensive overview of bank deposits, their fundamental concepts, characteristics, and their significance within the Algerian banking system. It is organized into three main sections:

- **Section 1:** Generalities on Banking Activity.
- **Section 2:** Conceptual and Theoretical Perspectives on Bank Deposits.
- **Section 3:** Bank Deposit Dynamics in the Algerian Banking System.

## Section 01: Generalities on Banking Activity

The banking sector plays a fundamental role in modern economies by ensuring financial intermediation and supporting overall economic activity. Through the efficient circulation of financial resources, banks contribute to the stability and effectiveness of the financial system as a whole.

A banking system can be defined as the ensemble of financial institutions operating within a given monetary area, functioning under the supervision of a central authority responsible for regulating their activities, issuing currency, and conducting monetary policy. This structured and regulated framework underscores the critical importance of banking activity in maintaining economic order.

This section aims to present the main concepts underpinning banking activity, with a particular focus on its core functions and its broader role within the economic system.

### 1 .Bank definition

### 1.1 Legal Definition

According to Articles 68 and 69 of Law No. 23-09 of June 21, 2023, on money and credit ,banking operations are defined as encompassing the receipt of funds from the public, credit operations, banking operations relating to Islamic finance, as well as making all means of payment available to customers and managing them. The law further specifies that funds received from the public are those collected from third parties, notably in the form of deposits, with the right to use them for the institution's own account, but with the obligation to return them. A bank is therefore any institution duly licensed by the Monetary and Banking Council and subject to the supervision of the Bank of Algeria, whose principal activity consists of collecting public deposits, granting credit, and payment services, including those conforming to Islamic finance principles .[1]

[1] Law No. 23-09, Arts. 68–69, Official Journal of the Republic, No. 43 ,June 27, 2023.

## 1.2 Economic Definition

Beyond these legal definitions, which establish the formal framework of banking activity, economic literature offers a more functional perspective that emphasizes the role of banks in the economy

According to Garsuault and Priami (1997) : «the bank is the intermediary between suppliers and demanders of capital.» This definition highlights the intermediation function that lies at the heart of banking activity,banks collect savings from agents with surplus funds (suppliers) and redistribute them to agents with financing needs (demanders).[1]

For Nicolas Venard (2001) : « banks are agents whose function is to facilitate the adjustment between surpluses and financing needs, in the immediate or future term.» This conceptualization situates the bank within the family of financial intermediaries and emphasizes its contribution to the intertemporal equilibrium of the economy.[2]

According to Sylvie de Coussergues and Gautier Bourdeaux (2013) « A bank is a financial intermediary that participates in the indirect financing process of an economy by collecting and redistributing capital after having transformed their maturities and risk. Initially, with balance sheet intermediation, this function took the form of bank deposits and credits; it expanded with the development of capital markets to include market operations, hence market intermediation. A bank is also a provider of numerous services.»[3]

Thus, a bank is a financial institution that collects funds in the form of deposits, grants loans, and provides a variety of financial services such as payment methods, savings, or wealth management to individuals, businesses, or institutions. It plays a central role in the economy by facilitating transactions, mobilizing savings, and supporting economic development through financing activities. Banks are also regulated to ensure their stability and protect the interests of depositors and clients.

[1] Garsuault. P & Priami. S, **Banking: Functioning and Strategies**, Économica, 2e edition, 1997, p:45.
[2] Venard. N, **Banking Economics**, Bréal, 2001, p: 16.
[3] Coussergues. S, Bourdeaux. G & Gabteni. H, **Bank Management: All the Principles and Tools to Know**, Dunod, 9e edition, 2020, p: 20.

## 2 The Roles and Functions of Banks in the Economy

At the heart of every modern economy lies the banking system. Banks serve as the engine of economic growth by financing investment and supporting development. This section examines six principal roles that banks play in contemporary economies:

### 2.1 Financial Intermediation and Capital Formation

Banks act as financial intermediaries, channeling funds from savers and investors to borrowers including individuals, businesses, corporations, and governments. They collect savings from households and businesses by offering a variety of deposit products, including savings accounts, time deposits, and certificates of deposit. This deposit mobilization function enables the concentration of substantial capital, which can subsequently be deployed for lending activities.

Through their lending activities, banks provide financial resources to businesses for operational expansion, production modernization, and innovation. Simultaneously, lending to individuals stimulates consumer demand a crucial driver of economic growth. Loans for housing, automobiles, education, and other consumption needs generate economic activity across multiple sectors. The attraction of savings ensures both the stability of the banking system and its capacity to undertake long-term investments, thereby supporting capital formation and economic expansion.

### 2.2 Credit Provision and Investment Support

Banks directly provide the main source of financing in most economies. By extending loans to enterprises, banks facilitate the financing of new projects, production expansion, and technological innovation. This, in turn, generates employment opportunities, enhances productivity, and strengthens economic competitiveness.

When active in primary capital markets, banks contribute to capital formation through underwriting services. By committing to purchase, at a predetermined price, any newly issued shares or bonds not taken up by investors, banks guarantee that clients can raise the desired financing amount. This risk mitigation function facilitates corporate and governmental access to capital markets .[1]

[1] Association for Financial Markets in Europe**, The Role of Banks and Financial Markets in the Economy**, 2017, available at: https://www.afme.eu

Small and medium-sized enterprises (SMEs) the backbone of many economies rely heavily on bank financing for growth and value creation. Lending to SMEs is often accompanied by support programs such as government guarantees or preferential credit lines. Furthermore, banks contribute to innovation financing through venture capital and specialized funding mechanisms that support new technologies and startups, thereby stimulating scientific and technical progress.

### 2.3 Liquidity Provision

Banks provide liquidity to economic agents through two primary channels. First, they offer deposit accounts that can be withdrawn on demand, enabling households and businesses to address unexpected cash needs. Second, they provide committed lines of credit that guarantee access to funds when required.

In financial markets, banks act as market-makers, standing ready to buy and sell securities and financial instruments in large volumes at any given time, with relatively low transaction costs. By bridging the temporal and quantitative mismatches between buyers and sellers, market-makers ensure continuous market liquidity, thereby facilitating investment, fundraising, and risk management activities.[1]

### 2.4 Payment and Settlement Systems

Banks form the backbone of modern payment systems. As economies transition toward electronic transactions, banks process growing volumes of card payments, wire transfers, direct debits, and digital payments. Efficient payment infrastructure contributes to increased commercial activity while reducing risks associated with cash circulation. The development of electronic payment capabilities has significantly enhanced transaction speed and convenience, further facilitating economic exchange.

Beyond retail payment services, banks also operate and participate in financial market infrastructures that facilitate the settlement of securities and derivative transactions (Bank for International Settlements, 2020). The efficient functioning of these payment and settlement systems is indispensable for the smooth operation of contemporary economies.[2]

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[1] Ibid

[2] Vrotslavskyy. D. F, **The Role of the Banking System in Providing Financial Resources for the Development of the Economy**, in Dropa. Y. B (ed.), Scientific Collection "InterConf+", no. 46, Ivan Franko National University of Lviv, 2024, p: 22.

### 2.5 Risk Management Services

The banking system plays an important role in managing financial risks. Banks offer risk management tools primarily through derivative contracts that enable businesses and investors to hedge against adverse movements in interest rates, exchange rates, commodity prices, and energy costs . By transferring these financial risks to institutions specialized in their management, banks allow economic agents to concentrate on their core productive activities.

Banks employ various instruments to minimize credit risk, currency exposure, and interest rate volatility. These risk mitigation techniques include insurance mechanisms, derivative contracts, and other financial instruments that allow economic agents to transfer risks to institutions better equipped to manage them. This risk intermediation function contributes to overall economic stability and predictability.[1]

### 2.6 Support for Government, Socio-Economic Development, and Financial Stability

Banks frequently participate in financing public sector initiatives, including infrastructure construction and social program development. Such involvement contributes not only to economic growth but also to improved living standards through enhanced public services and facilities.

Beyond purely economic functions, the banking system supports broader socio-economic development by financing projects in education, healthcare, housing construction, and other socially significant areas. These activities contribute to poverty reduction, improved quality of life, and enhanced social stability.[2]

## 3 Typology of banks

The specialization of economic sectors ranging from agriculture and industry to services has historically influenced the development of banking systems globally, resulting in a diverse range of bank categories, each fulfilling distinct economic functions:

[1] Ibid,p:23.
[2] Ibid,p:25

### 3.1 Central Banks

A central bank is an institution responsible for controlling a country's banking system. Also referred to as the "bank of banks" or the "state bank," its main missions include managing the national currency, issuing banknotes, and implementing monetary policy.

The central bank is responsible for:

- Managing the country's foreign exchange reserves
- Supervising the financial system
- Setting interest rates

Examples: Bank of Algeria (BA), Bank of France (BF), United States Federal Reserve (FED)[1].

### 3.2 Commercial Banks

Commercial banks maintain a direct relationship with economic agents, including individuals, small and medium-sized enterprises, and associations. Also called "retail banks," their activities encompass:

- The collection of deposits from customers through savings products
- The granting of credit
- The sale of classical insurance products
- The management of means of payment

These banks operate through a network of branches distributed across the territory where they conduct their activities. From an economic perspective, commercial banks engage in the business of mobilizing savings from economic agents in a position of financing capacity, in the form of deposits (demand deposits and time deposits), in order to redistribute them to agents with financing needs through credit (short, medium, and long-term) or through investments in financial operations [2]

### 3.3 Deposit Banks

These institutions receive and manage customer deposits. These deposits may take the form of current accounts or savings accounts[3]. Deposit banks may also engage in other banking activities

[1] Bougrine. H, **Intermediate Macroeconomics: Theory, Policy and Competing Perspectives**, Edward Elgar Publishing, 2025, p: 35.
[2] Ibid,p37.
[3] Louali. R & Chekhab. S, **Bank Behavior Regarding Guarantee Requirements: The Case of Crédit Populaire d'Algérie (CPA)**, Master's thesis, Higher School of Commerce, Koléa, Algeria, 2023, p: 25

and may consequently be classified under other bank categories. They primarily work with individual clients, professionals, and businesses.

### 3.4 Investment Banks

Also called "medium and long-term banks," these institutions receive time deposits with maturities exceeding two years and grant credits with maturities of at least two years. An investment bank primarily intervenes in three areas:[1]

- **Balance Sheet Advisory:** This activity corresponds to high value-added expertise and consulting operations for corporate clients (large enterprises) and institutional clients. It includes mergers and acquisitions, privatization consulting, stock market introductions, capital increases, and bond issuances.
- **Financial Market Investment:** This activity addresses the needs of issuing clients and investors in bond and equity products. These operations involve the creation of customized products such as bonds, securitization, syndicated loans, market risk management, and various investment products.
- **International Trade Financing:** This activity involves the structuring and distribution of complex and innovative financing solutions, including LBO (Leveraged Buy-Out) financing and leasing. It may also encompass, at the global level, all activities related to international exchanges, both in terms of financing (export credit offered by traders) and services (issuance of international guarantees).

### 3.5 Merchant Banks

Merchant banks belong to the category of financial institutions. They are specialized entities that act as intermediaries in financial operations for their clients. As strategic and financial consulting firms, their missions can be numerous and varied:

- Stock market introductions
- Capital increases
- Merger and acquisition operation
- Investment portfolio management[2]

[1] Ibid,p:26.
[2] Ibid,p:27

- Bond issuances
- Bank debt issuances
- Activity financing

As a general rule, merchant banks specialize in a specific domain. Few hybrid institutions are specialized across all these areas. International Examples: Goldman Sachs, J.P. Morgan, Morgan Stanley (United States); Bryan, Garnier & Co (Franco-American); Société Générale CIB, Crédit Agricole CIB, BNP Paribas CIB, Rothschild & Cie (France); Degroof Petercam (Belgium)[1]

[1] Ibid

## Section 02: Conceptual and Theoretical Perspectives on Bank Deposits

Bank deposits are considered one of the most essential components of banking activity, as they constitute a primary source of resources for banks and play a crucial role in supporting financial intermediation. Their importance lies not only in providing funding for banking operations, but also in facilitating savings mobilization, enhancing public confidence in the banking system, and contributing to the smooth functioning of the economy. Owing to this central role, bank deposits have become a major subject of interest in banking and economic analysis. This section provides an introductory foundation for understanding this important component of banking activity and its place within the financial system.

### 1 Definition of bank deposits

#### 1.1 Legal Definition of Bank Deposits

According to Article 2, paragraph 1, point (3) of Directive 2014/49/EU of the European Parliament and of the Council of 16 April 2014, a deposit is defined as follows:

"Deposit means a credit balance which results from funds left in an account or from temporary situations deriving from normal banking transactions and which a credit institution is required to repay under the legal and contractual conditions applicable, including a fixed-term deposit and a savings deposit, with the exception of a credit balance where:

a) its existence can be proven only by a financial instrument as defined in Article 4(1)(15) of Directive 2004/39/EC of the European Parliament and of the Council of 21 April 2004 on markets in financial instruments;

b) its capital is not repayable at par;

c) its capital is repayable at par only under a particular guarantee or agreement provided by the credit institution or a third party."[1]

In Algerian law, a deposit is primarily defined under the Civil Code. Article 590 states: "A deposit is a contract by which the depositor delivers a movable asset to the depository for safekeeping for

[1] European Union, **Directive 2014/49/EU of the European Parliament and of the Council of 16 April 2014 on Deposit Guarantee Schemes**, Official Journal of the European Union, L 173, 2014, p: 149-178.

a specified period, with the obligation to return it in kind." In the banking context, cash deposits are considered funds received from the public[1].

According to Article 68 of Law No. 23-09, Monetary and Banking Law, banking operations include receiving funds from the public, granting credit, and managing payment methods. Article 69, paragraph 1 clarifies that funds received from the public are particularly considered deposits, which the bank has the right to use for the account of the recipient, provided they are returned[2].

## 1.2 Economic Definition

In economic terminology, bank deposits have been defined in various ways depending on the perspective adopted.

One broad definition considers A bank deposit is: everything that the bank owes to the customer. It is not limited only to the money deposited with the bank under a deposit contract, but also includes all money that funds the deposit account, regardless of its source whether direct deposit, the value of checks collected by the bank on behalf of the customer, bank transfer orders issued in favor of the customer, or any credit entry made to the customer's benefit. Thus, any money that enters the deposit account constitutes a cash bank deposit. Consequently, the bank is permitted to utilize these funds by all available means to provide financial resources to those in need.[3]

Another definition describes a deposit as A sum of money deposited by a natural person, such as a merchant, or a legal person with a commercial bank, either on their own behalf or on behalf of another person designated by the depositor. In return for this deposit, the commercial bank issues a certificate acknowledging receipt of the amount, with the possibility of opening a checkbook if the customer so requests. [4].

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[1] **Algerian Civil Code**, Art. 590, Journal Officiel de la République Algérienne

[2] **Law No. 23-09 of 2019 on the Monetary and Banking System**, Articles 68–69, Journal Officiel de la République Algérienne, 2019.

[3] Kerdi. N, **Legal Adaptation of the Cash Bank Deposit**, Journal of Legal and Political Sciences, vol. 9, no. 2, June 2018, p: 850-861.

[4] Boufassa. J, **Foundations of Monetary and Banking Economics**, Office des Publications Universitaires (OPU), Algiers, 2018, p: 15.

These definitions emphasize the key parties to a deposit contract the depositor and the bank while also recognizing that deposits may involve multiple account holders, whether individuals or legal entities, as in the case of joint accounts.

## 2 Typology of Deposits

Bank deposits can be classified into several categories based on their liquidity and maturity characteristics, mainly including demand deposits, savings deposits, and time deposits.

### 2.1 Demand Deposit

A demand deposit constitutes a financial instrument representing funds held in a bank account that are payable by the financial institution immediately upon the depositor's request, without any requirement for prior notification or penalty. From a legal perspective, demand deposits establish a creditor-debtor relationship between the depositor and the bank, wherein the depositor transfers ownership of funds to the institution in exchange for the bank's unconditional obligation to return an equivalent amount on demand.

#### 2.1.1 Operational Mechanisms of Demand Deposit

**A. Deposit Mechanisms**

Account holders possess the unilateral right to deposit funds into their demand deposit accounts and subsequently withdraw them at any time without providing advance notice to the financial institution. This characteristic distinguishes demand deposits from other forms of bank liabilities that may require notification periods or impose withdrawal restrictions.

The principal methods for crediting funds to demand deposit accounts include:

- Over-the-counter cash deposits: Physical currency deposited directly at bank branches or teller stations[1]

[1]Northwest Bank, **What Is a Demand Deposit?**, Northwest Financial Wellness Center, available at: https://financialwellnesscenter.northwest.bank/money-management/banking/article/what-is-a-demand-deposit, accessed 2026.

- Check deposits: Negotiable instruments endorsed and presented for collection, either in person or through automated deposit facilities
- Mobile deposit applications: Remote deposit capture technology enabling account holders to transmit check images electronically for processing
- Direct deposit arrangements: Automated recurring credits, typically for payroll, government benefits, or pension distributions, transmitted through electronic funds transfer systems.

These deposit mechanisms collectively ensure that demand deposit accounts function as the primary conduit for household and business liquidity management, facilitating both the receipt of income and the execution of payment obligations.

**B. Withdrawal Mechanisms**

Demand deposit accounts typically impose no contractual limits on the frequency or volume of withdrawals, reflecting their fundamental purpose as transaction vehicles for economic agents. This unrestricted access distinguishes demand deposits from other liability categories and underpins their classification as the most liquid component of the money supply.

However, certain subtypes of demand deposit accounts, particularly savings accounts, may be subject to regulatory or contractual transaction limitations. In many jurisdictions, including the United States under Regulation D and similar frameworks elsewhere, savings accounts have faced restrictions on the number of certain types of withdrawals or transfers per statement cycle. Depositors who exceed these predetermined limits may incur penalties or, in extreme cases, risk account reclassification or closure by the financial institution .

The principal mechanisms for effecting withdrawals from demand deposit accounts include:

- Check-based withdrawals: Negotiable instruments drawn on the account, enabling payment to third parties or self-withdrawal through counter checks
- Electronic bill payment: Automated clearing house (ACH) transactions initiated through online banking platforms to settle recurring or one-time obligations[1]

[1] Ibid

- Debit card transactions: Point-of-sale purchases and payment authorizations processed through card networks (Visa, Mastercard, etc.), with funds debited in real-time or near-real-time

- Automated teller machine (ATM) withdrawals: Direct cash withdrawals using card-based authentication, typically available 24 hours daily through networked machines.[1]

## 2.2 Savings Deposits

A savings deposit is an interest-bearing bank account held at a financial institution, designed to enable individuals to accumulate funds for future use while maintaining the ability to withdraw them on demand, though typically without check-writing privileges. From an economic perspective, savings deposits represent a form of near-money that serves the precautionary motive identified by Keynes (1936), allowing households to build liquid reserves for unforeseen contingencies. Regulatory frameworks have historically characterized these deposits as funds accumulated for "bona fide thrift purposes" ,distinguishing them from transaction oriented demand deposits.

### 2.2.1 Characteristics of Savings Deposits

Savings deposits are a category of bank account that enables individuals to accumulate funds while maintaining access to their money under specified conditions. The principal characteristics include:

#### 2.2.1.1 No Fixed Maturity

Depositors may generally withdraw funds at any time, although some jurisdictions or institutions may require advance notice for large withdrawals.

#### 2.2.1.2 Interest-Bearing

Savings deposits typically offer interest as an incentive to encourage household saving.

#### 2.2.1.3 Limited Withdrawal Methods

Withdrawals are usually conducted through passbooks, withdrawal slips, or electronic channels such as automated teller machines. [2]

#### 2.2.1.4 Withdrawal Restrictions

[1] Ibid.
[2] S. D. Lee, **Analysis of Characteristics of Savings Deposits in Indonesia**, Gunadarma University, Faculty of Economics, Accounting Department, 2011, p. 14.

Certain accounts may limit the number of transfers or withdrawals permitted per month.

#### 2.2.1.5 Individual Accessibility

These accounts are typically restricted to natural persons rather than business entities.

#### 2.2.1.6 Flexible Use

Funds may be held for precautionary purposes, anticipated future expenses, or as near-money to satisfy liquidity needs.

#### 2.2.1.7 Regulatory Framework

Withdrawals and account usage are governed by banking regulations and the specific terms of the account agreement.

From an economic perspective, savings deposits constitute a form of near-money that households employ to build liquid reserves, reflecting both the precautionary and speculative motives for holding funds. They represent a crucial source of stable funding for banks, enabling credit creation and supporting broader economic activity.[1]

### 2.3 Time Deposits

A time deposit, also known as a term deposit or certificate of deposit, refers to a sum of money placed in a bank account for a specified and predetermined period. During this period, the deposited funds remain blocked and cannot be withdrawn by the depositor until the maturity date, which is established in advance through a contractual agreement between the depositor and the bank.

The main characteristic that distinguishes time deposits from demand deposits is the maturity constraint. Unlike demand deposits, which allow depositors to withdraw their funds at any time without prior notice, time deposits require the depositor to commit the funds for a fixed duration.

In return for this restriction on liquidity, time deposits generally provide a higher interest rate compared to demand deposits or standard savings accounts[2]. The interest rate applied to time

[1] Ibid,p: 15.

[2] J. A. Bikker and D. F. Gerritsen, **Determinants of Interest Rates on Time Deposits and Savings Accounts: Macro Factors, Bank Risk, and Account Features**, *International Review of Finance* 18, no. 2, 2018,p 169–216.

deposits is usually determined by the banking institution and may vary depending on market conditions, the amount deposited, and the duration of the investment.

If the depositor decides to withdraw the funds before the agreed maturity date, the bank may impose penalty charges or a reduction in the interest earned, according to the conditions specified in the deposit contract.

### 2.3.1 The Characteristics of Time Deposit

Time deposits are characterized by a set of distinctive features that differentiate them from other deposit types, which can be outlined as follows:

#### 2.3.1.1 Fixed-Maturity

A time deposit is contracted for a predetermined period agreed upon between the bank and the depositor. This maturity may range from a few months to several years. The deposited funds become available only at the agreed maturity date, unless the contract is terminated earlier under specific conditions.

#### 2.3.1.2 Fixed and guaranteed interest rate

Time deposits offer an interest rate that is determined at the time of subscription and remains fixed throughout the duration of the contract. This allows the depositor to know in advance the return that will be obtained at maturity.

#### 2.3.1.3 Temporary unavailability of funds

Unlike demand deposits, funds placed in a time deposit are generally blocked for the duration of the contractual period. This restriction is a fundamental characteristic of time deposits and explains the higher interest rate they offer.

#### 2.3.1.4 Early withdrawal penalties

If the depositor withdraws funds before the agreed maturity date, the bank may apply penalties. These usually take the form of a partial or total loss of accrued interest, depending on the contractual terms.

#### 2.3.1.5 Minimum deposit requirement[1]

Banks often require a minimum amount to open a time deposit account. This threshold varies across financial institutions and may influence the interest rate offered.

#### 2.3.1.6 Low-risk investment instrument

Time deposits are generally considered relatively safe savings instruments because the return is predetermined and not directly affected by fluctuations in financial markets.

## 3 The Importance of Bank Deposits in Commercial Banking Activity

Bank deposits constitute the cornerstone of the commercial banking business model. Their importance can be analyzed through several fundamental dimensions that explain why they are so essential for both financial institutions and the economy as a whole.

### 3.1 The Primary Source of Bank Funding

Deposits represent the most significant resource in a commercial bank's financial structure. They are the raw material that enables banks to conduct their core activity: granting credit.

According to recent data, deposits continue to be the primary source of funds for commercial banks, representing approximately 77% of total liabilities . This figure clearly illustrates the structural dependence of banks on deposits as a funding source. In comparison, equity capital constitutes only about 9% of liabilities, demonstrating that without deposits, banks could not perform their transformation function .

In developing banking systems, this proportion can even reach up to 90% or more of banks' total resources. Deposits may account for as much as 92% of commercial banks' resources and are considered the most fertile and least costly sources of funds.[2]

Deposits indeed have a relatively low financial cost for banks, especially compared to other funding sources such as interbank borrowing or issuing securities in financial markets. The interest

[1] Ibid
[2] Vrotslavskyy. D. F, **op. cit.**, p: 32

rate paid to depositors is generally lower than market rates, allowing banks to generate a profitable intermediation margin.

### 3.2 The Central Role of Banks in Financial Intermediation

Commercial banks act as essential financial intermediaries between two categories of economic agents :

- Agents with financing capacity (those with surpluses): households, businesses, public institutions that place their savings in the form of deposits
- Agents with financing needs (those lacking resources): businesses, investors, households that need credit to finance their projects

This intermediation role is crucial because it would be extremely difficult, if not impossible, for an individual saver to directly find a borrower matching their exact needs in terms of amount, maturity, and risk . To address this issue, banks pool deposits from thousands of clients, creating a large resource base that can be redistributed in the form of loans to other clients.

The banking intermediation process relies on maturity transformation banks use short-term deposits (available at any time) to finance long-term loans (investments, real estate, equipment). This transformation is fundamental because it channels short-term savings toward long-term needs, thereby fostering productive investment and economic growth[1].

### 3.3 Monetary Creation by Banks

One of the most important but often misunderstood aspects of banks' role is their ability to create money**.** Contrary to popular belief, banks do not simply lend out the deposits they have received .

When a bank grants credit, it does not draw from an existing pool of deposits. It simultaneously creates a new deposit in the borrower's account, thereby generating new money . This is known as the process of exnihilo money creation.

This mechanism can be simply illustrated :

[1] Ibid, p: 33

- ✓ A bank grants a loan of 90,000 DZD to a borrower.
- ✓ The bank credits the borrower's account with 90,000 DZD[1].
- ✓ A new deposit of 90,000 DZD is created, increasing the money supply.
- ✓ The borrower uses these funds to pay a supplier.
- ✓ The supplier deposits these 90,000 DZD in their own bank.
- ✓ This second bank can in turn lend a portion of this new deposit (for example 81,000 DZD), creating even more money.

This process repeats and amplifies the initial money supply. The total amount of money created depends on the credit multiplier coefficient, which is itself determined by the reserve requirement ratio imposed by the central bank .

Thus**,** bank deposits are both the starting point and the result of the money creation process**.** They are the "fuel" that powers the engine of economic financing.[2]

### 3.4 The Role in the Payment System

Beyond the financing function, bank deposits are at the heart of a modern economy's payment system . Demand deposits (checking accounts, current accounts) serve as the medium for daily economic transactions

An efficient payment system enables :

- Facilitating the exchange of goods and services
- Ensuring the circulation of financial resources toward their most productive uses
- Reducing costs and risks associated with transactions

Without bank deposits, economic agents would be forced to use only cash, which would paralyze modern economic activity. Banks, through the deposits they manage, offer secure and efficient payment methods: checks, bank cards, wire transfers, automatic debits .[3]

[1] Ibid,p:35
[2] Ibid
[3] Bagus. P & Howden. D, **The Economic and Legal Significance of 'Full' Deposit Availability**, European Journal of Law and Economics, vol. 41, no. 1, 2016, p: 243-254.

### 3.5 Contribution to Economic and Social Development

As emphasized by Ismat El-Sayed Sayed Ahmed (2014), "the banking system is the fundamental pillar of any economic and social development." Bank deposits, by enabling banks to fulfill their role as financial intermediaries, contribute to economic development in several ways:

- Financing Investment: Deposits collected allow banks to finance investment projects of private and public enterprises, thereby creating jobs and added value.
- Supporting All Economic Sectors: Agriculture, industry, services, and commerce all benefit from bank credit made possible by deposit collection .
- Financial Inclusion**:** Deposits enable households to access basic financial services, secure their savings, and build a financial history.
- Financial Stability: A stable and diversified deposit base (individuals, businesses, public sector) contributes to bank soundness and overall financial system stability.

### 3.6 Deposits as an Indicator of Confidence:

It is important to note that bank deposits also serve as an indicator of the level of confidence that economic agents place in the banking system. As emphasized by the International Monetary Fund, “the essence of banking rests on confidence the belief that the bank has the money to meet its obligations.” The dynamic growth of deposits therefore reflects savers’ trust in the solidity, reliability, and sustainability of banking institutions.[1]

## 4 The strategic mechanisms implemented by banks to mobilize deposit funds

Commercial banks prioritize the growth of deposits, as they form the main source of funds for granting loans. To strengthen their overall activity, banks pursue two main strategies: price competition and non-price competition

[1]Ibid,p:255.

### 4.1 Price Competition Strategy:

The price competition strategy consists of offering higher interest rates to depositors on various types of deposit accounts. The underlying assumption is that depositors, as rational economic agents, respond to monetary incentives when choosing where to place their funds. Banks using this strategy compete by offering more attractive returns, particularly on savings deposits and term deposits where interest payments are permitted .

But despite the effectiveness of price competition in various fields of economic activity, in the banking field, some legislations prohibit the payment of interest on current accounts, which limits the role of this strategy in attracting deposits. The prohibition of interest on current accounts aims to reduce banks' funding costs and avoid pushing them toward risky investments to maintain profitability. It also prevents destructive competition between banks that could arise from interest rate wars on deposits. Additionally, it helps keep loan interest rates lower and limits the concentration of funds in large cities at the expense of smaller regions. However, some economists argue that market forces and central bank regulation could control these risks, and that allowing interest may improve efficiency and resource allocation in the economy[1]

### 4.2 Non-Price Competition Strategy:

The non-price competition strategy refers to competitive approaches that do not rely on interest rates but rather on offering diversified, high-quality banking services at competitive prices. This strategy aims to attract and retain customers by providing a range of banking services that meet client needs and differentiate the bank from its competitors.

The success of this strategy is enhanced by the significant variation among banks in the quality and cost of services provided, as well as the diversity and integration of service offerings.[2] Customers pay considerable attention to the efficiency of banks in performing banking services meaning they will not continue dealing with a bank simply because they have a long history with it while ignoring

[1] Chabli. Z & Daoud Moussa. N, **The Role of Deposit Attraction Strategies in Algerian Banks for Resource Mobilization: Case Study of Crédit Populaire d'Algérie, Société Générale, and Al Salam Bank (2016–2020).** Master's thesis, University of Kasdi Merbah Ouargla, 2022, p: 50

[2] Nid. S, **Macroeconomic Consequences Affecting Bank Deposit Growth in Algeria (1990–2020)**, Doctoral dissertation, University of Mohamed Khider Biskra, 2023, p: 22.

the costs associated with those services.This strategy is based on providing a set of services consisting of :

### 4.2.1 Collection of Client Receivables

Banks collect checks and complete settlements without currency circulation, saving clients time and effort.

### 4.2.2 Payment of Client Obligations

Banks pay client obligations (transfers, checks, standing orders), helping manage cash flow and protect commercial reputation.

### 4.2.3 Transfer of Funds

Banks enable fast and secure fund transfers between regions and countries via bank drafts and mail transfers.

### 4.2.4 Financial & Investment Advice

Banks provide advice to help clients make informed decisions, adding value and strengthening loyalty.

### 4.2.5 Credit Cards

Banks offer convenient payment methods and credit facilities, enhancing the banking experience.

### 4.2.6 Telephone Banking

Banks allow remote account management (balance checks, transfers, transactions), offering convenience as a key non-price differentiator.

### 4.2.7 Insurance Services

Some banks offer insurance, providing additional value and strengthening client relationships.

### 4.2.8 Traveler's Checks

Banks issue secure traveler's checks for customers traveling abroad, adding to non-price benefits[1].

[1] [1] Ibid,p:23.

After reviewing the various strategies for attracting bank deposits, both price and non-price, it is evident that the former remains very limited, especially given the restrictions imposed on interest rates offered by commercial banks and the types of deposits on which interest is paid. Therefore, the non-price competition strategy remains the fundamental strategy for attracting the non-price deposit attraction strategy enables depositors to avoid bearing all the expenses associated with the services they receive, with the bank bearing part of those expenses. This means that depositors receive implicit benefits on current accounts, in addition to the explicit interest paid on savings deposits and term deposits. The amount of service expenses borne by the bank depends on the customer's average credit balance, the volume of withdrawal and deposit activity during the year, and the rate of return on investment available to the bank[1].

## 5 Determinants of Saving in Economic Theories

The successive schools of thought in positive economics have extensively studied saving, yet thinkers disagree on its concept and determinants due to its multiple dimensions. This divergence stems mainly from temporal and spatial differences among theorists, as well as variations in the economic structure and political influence of their home countries.

### 5.1 Saving in Classical theory

rom Adam Smith to Jean-Baptiste Say, considers saving as the portion of income allocated to future consumption over and above current consumption. John Stuart Mill further defines saving as the sacrifice of present consumption in order to achieve higher and better consumption in the future.

Accordingly, saving in classical theory arises from the intertemporal choice between present and future consumption. Individuals make this decision by comparing their time preferences for consumption with the prevailing interest rate, aiming to maximize utility by optimally allocating consumption over time.

Classical economists assume that individuals first determine their desired level of saving based on the prevailing interest rate, and then allocate the remaining income to consumption[2]. Thus, saving is viewed as a supply of financial resources that is directly and positively related to the interest rate,

[1] Ibid

[2] Salami. A & Cheikh. M**, Causality Testing and Co-integration Between Savings and Investment in the Algerian Economy During 1970–2011**, Revue El-Baheth, no. 13, 2013, p: 121

indicating a positive (direct) relationship between the two variables.Classical economists also argue that the interest rate acts as a reward for postponing consumption, just as wages reward labor effort. Hence, the interest rate is considered the main determinant of consumption and saving decisions[1].

## 5.2 Saving in the Neoclassical Theory

The neoclassical theory of saving can be seen as an extension of the classical approach, but with significant improvements in analytical tools and in the way economic behavior is explained. Neoclassical economists introduced more refined instruments that allowed a deeper understanding of the relationship between saving and key macroeconomic variables, particularly the interest rate.

In this framework, Alfred Marshall argues that the interest rate represents the price of capital in the market and tends toward equilibrium when the demand for capital equals its supply, with saving representing the supply side of capital.

Similarly, Arthur Cecil Pigou defines saving as a sacrifice of current consumption in the short run, which is compensated by the interest rate. He emphasizes that the interaction between saving and consumption is governed by the real interest rate, meaning that lower real interest rates especially under inflationary conditions tend to reduce saving.

In addition, Gustav Cassel views saving as the supply of waiting, while investment represents the demand for it, with the interest rate acting as the mechanism that balances both sides. Likewise, Léon Walras highlights the role of the interest rate in ensuring general equilibrium by equating total saving with total investment in the economy.

Despite their important contributions to the theory of saving, both classical and neoclassical approaches rely on restrictive assumptions such as full employment and income stability. These assumptions have been widely criticized, as they neglect the impact of income fluctuations on saving behavior, which represents a key limitation of this analytical framework[2]

Despite their contributions, classical and neoclassical theories failed to fully identify the determinants of saving and could not explain major economic disruptions, especially the Great

[1] ibid

[2] Louardi. M, **The Economic Determinants of Algerian Household Saving at the National Savings and Provident Fund Bank: An Econometric Study During the Period 1987–2019**, Al-Afaq for Economic Studies, vol. 2, no. 6, 2021, p: 248.

Depression of 1929. This led to the emergence of John Maynard Keynes and his Absolute Income Hypothesis, which offered a different view of saving based on income and consumption rather than the interest rate.

### 5.3 Saving in The Keynesian Theory

The Keynesian approach represents a clear departure from classical economic thought. According to John Maynard Keynes, saving is determined by income rather than the interest rate, and the individuals who save are not necessarily the same as those who invest. Keynes rejects the classical view that an increase in saving leads to lower interest rates and higher investment, arguing instead that the interest rate is determined in the money market through the interaction of money demand and money supply. Investment, on the other hand, depends on the marginal efficiency of capital, which reflects expected profits relative to the interest rate.

Keynes developed this framework mainly to explain the economic failure during the Great Depression of the 1930s, where interest rates fell significantly without leading to higher investment or economic recovery. For instance, in the United States, interest rates dropped to around 1%, yet the demand for investment remained weak, showing that interest rate reductions alone could not restore economic activity.

Within Keynesian theory, saving and investment are always equal, but not because of automatic market forces as in classical theory. Instead, this equality is based on definitions: income equals output, which is divided into consumption and investment; saving is defined as income minus consumption; therefore, saving equals investment. This equality is achieved through changes in income: a decline in investment reduces income, which in turn reduces saving until it adjusts to the level of investment.[1]

[1] Ibid

### 5.4 The Relative Income Theory

The Relative Income Hypothesis developed by James Duesenberry (1949) explains consumption behavior as a socially influenced process rather than a purely individual and rational decision based only on absolute income. According to this theory, individuals determine their consumption not only by their current income but also by comparing their income and consumption levels with those of others in their social environment, as well as with the highest income level they have previously achieved. This creates what is known as the "demonstration effect," where people tend to maintain or increase their consumption in order to preserve their social status, even if their actual income does not significantly improve. As a result, consumption becomes relatively stable in proportion to income over time, but strongly influenced by relative income position within society, which in turn shapes saving behavior as the residual part of income after consumption.

### 5.5 The Permanent Income Theory

The Permanent Income Hypothesis developed by Milton Friedman (1957) attempts to reconcile Keynesian consumption theory with empirical observations. Friedman argues that consumption and saving decisions are not based on current observed income, but rather on permanent income, which reflects the long-term and expected average level of income. According to this theory, income is divided into permanent income and transitory (temporary) income. Permanent income is the main determinant of stable consumption patterns, while transitory income has only a limited and irregular effect, often being saved or used for durable goods. In addition, Friedman emphasizes that consumption habits are relatively stable over time, meaning that current consumption depends partly on past consumption levels. Consequently, saving is not simply a function of current income, but rather the residual of income after consumption determined by permanent income expectations.[1]

### 5.6 The Life Cycle Theory

The Life Cycle Hypothesis, developed by Modigliani and Ando, explains consumption and saving behavior as a long-term planning process over an individual's lifetime. According to this theory, individuals aim to smooth their consumption over time, maintaining a relatively stable standard of

[1] Warddi. M, **The Economic Determinants of Saving Algerian Households at the National Savings and Provident Fund Bank: An Econometric Study During the Period 1987–2019**, Journal of Economic Studies, vol. 26, no. 6, 2021, p: 20

living despite fluctuations in income. In early life, individuals often consume more than their income due to education, housing, and family formation, which may lead to borrowing. During the working years, income exceeds consumption, allowing individuals to save and accumulate wealth. In retirement, savings are then used to finance consumption when income declines or stops. Therefore, saving is not determined only by current income but by the individual's expected lifetime income and stage in the life cycle. Although the theory provides a useful dynamic view of saving behavior, it has been criticized for relying on strong assumptions such as perfect foresight and rational planning of future income, which are difficult to achieve in reality.[1]

[1] Ibid,p:21

## Section 03: Bank Deposit Dynamics in the Algerian Banking System

The banking system is influenced by legal and social frameworks that affect depositors' confidence and, consequently, their willingness to place funds in commercial banks. In this context, Algeria has undertaken significant efforts to create a favorable savings environment through the establishment of a modern legal framework, notably Law No. 91-01 on Money and Credit, which regulates banking activities and grants banks the necessary powers to perform various financial operations. This framework has enabled banks to effectively mobilize financial resources in the form of demand deposits, savings deposits, and time deposits. This chapter examines and analyzes two key areas: the evolution of deposits in Algeria and the deposit guarantee system.

### 1 Evolution of Bank Deposit Volume by Type of Deposit in Algeria (1990–2010)

#### 1.1 Evolution of Demand Deposits in Algeria (1990-2024)

Demand deposit mobilization in Algeria witnessed significant improvement during the early years of the study period, before beginning to fluctuate from 2009 onwards. demand deposits experienced continuous growth during the period from 1990 to 2008, increasing from 105.546 billion DA in 1990 to 2,946.919 billion DA in 2008, which represents the highest value recorded during this period.

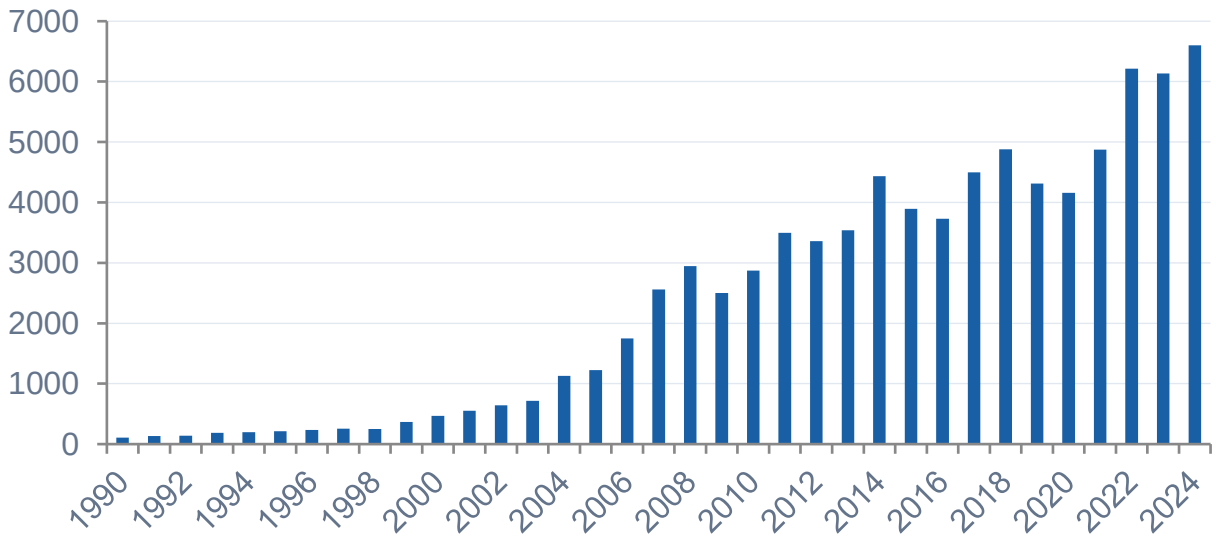
This increase in demand deposits is primarily attributable to the improvement in oil prices, which reached up to $98.96 per barrel, accompanied by a corresponding rise in hydrocarbon sector deposits. Algerian law requires that oil revenues in foreign currency be converted into local currency and deposited in the form of demand deposits with the Bank of Algeria's foreign branch, which manages the accounts of the national hydrocarbons company

After 2008, demand deposits followed a fluctuating trajectory, characterized by alternating increases and decreases from year to year. This volatility is attributed to the significant slowdown in hydrocarbon sector deposits, which are primarily held in the form of demand deposits. The decline in oil prices in 2009 to $62.35 per barrel led to a decrease in demand deposits by 443.993 billion DA compared to the previous year. Conversely, the opposite phenomenon occurs when oil prices rise.

the strong increase in bank demand deposits is attributable, by approximately 65%, to the deposits of the national hydrocarbons company, which benefited in late 2017 from the settlement of part of its receivables from the Public Treasury, estimated at 452 billion DA

Following an increase in the share of demand deposits by 8.5% in 2018, these deposits experienced a decline of 11.6% in 2019, followed by a less severe decline of 3.6% in 2020 compared to the previous year. Specifically, demand deposits decreased from 4,880.5 billion DA at the end of 2018 to 4,313 billion DA at the end of 2019, reaching 4,159.1 billion DA at the end of 2020. This decline resulted from the substantial decrease in hydrocarbon sector demand deposits by 46.1%. Excluding hydrocarbon deposits, bank demand deposits declined by 1.1% at the end of 2020, compared to a 0.5% decline at the end of 2019, Time deposits increased from 4,874.7 billion DA in 2021 to 6,216.7 billion DA in 2022, representing a rise of about 27.5%**.** They then slightly decreased to 6,134.5 billion DA in 2023 **,** before rising again to 6,602.64 billion DA in 2024**,** with an increase of approximately 7.6%**.** Overall, the evolution remains upward despite a temporary fluctuation in 2023.

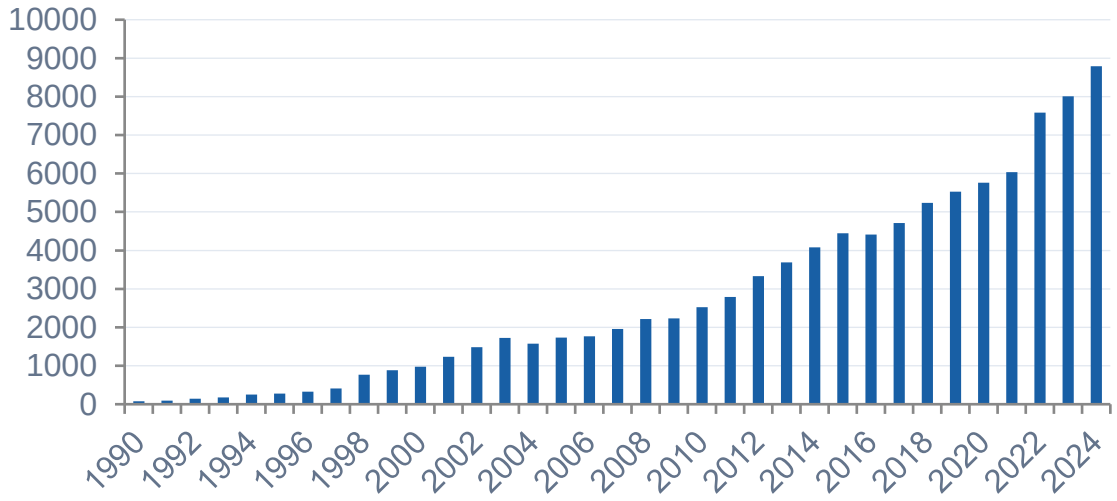
**Figure 1 : Evolution of Demand Deposits in Algeria during the period (1990–2024)**




**Source:** prepared by the student vased on the data presented in appendix

Time deposits in Algeria experienced continuous growth throughout the study period . time deposits increased from 72.923 billion DA in 1990 to 8 787,31 billion DA in 2024, representing a multiplication of more than 120 times over three decades.

**Figure 3 : Evolution of Time Deposits in Algeria during the period (1990–2024)**




**Source:** prepared by the student vased on the data presented in appendix

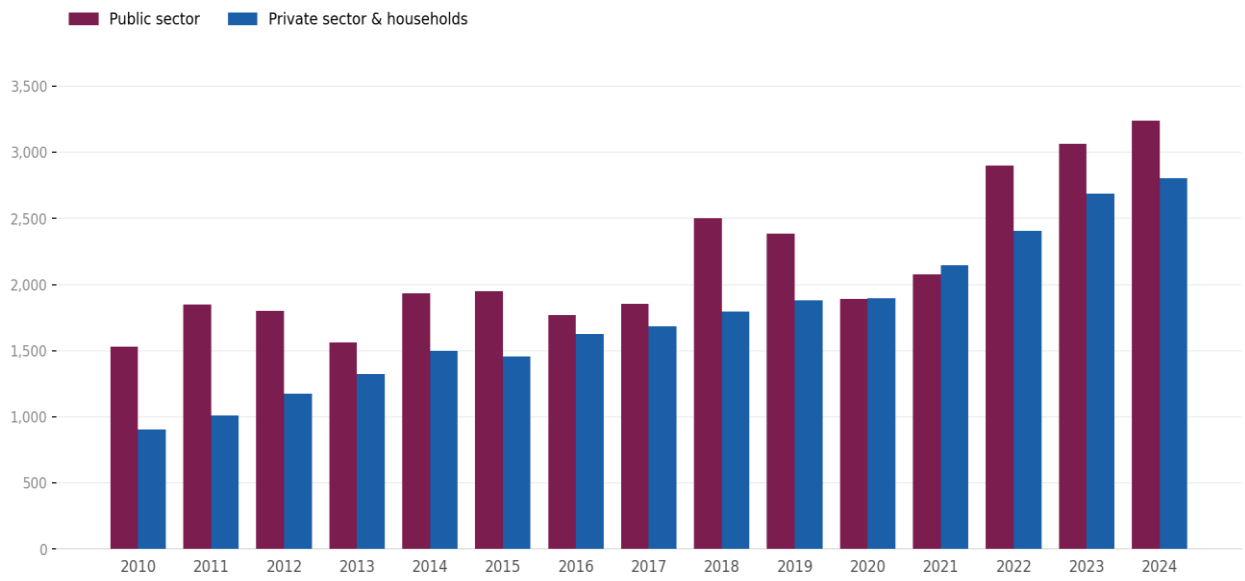
## 2 Evolution of Deposit Volume by Depositing Entity in Algeria (1990-2024)

### 2.1 Evolution of Demand Deposits by Depositing Entity in Algeria (2010–2024)

The following figure shows the distributuion of demand deposits in Algeria by depositor entity over the period (2010 –2024):

Demand deposits in Algeria are clearly dominated by the public sector, which accounts for roughly around 60%–65% of total demand deposits on average over the period, reflecting the strong influence of state-related revenues, especially hydrocarbons. In comparison, the private sector and households represent about 35%–40%, showing a steady but secondary contribution to overall liquidity in the banking system. Public sector deposits are generally higher and more volatile, while private deposits evolve more gradually, driven by income and savings behavior

**Figure 4 : Evolution of Demand Deposits by Depositing Entity in Algeria (2010–2024)**




**Source:** prepared by the student vased on the data presented in appendi

## 2.2 Evolution of Time Deposits by Depositing Entity in Algeria(2010-2024)

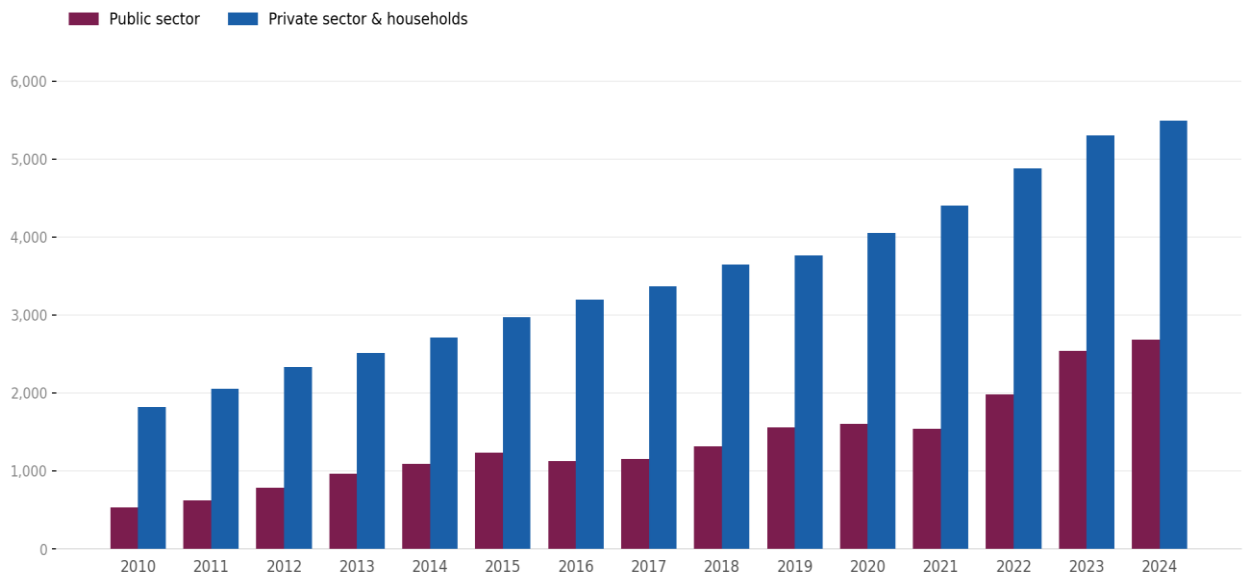
The following figure shows the distributuion of time deposits in Algeria by depositor entity over the period (2010 –2024):

It is observed that the private sector and households hold the largest share of time deposits throughout the period 2010–2024, except for limited fluctuations in certain years. This dominance reflects a generally increasing trend in private savings behavior, with time deposits reaching high levels in recent years, accounting for approximately around 65%–70% of total time deposits on average**.**

This relatively high share highlights the confidence of private economic agents (households, private enterprises, and associations) in the banking system, as well as their preference for medium- and long-term financial placement in banks.

In contrast, the public sector ranks second in terms of contribution to time deposits, with a lower and more stable share compared to the private sector. This indicates that public sector deposits play a less dominant role in time deposit formation, especially when compared to their stronger position in demand deposits.

**Figure 5 : Evolution of Time Deposits by** Depositing Entity in Algeria (2010–2024).




**Source:** prepared by the student vased on the data presented in appendix

## 3 Deposit Guarantee System in Algeria

The Algerian deposit guarantee system is administered by the Bank Deposit Guarantee Fund (SGDB), a joint-stock company under the supervision of the Bank of Algeria. It protects depositors by compensating them up to a specified limit in the event of a bank failure and aims to safeguard small depositors, maintain public confidence, prevent panic withdrawals, and ensure overall financial stability. Introduced after the private bank crises of the early 2000s, the system reinforces trust in the banking sector and addresses information asymmetry between banks and depositors. By providing an explicit guarantee, it encourages households and businesses to retain their funds in the formal banking system rather than relying on cash or informal savings channels[1]

### 3.1 Legal and Regulatory Framework

The Algerian deposit guarantee system has developed through several legal and regulatory stages:

- **Initial Provisions: Law 90-10 (1990)**

Law No. 90-10 of April 14, 1990, on money and credit introduced the concept of deposit protection and authorized the creation of a deposit guarantee company. However, its implementation was

[1] Joudi. L & Achour. F, **The Role of Deposit Insurance System in Bank Risk Management: Case Study of Algeria**, Journal of Human Sciences, vol. 2, no. 20, 2020, p: 25.

limited due to the dominance of public banks, whose implicit state guarantee rendered formal deposit insurance largely unnecessary .

- **Regulation 97-09 (1997)**

Regulation No. 97-09 of December 10, 1997, formally established the deposit guarantee framework. It required banks to participate in a guarantee fund, with annual contributions up to 0.5% of total deposits, and set a compensation limit of 100,000 DA per depositor. Despite this legal framework, the regulation remained largely theoretical and was not practically enforced .

- **Private bank crises (2001-2003)**

The collapse of Khalifa Bank in 2003, followed by the Industrial and Commercial Bank, exposed the vulnerability of depositors and eroded public confidence. These crises underscored the urgent need for an operational deposit guarantee system, prompting authorities to activate and strengthen the legal framework .

- **Regulation 14-13 (2004**)

Regulation No. 14-13 of March 4, 2004, established the Deposit Guarantee Fund (Fonds de Garantie des Dépôts Bancaires) as a legal entity under the supervision of the Bank of Algeria, providing the first operational mechanism for compensating depositors in case of bank failure.

- **Current Framework: Regulation 21-13 (2021)**

Regulation No. 21-13 of March 20, 2021, updated the deposit guarantee framework, increasing the compensation limit to 2,000,000 DA per depositor and clarifying the scope and exclusions of coverage. It constitutes the current legal foundation for deposit protection in Algeria.[1]

### 3.2 Coverage Scope of the Deposit Guarantee System

The guarantee covers nominative deposits that meet the following criteria:

- Demand Deposits: Current accounts and checking accounts.
- Savings Deposits: Savings books and similar accounts.

[1] Nid. S, **op. cit.**, p: 22-27

- Time Deposits (DAT**)**: Fixed-term deposit accounts.
- Local & Foreign Currency: Deposits in DA are covered. Deposits in Foreign Currency are also covered but are compensated exclusively in Algerian Dinars (DA), converted at the exchange rate valid on the day the bank's unavailability is declared.
- Islamic Banking: Investment accounts and Sharia-compliant products are explicitly protected under the 2023 Law.

Licensed Banks: Coverage applies to all banks licensed by the Bank of Algeria.

Foreign Branches: Branches of foreign banks operating on Algerian soil are subject to this system under the "territoriality of law" principle.

### 3.3 Exclusions from The Deposit Guarantee System

The Algerian deposit guarantee system strictly defines excluded deposits to ensure the fund protects small, non-professional savers rather than institutional actors or those responsible for bank failure. According to Regulation No. 20-03, the following categories are excluded from the 2,000,000 DA guarantee:

1.Professional and Institutional Deposits

- Interbank Deposits**:** Funds from other banks or financial institutions
- Government and Public Authorities: Deposits from central or local administration
- Social and Pension Funds: Deposits from social security and retirement funds
- Investment Schemes: Deposits of collective investment undertakings (OPCVM)

2. Insider and Connected Persons

- Major Shareholders: Any shareholder holding five percent or more of bank capital
- Management and Oversight: Deposits of directors, managers, and statutory auditors
- Employee Shareholders**:** Deposits of bank employees who are also shareholders[1]

3. Regulatory and Legal Exclusions

[1] Bank of Algeria, **Regulation No. 2020-03 of 15 March 2020 on the Bank Deposit Guarantee System**, Official Journal of the Algerian Republic, no. 16, 24 March 2020

- Central Bank Retrocession**:** Foreign currency deposits repurchased by the Bank of Algeria
- Investment Deposits: Deposits held in banks licensed for specialized investment operations
- Anonymous Deposits**:** Deposits where the beneficial owner is not explicitly identified
- Criminal Activity: Deposits resulting from final criminal convictions, including money laundering
- Preferential Treatment: Deposits with advantageous interest rates that worsened the bank's financial situation
- The Fund Itself**:** Deposits belonging to the Deposit Guarantee Fund (FGDB)[1]

## 3.4 Objectives of the Deposit Guarantee System

The Algerian deposit guarantee system aims to enhance financial stability and protect depositors by addressing key vulnerabilities in the banking sector.

### 3.4.1 Protection of Small Depositors

The system safeguards households and small businesses, which generally lack the capacity to evaluate bank risk, by compensating deposits up to 2,000,000 DA, ensuring meaningful coverage for the majority of depositors .

### 3.4.2 Maintaining Public Confidence

By providing an explicit guarantee, the system reinforces trust in banks, ensuring that depositors retain funds in the formal financial system even during economic uncertainty .

### 3.4.3 Preventing Bank Runs

Assurance of compensation reduces panic withdrawals, mitigating the risk of self-fulfilling bank runs that can threaten even solvent institutions.[2]

### 3.4.4 Ensuring Financial Stability

By protecting depositors and sustaining confidence, the system supports continuous credit provision and payment services, complementing prudential regulation and central bank oversight to prevent systemic crises.

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[1] Ibid

[2] Sedra. A, **Bank Deposit Guarantee System: Between Support and Opposition – Case Study of Algeria (2018)**, University of Algiers 3, Algeria, 2019, p: 27-28

### 3.4.5 Encouraging Formal Savings

The guarantee incentivizes households and firms to save within banks rather than informal channels, promoting financial inclusion and mobilizing resources for investment[1].

[1] Ibid

## Conclusion

At the end of this chapter, we conclude that we have clarified the main concepts related to the banking system and bank deposits, which represent a key mechanism for the functioning of banks. Indeed, banks play an essential role in the economy by collecting deposits and transforming them into credit, which contributes to liquidity creation and ensures the proper functioning and stability of the financial system.

This chapter also highlighted the importance of bank deposits in Algeria, as they constitute the main source of bank resources despite the persistence of cash outside the formal banking circuit. Furthermore, it showed that regulatory reforms and banking policies have contributed to improving deposit mobilization, although several challenges still limit their full effectiveness.

Therefore, understanding the structure and role of bank deposits is essential for analyzing banking sector performance. The following chapter will focus on the determinants influencing deposit in greater detail.

# CHAPTER 02: THE DETERMINANTS OF BANK DEPOSITS LITERATURE REVIEW.

## Introduction

Studies on bank deposits and the identification of their determinants have become an important topic in banking and financial economics. Bank deposits are considered a key element in the stability and functioning of the banking system, as they represent the main source of funding for commercial banks and play a central role in financial intermediation.

The determinants of bank deposits can be classified either as internal factors related directly to the banking institution and its specific characteristics (micro variables), or as external factors related to the economic and financial environment in which banks operate (macro and sectorial variables), such as economic growth, inflation, financial development, market structure, financial liberalization, and financial technology. Indeed, while internal factors can be influenced and managed by bank management, external macroeconomic and structural factors are beyond the direct control of individual banks.

This chapter aims to identify the main determinants that influence bank deposits and to provide a brief review of empirical findings for each determinant, while relying on the relevant theoretical foundations presented in the previous chapter..

This chapter is structured as follows:

- **Section 1:** Microeconomic and Bank-Specfic determinants.
- **Section 2:** Macroeconomic determinants of Bank Deposits
- **Section 3 :** Sectoral Determinants of Bank Deposits.

## Section 01: Microeconomic and Bank-Specific Determinants of Bank Deposits

In this section, we examine the main microeconomic and bank-specific factors that influence bank deposits. These determinants, including variables such as bank size, profitability, liquidity, credit risk, and efficiency, play a crucial role in shaping deposit mobilization and depositor behavior. These factors do not operate in isolation; rather, they interact to influence the attractiveness, stability, and growth of bank deposits. A comprehensive understanding of these determinants, supported by relevant theoretical and empirical studies, is essential for evaluating banks' ability to attract and retain deposits and to ensure the stability of their funding structure.

### 1 Profitability

Profitability, proxied by Return on Assets (ROA), is a key financial indicator that measures a bank's ability to generate profits from its total asset base. It reflects the efficiency with which a bank utilizes its resources to produce earnings. ROA is also widely used as an overall measure of investment profitability, as it captures the performance of both short-term and long-term bank investments. In addition, it reflects the effectiveness of managerial decisions in allocating and using available resources, thereby indicating the quality of investment and operational management[1].

The relationship between Return on Assets (ROA) and bank deposits is generally positive, as profitability plays an important role in shaping depositor confidence and behavior. A higher ROA reflects the bank's ability to efficiently generate profits from its asset base, which signals financial strength and stability. This, in turn, increases trust among depositors and encourages them to place more funds in the bank.

In this context, The study conducted by Haddawee and Flayyih (2020)[2] examines the relationship between deposit structures and bank profitability. The results indicate a positive and statistically significant relationship between deposits and profitability indicators, suggesting that deposits constitute a key source of funding that supports income-generating lending activities. The study further shows that the impact of deposits varies according to their type, with savings deposits having the strongest positive effect on profitability, followed by time deposits, while current

[1] Al-Arabi. M & Troubia. N, **The Impact of Liquidity on Profitability in Islamic Banks: An Econometric Study of Islamic Banks in Qatar**, Al-Bashair Economic Journal, no. 3, 2025, p: 52

[2] Haddawee. A. H & Flayyih. H. H, **The Relationship Between Bank Deposits and Profitability for Commercial Banks**, International Journal of Innovation Creativity and Change, no. 7, 2020, p: 26.

deposits contribute the least. This difference is explained by the relative stability of deposit types, as more stable funds enhance the bank's ability to generate returns. In addition, the authors highlight the importance of effective management in maximizing the benefits of deposits, particularly through competitive interest rates and diversification of credit allocation. These findings confirm the central role of deposits in improving bank performance.

The study conducted by Putra and Vidyantari (2023) examines the relationship between the growth of savings, deposits, and profitability using a sample of 54 Village Credit Institutions (LPD) in the Kintamani District over the period 2020–2022. Employing a multiple linear regression model, the authors find that savings growth has a positive and statistically significant effect on profitability, indicating that an increase in savings enhances banks' capacity to generate income through lending activities. In contrast, deposit growth is found to have an insignificant effect on profitability. This result is explained by the high cost associated with deposits, particularly interest expenses, as well as inefficiencies in the allocation of collected funds. Consequently, the study suggests that the contribution of deposits to profitability depends not only on their volume but also on their cost and effective utilization[1]

Shasnil Avinesh Chand, in his study on the Fijian banking sector, demonstrates that profitability is a significant and positive determinant of bank deposit growth. Using data from 2000 to 2022, the author shows that banks with strong financial performance, often measured by return on assets (ROA), tend to inspire greater confidence among depositors. This financial strength is perceived by the public as an indicator of stability and safety for their funds, which in turn encourages the mobilization of domestic savings. The study therefore concludes that a bank's ability to generate profits not only strengthens its financial position but also plays a key role in attracting deposits, which are essential for financing economic activity[2]

[1] Putra. I. W. G. Y. D & Vidyantari. P. K, **The Effect of Savings Growth, Deposit Growth, and Credit Growth on Profitability Growth**, International Journal of Environmental, Sustainability and Social Science, no. 6, 2023, p: 71

[2] Chand. S. A**, Determinants of Bank Deposit in a Small Economy's Banking Sector: A Study of Fiji**, Asian Journal of Accounting Research, no. 2, 2024, p: 173-187.

## 2 Bank Size

Bank size is generally defined as the total value of assets reported on the balance sheet, including loans, investments, cash holdings, and fixed assets. It is considered a key indicator of a bank's financial capacity, operational efficiency, and ability to manage risks effectively.

The literature widely suggests that larger banks benefit from several advantages compared to smaller institutions. These include stronger reputation, greater experience in risk management, and the ability to exploit economies of scale, which contribute to reducing operational costs and improving efficiency. In addition, large banks are better positioned to diversify their activities, access financial markets, and obtain funding at lower costs. As a result, they tend to exhibit lower risk exposure and more stable returns .[1]

From the perspective of deposit behavior, bank size plays a crucial role in attracting and retaining deposits. Larger banks are generally perceived as more stable and trustworthy by depositors due to their strong financial position and institutional credibility. This perception reduces uncertainty and encourages individuals and firms to place their funds in these institutions. Therefore, an increase in bank size is often associated with a higher capacity to mobilize and sustain deposits.[2]

Ferrouhi (2017) investigated the determinants of bank deposits in Morocco for the period 2003–2014 using panel data regression. The author found that bank size, measured by the logarithm of total assets, is a significant determinant that is positively correlated with the volume of deposits at the 1% level. The author also observed that large banks collect more deposits compared to smaller banks, indicating that the scale of a financial institution plays a critical role in attracting customer funds. He concluded that bank size is one of the primary bank-specific factors that explains the behavior of depositors and the growth of deposits within the Moroccan banking sector.[3]

D'Avernas, Eisfeldt, Stanton, Huang, and Wallace (2024) examined the differences in the deposit business models between large and small banks for the period 2001–2020. The authors found that bank size is a critical determinant of deposit-pricing behavior and customer interaction. Specifically, they observed that large banks consistently offer lower deposit rates across all major products such as checking, savings, and certificates of deposit compared to small banks. The

[1] Semhan. A & Jomaa. R, **Bank Size, Risk Management and Financial Performance in Commercial Banks**, Journal of Banking Studies, no. 2, 2018, p: 45

[2] Kandouz. M & Mouaich. K, **"Economies of Scale and Risk Diversification in Large Banking Institutions"**, International Journal of Finance and Banking Research, no. 3, 2022, p: 101-118.

[3] Ferrouhi, **op. cit.**, p: 27

authors also found that large banks typically set uniform deposit rates across all their branches nationally, whereas small banks fine-tune rates to local market conditions.Furthermore, the research highlights that customers of large banks exhibit significantly lower rate elasticities, meaning they are less sensitive to interest rate changes than small bank customers. The authors concluded that large banks compensate for lower rates by offering superior financial services, such as advanced online banking and extensive ATM networks, and strategically locate in high-income, densely populated urban areas where customers prioritize service technology over interest income.[1]

## 3 Liquidity Ratios

Liquidity ratios serve as fundamental financial metrics designed to assess a bank's capacity to meet its short-term obligations including sudden depositor withdrawals, loan demands, and debt repayments using its most liquid assets. In line with the regulatory framework established by the Basel Committee on Banking Supervision, these ratios play a crucial role in ensuring the resilience of banking institutions under stress conditions. Within the scope of prudent balance sheet management, liquidity ratios help identify critical funding trends and ensure that banks maintain access to stable, low-cost funding sources.

To sustain adequate liquidity, banks typically rely on a three-pillar strategy: holding High-Quality Liquid Assets (HQLA**)**, securing a stable base of retail deposits, and maintaining interbank credit lines. Crucially, strong liquidity positions enhance depositor confidence by signaling a bank's ability to meet withdrawal demands, thereby supporting deposit stability and functioning as an early-warning system for financial health[2].

In situations of uncertainty, a loss of confidence among depositors can trigger funding liquidity risk, manifesting as a sudden and massive withdrawal of funds a classic bank run that can lead to insolvency. Under these stress conditions, banks initially seek liquidity in the interbank market; however, as counterparty risk increases, lenders demand higher risk premiums or additional collateral, rendering this source of funding increasingly inaccessible. Consequently, banks may be forced to turn to financial markets to liquidate assets at distressed prices. These fire sales further

[1] D'Avernas. A, Eisfeldt. A. L, Huang. C, Stanton. R. H & Wallace. N. E, **The Deposit Business at Large vs. Small Banks**, Fisher Center for Real Estate and Urban Economics, University of California, Berkeley, 2024

[2] Vodová. P, **Liquidity of Czech and Slovak Commercial Banks**, Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis, no. 7, 2012, p: 76

weaken the bank's liquidity position and create a dangerous interdependence between bank stability and market prices.

This transmission of risk is often bidirectional market illiquidity reduces asset values, which in turn raises doubts about bank solvency, leading lenders to restrict financing even further. This creates a reinforcing "liquidity-solvency" feedback loop. Ultimately, these conditions directly impact bank deposits; as declining liquidity and falling asset values undermine depositor confidence, the likelihood of systemic withdrawals increases, amplifying overall financial instability[1].

Several empirical studies have examined the relationship between liquidity ratios and bank deposits as presented in the following :

The relationship between deposit composition and liquidity risk is empirically supported by Gauthier and Nguyen (2022). Their study examines the six largest Canadian chartered banks (2012–2021) using a fixed-effects regression model. The findings reveal that the proportion of retail deposits has a positive and statistically significant effect on the Liquidity Coverage Ratio (LCR), confirming that a higher share of stable household deposits enhances liquidity resilience. Conversely, wholesale and brokered deposits show a negative or insignificant effect, reflecting their heightened sensitivity to market volatility. These results align with Bank Run Theory, highlighting that the internal structure of a bank's funding specifically the dominance of retail deposits is a primary determinant in maintaining depositor confidence and reducing systemic liquidity risk[2].

Kamau et al. (2013) investigate the relationship between bank deposits, liquidity, and lending behavior. Their findings indicate that higher levels of deposits reduce banks' incentives to hold liquid assets, as banks prefer to allocate funds toward more profitable lending activities. However, a decline in money inflows relative to deposits leads to a decrease in the loans-to-deposits ratio,

[1] Derrardja. N, Talhaoui. F & Zaid. H, **The Determinants of Bank Liquidity: A Look at Algerian Banks Put to the Test by the Covid-19 Crisis**, Revue des Sciences Humaines, University of Oum El Bouaghi, 2022, p: 45
[2] Gauthier. C & Nguyen. T, **Influence of Deposit Structure on the Liquidity of Chartered Banks in Canada**, 2022.

reflecting a more conservative lending strategy. The study highlights that deposit levels play a key role in shaping banks' liquidity management and credit expansion behavior[1]

## 4 The Capital Adequacy Ratio (CAR)

The Capital Adequacy Ratio (CAR**)** is a primary indicator of a bank's financial strength, reflecting its ability to absorb potential losses arising from economic and financial shocks. Therefore, a higher CAR indicates a stronger capital position and reduced dependence on external funding, which significantly enhances financial stability[2].

According to the Basel Committee on Banking Supervision (1999), capital adequacy ensures that a bank's own funds are utilized to absorb losses before depositor funds are compromised. This is particularly crucial because bank funding is predominantly composed of short-term liabilities; thus, robust capital buffers are essential to sustain market trust and prevent sudden withdrawals.[3]

From a behavioral perspective, a well-capitalized bank is perceived by the public as safer and more stable. This perception reinforces depositor confidence, encouraging individuals and firms to maintain their funds within the banking system. Consequently, the CAR is not merely a regulatory metric but a fundamental determinant of deposit behavior. Overall, the ratio plays a dual role: it secures institutional stability while simultaneously supporting the bank's capacity to attract a stable deposit base through reduced perceived risk.

Several empirical studies have examined the relationship between capital adequacy and bank deposits as presented in the following :

Yaqoob and Sabhan examined the effect of financial soundness indicators on the volume of bank deposits of five Iraqi banks listed on the Iraq Stock Exchange (2015–2022). The authors found that there is a direct and positive relationship between the capital adequacy ratio and the growth of bank deposits. The authors also observed that banks with high capital adequacy ratings, such as Assyria

[1] Kamau. A. W, Kiptui. M. C & Karingi. S. N, **Determinants of Bank Lending and Liquidity Management in Commercial Banks**, Research Paper, Central Bank of Kenya, 2013
[2] Moyer. S. E, **Capital Adequacy Ratio Regulations and Accounting Choices in Commercial Banks**, Journal of Accounting and Economics, vol. 13, no. 2, 1990, p: 123.
[3] Basel Committee on Banking Supervision (BCBS**), Capital Requirements and Bank Behaviour: The Impact of the Basle Accord,** BIS Working Papers No. 1 (Ba*sel*: Bank for International Settlements, 1999)

International Bank and the Bank of the Region, successfully enhanced their ability to attract and mobilize deposits. They concluded that maintaining robust capital levels serves as a fundamental signal of safety that reinforces depositor confidence, thereby confirming the hypothesis that capital adequacy has a significant positive effect on the volume of bank deposits.[1]

Ünvan and Yakubu (2020) investigate the effect of bank-specific factors on deposit mobilization in Ghana, including the capital adequacy ratio (CAR) as a key indicator of bank soundness. Their empirical results show that capital adequacy has a negative and statistically insignificant relationship with bank deposits. This suggests that higher capitalization does not necessarily lead to increased deposit mobilization, and in some cases, highly capitalized banks may rely less on deposit funding in their operations. The findings therefore indicate that CAR is not a strong determinant of deposit growth in the Ghanaian banking context[2].

## 5 Non-Performing Loans (NPL)

Non-performing loans (NPLs) are a key indicator of credit risk and loan quality in the banking sector. According to Bessis (2015), effective management of credit risk is essential for maintaining the quality and sustainability of banks' lending activities. Loan quality is commonly assessed through the level of non-performing loans, where a lower NPL ratio reflects stronger asset quality and more efficient capital allocation, ultimately supporting bank profitability.[3]

A low and declining NPL ratio signals improved bank performance and enhances depositor confidence, thereby supporting higher levels of deposits. In contrast, a high level of NPLs increases perceived credit risk, weakens trust in the banking system, and may discourage deposit mobilization.

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[1] F. A. Yaqoob and M. H. A. Sabhan, **Enhancing the Volume of Bank Deposits Using Financial Soundness Indicators: Applied Research in a Sample of Banks Listed on the Iraqi Stock Exchange (2015–2022)**,Journal of Accounting and Financial Studies, *no. 67, 2024, p52.*

[2] Ünvan. Y. A & Yakubu. I. N, **Do Bank-Specific Factors Drive Bank Deposits in Ghana?**, Journal of Computational and Applied Mathematics, 2020, p:12.

[3] Messai. A. S & Jouini. F, **Micro and Macro Determinants of Non-Performing Loans**, International Journal of Economics and Financial Issues, no. 4, 2013, p: 852-860.

Empirical evidence supports this relationship. Fueda and Konishi (2007) find that the NPL ratio has a negative and significant effect on deposit growth. [1]Similarly, Baehaqie et al. (2018) show that lower NPL levels are positively associated with deposit growth, indicating that stronger asset quality improves banks' ability to attract deposits. More recently, [2]Le Hoang Vinh et al. (2022) confirm, using GLS and LASSO estimations, that NPLs have a negative and significant impact on customer deposits. Their findings show that higher NPL levels reduce depositor confidence and weaken deposit mobilization, while better loan quality enhances trust in the banking system and supports deposit growth.[3]

## 6 Bank Efficiency

Bank efficiency refers to the optimal use of available economic resources to achieve the maximum possible returns at the lowest possible cost, through effective management of financial and human resources. It reflects the bank's ability to transform inputs into outputs in an efficient manner while maintaining high performance and financial stability.

Bank efficiency encompasses several dimensions, including cost efficiency, scale efficiency, and scope efficiency, which together determine how effectively a bank utilizes its resources and diversifies its activities.

From a theoretical perspective, higher efficiency enables banks to reduce operating costs, improve service quality, and enhance overall performance. This, in turn, strengthens depositor confidence and contributes to increased deposit mobilization. Conversely, inefficiency may lead to higher costs and weaker performance, which can discourage customers from depositing their funds.[4]

Empirical evidence on the relationship between bank efficiency and deposits remains mixed:

Abdelzaher (2023) examined the determinants of deposit mobilization in 12 Egyptian listed banks over the period 2003-2019. Using descriptive statistics, Pearson correlation matrices, and two-way random effects models, the study found a significant positive correlation between the efficiency

[1] Fueda. I & Konishi. M, **Depositors' Response to Deposit Insurance Reforms: Evidence from Japan, 1990–2005**, Journal of Financial Services Research, vol. 31, no. 2, 2007, p: 101-122.

[2] Baehaqie. S, Fahmi. I & Beik. I. S, **Determining Factors of Deposit Level of Islamic Bank in Indonesia**, Al-Iqtishad: Jurnal Ilmu Ekonomi Syariah, vol. 9, no. 2, July 2017, p: 213-226.

[3] Le Hoang Vinh, Pham Le Quang, Bui Anh Thanh & Nguyen Anh Phuong, **Factors Affecting the Level of Customer Deposits: The Case of Commercial Banks in Vietnam**, Transactions on Social Science, Education and Humanities Research, vol. 13, 2022

[4] Hassan. M, **The Impact of Market Structure on Banking Efficiency: A Case Study of Algerian Commercial Banks**, Doctoral dissertation, Faculty of Economic, Commercial and Management Sciences, Department of Economic Sciences, University of Mohamed Khider Biskra, 2017.

[1]ratio and deposit growth. This finding suggests that more efficient banks are better able to attract and retain customer deposits, supporting the view that efficiency enhances depositor confidence and bank performance.

In contrast, Yakubu and Abokor (2020) investigated the determinants of deposit growth in Turkey from 2000 to 2016 using the Autoregressive Distributed Lag (ARDL) approach. The authors found that bank efficiency has a negative significant effect on deposit growth in the long run. They explained that Turkish banks, despite being efficient in their investment decisions, do not pass these returns to depositors in the form of higher deposit interest rates. As a consequence, lower deposit interest rates reduce customers' willingness to commit their funds to bank deposits. Nevertheless, the authors emphasized that the statistical significance of bank efficiency indicates its vitality in bank deposit mobilization.[2]

[1] Abdelzaher. M. A, **Determining Factors Affecting the Mobilization of Deposits in Egyptian Listed Banks**, International Journal of Economics and Financial Issues, no. 3, 2023, p: 11-17.
[2] I. N. Yakubu and A. H. Abokor, **Factors Determining Bank Deposit Growth in Turkey: An Empirical Analysis,** Rajagiri Management Journal , no. 2 ,2020, p121–132

## Section 02 : Macroeconomic Determinants of Bank Deposits

The level of bank deposits is closely linked to overall economic conditions. Macroeconomic variables such as economic growth, inflation, and exchange rates play a crucial role in shaping saving behavior and depositor confidence. These factors interact and may either stimulate or constrain deposit accumulation depending on the economic environment.

The following section presents the main macroeconomic variables identified in the literature as significant determinants of bank deposits

### 1 Gross Domestic Product (GDP)

Gross Domestic Product (GDP) is defined as the total monetary value of all final goods and services produced within a national territory over a specific period (usually one year). Unlike Gross National Product (GNP), GDP focuses on the geography of production, it accounts for all wealth created on national soil, regardless of whether the producers are residents or foreigners. As an aggregate measure of national income, it serves as a fundamental basis for analyzing the propensity of economic agents to save and deposit their funds with credit institutions.

The relationship between financial development and economic growth has garnered significant attention within economic literature, particularly in the field of development economics. Following extensive theoretical and empirical research, three distinct approaches have emerged regarding the causal nature of this relationship.

Among these, the Demand-Following Hypothesis, introduced by Robinson (1952**)**, stands as a cornerstone for understanding this dynamic. This hypothesis posits a unidirectional causal relationship moving from economic growth to financial development. Robinson argues that the evolution of the financial sector occurs as a direct consequence of macroeconomic activity. Specifically, continuous growth within the real sector stimulates an increased demand for financial services.[1]

To keep pace with this rising demand for sophisticated financial tools and services, financial institutions such as commercial banks expand their operations and infrastructure. Consequently, a positive correlation is established as the economy grows (represented by GDP), the financial sector

[1] Callen. T, **Gross Domestic Product: An Economy's All**, Finance & Development, vol. 45, no. 4, 2008, p: 18

develops accordingly, leading to enhanced mobilization of bank deposits and broader financial intermediation.

Numerous empirical studies within the literature of development economics have explored the causal nexus between economic growth and bank deposits in both developing and developed economies. However, the academic debate regarding the exact nature of this relationship remains unresolved, as evidenced by the divergent findings across different economic contexts.
Despite the prevailing view that economic growth drives financial development, several empirical investigations suggest that this relationship is not always straightforward.

These studies highlight cases where GDP growth does not directly translate into deposit mobilization, or where the impact is limited to specific banking activities like lending rather than saving.
Kumar and Chauhan (2015**)** in their analysis of the Indian economy, the authors utilized Co-integration and the Engle-Granger Causality test. Their findings revealed a lack of significant causal relationship between savings deposits in commercial banks and India's Gross Domestic Product (GDP). This implies that in certain emerging markets, bank deposits may be independent of aggregate national output[1].

Mushtaq and Saba (2014) investigating the nexus between banking activities and economic growth in Pakistan, this study provided anuanced perspective on the Demand-Following Hypothesis Interestingly, the authors found that while a unidirectional causality exists from GDP growth to bank credit (lending), there was no significant short-run or long-run causality regarding savings (deposits).[2]

The authors argue that economic prosperity primarily drives the demand for investment loans by SMEs and individuals. However, the lack of causality toward deposits suggests that other structural

[1] Kumar & Chauhan, **Impact of Commercial Deposit in Banks with GDP in Context with Pradhan Mantri Jan Dhan Yojna**, BVIMSR's Journal of Management Research, vol. 7, no. 1, April 2015
[2] Mushtaq. S & Saba. M, **Banking Sector Development and Economic Growth in Pakistan: Evidence from Causality Analysis** , Journal of Applied Economics and Business Research, vol. 4, no. 2, 2014, p: 30-35.

factors such as technology, infrastructure, and human resources may play a more dominant role in influencing the saving behavior of the population than GDP growth alone.

Tahir (2008) Analyzing the Pakistani economy, Tahir established a unidirectional causal flow from economic growth to financial sector expansion. This relationship was found to be consistent in both the short-run and the long-run, reinforcing the idea that sustained GDP growth is a prerequisite for financial deepening.[1]

In contrast, a significant body of literature supports the unidirectional causal link from the real economy to the financial sector:

Liang and Reichert (2006) in their extensive study, the authors identified a unidirectional causal relationship running from economic growth to the financial sector. Notably, they found that this causal link is significantly stronger in developing countries compared to developed nations, suggesting that emerging economies rely more heavily on real output to stimulate their banking systems[2].

Awdeh (2012) Focusing on the Lebanese economy, the author provided empirical support for the demand-following hypothesis. The study concluded that a one-way causal direction exists from economic growth to financial development, where the increasing needs of a growing economy drive the evolution and expansion of financial institutions.

More specifically, numerous studies investigating the macroeconomic determinants of bank deposit growth have identified economic expansion measured by either Gross Domestic Product (GDP) growth or GDP per capita as a fundamental driver[3].

Fisnik and Rufi (2019) in their research on the macroeconomic determinants of deposit growth in the Western Balkan countries, the authors similarly concluded that economic growth exerts a positive influence on deposit performance. Their study reinforces the idea that the overall health

[1] M. Tahir, **Financial Development and Economic Growth in Pakistan: A Time Series Analysis**, Pakistan Economic and Social *Review* 46, no. 2 ,2008, p 17.

[2] Liang. H & Reichert. A, **The Relationship Between Economic Growth and Financial Development: Evidence from Developed and Developing Countries**, Journal of Banking and Finance, vol. 30, no. 10, 2006, p: 17-22.

[3] Awdeh. A**, Banking Sector Development and Economic Growth in Lebanon**, International Research Journal of Finance and Economics, vol. 100, 2012, p: 34.

[1]of the macroeconomy is a critical factor in enhancing the banking sector's ability to mobilize savings.

Ibrahim and Aziza (2020) Utilizing the Autoregressive Distributed Lag (ARDL**)** model, the authors demonstrated that economic growth, represented by real GDP growth, has a significant impact on deposit growth in the long run. Their findings suggest that as the real economy expands, it creates a sustainable foundation for the continuous accumulation of bank deposits.[2]

Naula, Zamora, and Gomez (2025) Utilizing an ARDL framework, this research identified a positive and statistically significant long-run relationship between Gross Domestic Product (GDP) and bank deposits. The study established an estimated elasticity of 0.378%, suggesting that for every 1% increase in aggregate national output, there is a corresponding growth in the deposit base. These results indicate that real economic activity is a primary driver of deposit mobilization, especially in institutional settings where credit markets are volatile[3].

## 2 The Inflation Rate

The Inflation Rate is a quantitative macroeconomic measure that reflects the percentage rate of change in the general price level of a basket of selected goods and services in an economy over a specific period. It serves as the primary indicator of the erosion of purchasing power; it represents the speed at which a currency loses its value, thereby reducing the real worth of monetary assets.

Inflation is considered one of the factors that indirectly affect the volume of bank deposits, as it is closely related to the traditional functions of money, namely as a medium of exchange, a unit of account, and a store of value. An increase in the inflation rate leads to a decline in the purchasing power of money, which encourages individuals to increase their consumption and reduces their incentive to save. This, in turn, negatively affects the level of savings deposits. Conversely, lower inflation rates tend to promote saving behavior[4]. Furthermore, inflation impacts savings through the gradual erosion of their real value, particularly in cases where the real interest rate is negative.

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[1] Fisnik. M & Rufi. O, **The Impact of Macroeconomic Factors on the Level of Deposits in the Banking Sector: An Empirical Analysis in the Western Balkan Countries"**, Journal of Accounting, Finance and Auditing Studies, vol. 5, no. 3, 2019, p: 16-29.

[2] Ibrahim. N. Y & Aziza. H. A, **Factors Determining Bank Deposit Growth in Turkey: An Empirical Analysis**, Rajagiri Management Journal, vol. 14, no. 2, 2020, p: 121-132.

[3] Naula. R, Zamora. P & Gomez. L, **The Relationship Between GDP and Bank Deposits: Evidence from an ARDL Approach**, Journal of Financial Economics and Development, vol. 12, no. 1, 2025, p: 45-67.

[4] M. Abu Al-Saud, N. Al-Shammari, and H. Al-Mutairi, "**Inflation Measurement and Macroeconomic Indicators**," International Journal of Economics and Finance *4, no. 10 ,2012.*

Several empirical studies on the determinants of bank deposit growth confirm that inflation is one of the key variables that negatively influence deposit growth:

Youssef (2018) examined the effects of inflation and interest rates on bank deposit behavior in the Egyptian Monetary Market over the period 2008–2018. The results showed that inflation has a statistically significant effect on bank deposits**,** with a particularly strong influence on foreign currency deposits compared to local currency deposits. This indicates that inflation plays an important role in shaping depositor behavior, affecting how individuals and institutions manage their funds in response to macroeconomic changes.[1]

Al-Amro, Al-Adhaileh, and Al-Alaya (2018) In their study, the authors identified a clear inverse relationship between inflation and bank deposits. Their findings suggest that rising inflation levels exert a significant negative pressure on household savings.The logic behind this relationship is twofold: first, inflation reduces the purchasing power of consumers, leaving them with less disposable income to save. Second, it diminishes the future value of money, which discourages long-term saving. Consequently, individuals tend to shift their behavior toward immediate consumption[2].

Among these studies, the study conducted by Hasanov, Vasa, Guliyeva, Giyasova, and Shakaraliyeva (2025) examined the impact of macroeconomic variables, with a particular focus on the inflation rate, on bank deposits in Azerbaijan over the period 2001–2021. Using the ARDL bounds testing approach and the Toda–Yamamoto Granger causality test, the study found that inflation has a negative and statistically significant effect on bank deposits in the long run. Specifically, increases in the inflation rate were shown to reduce deposit levels, indicating that higher inflation discourages savings and limits deposit growth within the banking system. These findings highlight the importance of monitoring the inflation rate as a key macroeconomic determinant affecting banking sector performance[3].

[1] Youssef. A, **The Effects of Inflation and Interest Rates on Bank Deposit Behavior in the Egyptian Monetary Market (2008–2018)**, Journal of Banking and Financial Studies, vol. 12, no. 3, 2018, p: 55-72.
[2] Al-Amro. S, Al-Adhaileh. M & Al-Alaya. H, **The Impact of Inflation on Bank Deposits: Evidence from Household Savings Behavior**, International Journal of Economics and Finance, vol. 10, no. 6, 2018, p: 101-110.
[3] Hasanov. R, Vasa. L, Guliyeva. N, Giyasova. S & Shakaraliyeva. A, **Macroeconomic Determinants of Bank Deposits: Evidence from Azerbaijan Using ARDL and Toda Yamamoto Approaches**, Economic Analysis and Policy, vol. 85, 2025, p: 210-225.

## 3 Exchange Rate

Exchange rate is the price of one unit of foreign currency in terms of the domestic currency, or equivalently, the amount of domestic currency required to purchase one unit of foreign currency. It is influenced by various factors, primarily macroeconomic in nature. Changes in these factors can cause a currency to appreciate or depreciate relative to other currencies. The determination of exchange rates depends on the country's monetary authority and the prevailing exchange rate regime, whether it **is** fixed, floating, or managed . Exchange rates serve as a crucial link between the domestic and international markets, affecting the trade of goods, services, and financial assets.

Building on the theoretical understanding of exchange rates, several studies have explored their impact on bank deposits, revealing significant relationships in diverse economic contexts:

Vincent Akinsola Akinyemi, Emeka Ogboada, and Yakubu Ismaila Balai (2022) show that exchange rate volatility has a positive and significant effect on customer deposits in deposit money banks in Nigeria over the period 1991–2021**.** While it is generally expected that higher exchange rate volatility would reduce depositor confidence, the results indicate that deposits increase with currency fluctuations. Granger causality tests reveal a unidirectional relationship running from exchange rate volatility to deposits, suggesting that changes in exchange rates can predict depositor behavior**.**[1]

Tanto (2023) examines the effect of exchange rate, inflation, and interest rate on sharia banking deposits in Indonesia over the period 2013–2022. The results show that the exchange rate has a positive and significant effect on the volume of sharia banking deposits, indicating that deposits increase with currency fluctuations. This finding suggests that exchange rate movements play an important role in influencing depositor behavior in the Indonesian banking system.[2]

Koko Yala Ndongala (2025) examines the impact of exchange rate fluctuations on bank deposits in the Democratic Republic of Congo over the period 1990–2022. The study finds that local currency volatility significantly influences the preference for foreign currency deposits, highlighting the role of exchange rate movements in depositor behavior. The study also emphasizes

[1] Akinyemi. V. A, Ogboada. E & Balai. Y. I, **Exchange Rate Volatility and Customer Deposits in Deposit Money Banks in Nigeria (1991–2021)**, Journal of Economics and Finance, 2022.
[2] Tanto, **The Effect of Exchange Rate, Inflation, and Interest Rate on Islamic Banking Deposits in Indonesia (2013–2022)**, Journal of Islamic Banking and Finance, vol. 11, no. 2, 2023, p: 89-104.

the effect of dollarization, showing that depositor decisions are influenced by the escape from national currency. These findings suggest that exchange rate volatility is a key determinant of bank deposits[1].

### 4 Unemployment Rates

The unemployment rate measures the share of the labor force without work but actively seeking employment. It is a key macroeconomic indicator affecting individuals' capacity to save and deposit funds in banks. The labor force refers to the total number of workers, including both employed and unemployed individuals.

Determining the precise nature of the relationship between unemployment and bank deposits remains a complex challenge. Empirical studies have revealed distinct approaches to analyzing this relationship.

According to SERHAN & BEIN (2017), financial development has a negative impact on unemployment, meaning that progressive development of the financial sector leads to a reduction in the unemployment rate[2].

Nyasha, Odhiambo, & Musakwa,( 2022). also find that there is a negative relationship between unemployment and financial development, represented by bank deposits. The impact of unemployment on bank deposits operates through its direct effect on income. Among the economic consequences associated with unemployment are declining GDP, reduced per capita income, lower productivity, and the emergence of poverty within society. Economists generally agree that lower income forces individuals to allocate the majority of their resources to essential consumption needs, leaving only a minimal portion for saving and, consequently, for investment. Since bank deposits represent a form of saving, and given that unemployed individuals either have no income or receive very low income, their capacity to accumulate savings in any type of bank deposit whether demand deposits, savings deposits, or time deposits is significantly reduced or entirely eliminated.

[1]Ndongala. K. Y, **The Impact of Exchange Rate Fluctuations on Bank Deposits in the Democratic Republic of Congo (1990–2022)**, Journal of African Economic Studies, vol. 18, no. 1, 2025, p: 33-52

[2] Serhan. C & Bein. M**, Financial Development and Unemployment: Evidence from Panel Data Analysis** Journal of Economic Studies, vol. 44, no. 5, 2017, p: 789-805.

Therefore, we conclude that there exists a negative relationship between unemployment and bank deposits.[1]

Ferrouhi (2017) finds a positive relationship between unemployment and bank deposit**s** in Morocco. The results indicate that a 1% increase in the unemployment rate leads to more than an 8% increase in bank deposits. This suggests that during periods of high unemployment, individuals tend to increase their savings as a precautionary response to job insecurity and the risk of prolonged unemployment.[2]

### 5 Money supply

The money supply is generally defined as the total amount of money available in an economy over a given period, which is typically determined by the monetary authorities. It also refers to all forms of means of payment circulating within the economy. In another perspective, money supply represents the liabilities of the monetary system issued by financial institutions, which constitute claims held by economic agents such as households and firms, enabling them to acquire goods and services.

Most economists agree that the development of the financial and monetary system is a crucial condition for promoting economic growth. One of the main outcomes of this development is the increase in savings and the establishment of efficient channels that direct these savings toward investment. In this context, Ronald McKinnonand [3]Edward Shaw emphasized the role of the financial sector in encouraging savings, particularly through reducing the constraints imposed on it. Furthermore, a report by the International Monetary Fund on money, liquidity, credit, and debt identifies the existence of an indirect positive relationship between money supply and bank deposits . An increase in liquid financial assets, such as currency in circulation and negotiable certificates of deposit, contributes to higher bank liquidity and enhances depositor confidence, which ultimately leads to an increase in bank deposits.[4]

Empirically, a comparison of studies examining the relationship between broad money supply and bank deposits reveals significant divergence in their findings ,in fact, the results vary so widely that

[1] Nyasha. S, Odhiambo. N. M & Musakwa. M. T, **Bank Development and Unemployment in Kenya: An Empirical Investigation**, Managing Global Transitions, vol. 20, no. 2, 2022, p: 85-110.
[2] Ferrouhi. E, **Determinants of Bank Deposits in Morocco**, Maghreb Review of Economics and Management, vol. 4, no. 1, 2017, p: 23-26.
[3] McKinnon. R. I, **op. cit,**p56
[4] Shaw. E. S, **Financial Deepening in Economic Development**, Oxford University Press, New York, NY, 1973

it becomes impossible to confirm with certainty the true nature of the relationship between these two variables. Among the studies in this area are:

Based on (2017) study by Akhtar and Waheed in Pakistan, the researchers aimed to determine the impact of money supply on deposits in conventional and Islamic banks. Among their findings: there is a significant negative relationship between money supply and deposits in conventional banks, while a significant positive relationship exists between money supply and deposits in Islamic banks.[1]

In a study conducted by Safiat, Kamal, Mutasem K., and Ibrahim (2019), the researchers aimed to identify the factors affecting deposit volumes in Sudanese commercial banks, with a particular focus on the role of broad money supply. One of their key findings is that broad money supply as a percentage of GDP has a statistically significant negative relationship with long-term time deposits over the long run. The intuitive explanation behind this result is that when the money supply increases, the cost of loanable funds decreases, making borrowing cheaper and encouraging individuals to spend rather than save. Consequently, people become less inclined to lock their money into long-term deposits, leading to a decline in the volume of such deposits in commercial banks[2]

Khoirina et al. (2024) the results show that the money supply has a significant positive impact on bank deposits in both the short and long run. An increase in money supply improves liquidity in the economy, allowing individuals to hold more funds in banks and increasing deposit levels. The effect becomes stronger over time, as higher liquidity supports income growth and savings, leading to greater deposit accumulation. The study also confirms a causal relationship between money supply and bank deposits, indicating that changes in money supply directly influence deposit behavior.[3]

[1] Akhtar. B, Akhter. W & Shahbaz. M**, op. cit.,** p: 296
[2] Safiat. A, Kamal. M. K, Mutasem. K & Ibrahim. M, **Determinants of Deposit Volume in Sudanese Commercial Banks: The Role of Money Supply and Macroeconomic Factors**, International Journal of Economics and Financial Issues, vol. 9, no. 4, 2019, p: 123-132.
[3] Khoirina. et al., **Impact of Inflation, Interest Rates, and Money Supply on Deposit Funds**, Economics Development Analysis Journal, November 2024.

## 6 Interest Rate On Deposits

Interest rate is defined as the amount of return or the percentage obtained by the capital owner in exchange for depositing a certain sum in banks. It also represents the return or percentage paid by the borrower to the bank for borrowing a certain amount.

Another definition states that it is the amount individuals receive as a result of depositing cash sums in commercial banks ,that is the percentage individuals obtain for depositing their savings in commercial banks.[1]

Therefore, the interest rate is the economic variable that reconciles and links lenders and borrowers in financing relationships, in return for the use of borrowed money over a specified period. The lender takes it as income from the loans they grant, because if they kept the money for themselves, they would lose the return that could have been obtained from the lending process. Meanwhile, the borrower pays it as a cost for obtaining those funds.

Credit interest rates are widely regarded as a key determinant of savings behavior within an economy. While empirical findings are not always fully consistent, the general consensus in the literature suggests a positive relationship between deposit interest rates and the level of deposits, as individuals are typically motivated by the objective of maximizing returns on their savings. Furthermore, even Islamic (participatory) banking institutions, which do not operate on an interest-based system, may still be indirectly affected by changes in market interest rates, particularly through potential shifts in depositors' preferences and possible withdrawal of funds when conventional interest rates rise. In line with this theoretical background, several empirical studies have further examined the relationship between interest rates and bank deposits across different banking systems and country contexts:

Siyanbola, Sobande, & Adedeji (2012),study which aimed to measure the impact of interest rate liberalization on bank deposits in Nigeria during the period (1985-2011) using a simple linear regression model, finding a positive relationship between the interest rate and deposit mobilization, indicating that the interest rate has a positive impact on deposit growth.[2]

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[1] Saba. M & Danish. A. S**, Effect of Interest Rate on Bank Deposits: Evidence from Islamic and Non-Islamic Economies**, Future Business Journal, vol. 3, no. 1, 2017, p: 8.

[2] Siyanbola. S. T, Sobande. O. A & Adedeji. A. O, **Interest Rate Liberalization and Bank Deposit Mobilization in Nigeria (1985–2011),** International Journal of Economics and Management Sciences, vol. 1, no. 12, 2012, p: 1-10

Ben Abdallah (2015) examined the impact of interest rate changes on the volume of time deposits in Algerian commercial banks. The study found that the relationship between the average interest rate and time deposits is not statistically significant. The findings indicate that variations in interest rates do not lead to a noticeable increase in time deposits, suggesting a limited influence of interest rates on deposit mobilization in the banks under study.[1]

In another study by Hasan, Samreen, & Atiya (2017), which aimed to measure the impact of the interest rate on deposits in Pakistan during the period (2002-2016) using a simple linear regression model, the study found that deposits are positively affected by the interest rate.[2]

Shifa, Islam, M. Kabir, and Mamunur (2023) examined the dependence of returns on participatory investment deposits on conventional interest rates in a dual banking system. Using a causality model based on the Toda–Yamamoto approach and monthly banking data covering the period from January 2009 to April 2018, the authors found that the returns offered by Malaysian Islamic banks on investment deposits are influenced both by the central bank policy rate and by the interest rates of conventional banks. Moreover, the results confirm the presence of profit-maximizing behavior among Islamic bank customers in Malaysia, as fluctuations in market interest rates encourage them to withdraw their funds and place them in banks offering more attractive returns.[3]

Mezine and Yaacoubi (2024) investigated the effect of fluctuations in the central bank policy rate on the volume of investment deposits in Moroccan Islamic banks. Using monthly data from January 2020 to June 2024. The empirical results reveal strong interactions between conventional and participatory banking systems, where changes in the policy rate significantly influence the volume of investment deposits. The findings also highlight an opportunistic behavior among deposit holders, who tend to reallocate their funds toward conventional deposits offering higher returns when market conditions change. In response, Islamic banks are compelled to adjust their profit-sharing rates to maintain competitiveness. Overall, the study confirms that participatory banking

[1] Ben Abdallah. A, **The Impact of Interest Rate Changes on Time Deposits in Algerian Commercial Banks**, Revue des Sciences Économiques et de Gestion, vol. 15, no. 2, 2015, p: 45-60.

[2] Hasan. M, Samreen. S & Atiya. A, **Impact of Interest Rate on Bank Deposits in Pakistan (2002–2016),** Journal of Applied Economics and Business Research, vol. 7, no. 3, 2017, p: 180-190

[3] Shifa. M, Islam. A, Kabir. H. M & Mamunur. R, **Dependency of Islamic Bank Rates on Conventional Rates in a Dual Banking System: A Trade-off Between Religious and Economic Fundamentals**, International Review of Economics & Finance, 2023, p: 32-33.

institutions are exposed to rate-of-return risk and are not fully insulated from developments in conventional financial markets.[1]

## 7 Financial Crises

Asymmetric information theory provides the following definition of what a financial crisis is:
A financial crisis is a nonlinear disruption to financial markets in which adverse selection and moral hazard problems become much worse, so that financial markets are unable to efficiently efficiently channel funds to those who have the most productive investment opportunities. A financial crisis thus results in the inability of financial markets to function efficiently, which leads to a sharp contraction in economic activity.

One important manifestation of this mechanism is bank panics, which illustrate how asymmetric information can trigger financial instability. As discussed earlier, during a panic, depositors unable to assess the quality of banks' loan portfolios withdraw their funds from the banking system, leading to a contraction in loans and a multiple decline in deposits, which can ultimately result in bank failures. Because depositors cannot distinguish between solvent and insolvent banks, withdrawals affect the entire banking system, amplifying financial instability.

[2]A first strand of research examines the behavior of banks and depositors during financial crises. Early contributions Gatev and Strahan(2006) highlight that banks tend to act as liquidity providers in periods of financial stress, supported by their perceived safety stemming from deposit insurance schemes and implicit government guarantees[3].

More recently, Acharya and Mora (2015) document that the liquidity provision mechanism weakened during the Global Financial Crisis (GFC), before being restored following strong public intervention after the collapse of Lehman Brothers. They also show that banks engaged in aggressive deposit pricing strategies during the early phase of the crisis to attract funding, and that competitive behavior in deposit markets remained active even after large inflows into the banking [4]system. Overall, the evidence suggests that competition for deposits during the GFC was widespread and not limited to financially weak banks.

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[1] Mezine. A & Yaacoubi. A, **Impact of Policy Rate Fluctuations on Investment Accounts Volume in Moroccan Participative Banks**, Journal of Economics, Finance and Management, vol. 4, no. 2, 2025, p: 40-45.
[2] Mishkin. F. S, **Understanding Financial Crises: A Developing Country Perspective**, National Bureau of Economic Research, 1996.
[3] Gatev. E & Strahan. P. E, **Bank's Advantage in Hedging Liquidity Risk: Theory and Evidence from the Commercial Paper Market**, The Journal of Finance, vol. 61, no. 2, 2006, p: 867-892.
[4] Acharya. V. V & Mora. N, **A Crisis of Banks as Liquidity Providers**, The Journal of Finance, no. 1, 2015, p: 43.

Egan et al. (2017) develop a theoretical framework showing that competition for insured deposits can lead to higher deposit rates across the banking sector, as both weak and strong banks adjust their pricing strategies to retain customers. [1]In the same line, Martin et al. (2018) provide empirical evidence that distressed banks are more likely to offer higher deposit rates, particularly to attract insured deposits, which are generally less sensitive to bank-specific risk.[2]

[1] Egan. M, Hortaçsu. A & Matvos. G, **Deposit Competition and Financial Fragility**, National Bureau of Economic Research, 2017

[2] Martin. C, Puri. M & Ufer. A, **Deposit Inflows and Outflows in Failing Banks: The Role of Deposit Insurance**, National Bureau of Economic Research, 2018.

## Section 03 : Sectoral Determinants of Bank Deposits

This section is devoted to the study of sectorial determinants that influence bank deposits**,** particularly within the context of a specific banking system. These factors refer to the main characteristics of the banking industry, including market structure, financial development, financial technology (FinTech), and financial liberalization.

### 1 Market Structure

The market structure of the banking sector refers to the degree of competition, concentration, and organization within the banking industry. In the literature, it is considered a key sectoral determinant of banking outcomes, including deposit mobilization. Its influence on deposits is mainly explained through: the Structure–Conduct–Performance (SCP) hypothesis, the Relative Market Power (RMP) hypothesis.

The Structure–Conduct–Performance (SCP) hypothesis posits that the structure of the banking market determines the conduct of financial institutions, which subsequently influences their performance. In highly concentrated banking markets, a limited number of large banks dominate the industry, leading to reduced competitive pressure.

From a theoretical standpoint, weaker competition enables banks to exercise greater market power in setting deposit interest rates. Consequently, banks may offer lower remuneration on deposits, as the incentive to compete for depositors diminishes. This situation can reduce the attractiveness of bank deposits and weaken deposit mobilization[1].

Therefore, the SCP hypothesis implies that higher market concentration is associated with less favorable conditions for depositors, particularly through lower deposit interest rates and potentially weaker deposit growth.

Empirical evidence based on the Structure–Conduct–Performance (SCP) framework shows that banking market structure influences competition and pricing behavior in deposit markets. In this regard, Ajide and Aderemi (2015), using data from the Nigerian deposit money market (1986–

[1] Berger. A. N, **The Relationship Between Capital and Earnings in Banking**, Journal of Money, Credit and Banking, vol. 27, no. 2, 1995, p: 432-456.

[1]2012), find that the sector is characterized by monopolistic competition, indicating that banks possess some degree of market power in setting deposit prices

In the same line of evidence, studies focusing on more concentrated banking systems also confirm the importance of market structure. Using data from Chinese commercial banks, Zhou (2025) finds that higher market concentration is positively associated with bank pricing power. This increased market power reduces competitive pressure in the deposit market, resulting in less attractive deposit conditions and weaker deposit mobilization.[2]

Relative Market Power (RMP) in the banking sector refers to a bank's ability to influence deposit pricing due to its market dominance or customer loyalty, which directly affects the behavior of bank deposits. When a bank has high RMP, it faces weaker competitive pressure, allowing it to offer lower deposit interest rates without significantly losing customers, as depositors tend to exhibit switching costs and inertia. As a result, deposits become less sensitive to changes in interest rates, leading to a more stable but less responsive funding base. This also implies that banks with stronger market power can retain a larger share of interest margins, while the pass-through of monetary policy to deposit rates is reduced. Consequently, RMP strengthens deposit stability but weakens competition and slows the transmission of monetary policy to households and firms through the banking system[3].

## 2 Financial Development

Financial development refers to the process of expansion, deepening, and improvement of a financial system, with particular emphasis on the banking sector and capital markets. It reflects the efficiency with which the financial system mobilizes, pools, and allocates savings, while also facilitating financial transactions and reducing information and transaction costs.

[1] Ajide. F. M & Aderemi. A. A, **Market Power of Nigerian Deposit Money Market: Evidence from Bresnahan-Lau's Approach**, Journal of Economics, Scientific & Academic Publishing, 2015

[2] Zhou. Z, Yan. S & Wan. X, **A Research on the Impact of Market Structure on Deposit and Loan Pricing Using Financial Technology Innovation Pricing Model**, International Conference on Implementing Generative AI into Telecommunication and Digital Innovation (GAITDI), China, 2025.

[3] Carletti. E, Leonello. A & Marquez. R, **Market Power in Banking**, Annual Review of Financial Economics, 2024, p: 233-251.

According to Ross Levine (2005), financial development strengthens financial intermediation by improving the efficiency of resource allocation and by facilitating the transformation of savings into investment. In the case of bank deposits, this means that a more developed financial system can both increase the volume of deposits and influence their structure, depending on the degree of competition from capital markets and the availability of alternative investment opportunities.

## 2.1 Impact of Financial Development

Financial development can influence bank deposits through several theoretical channels, which are not always uniform across contexts:

The complementarity effect suggests that financial development can increase bank deposits by strengthening financial inclusion, improving access to banking services, and enhancing trust in financial institutions. As financial systems become more developed, individuals and firms are more likely to formalize their savings within the banking sector, leading to higher levels of deposit mobilization. In this context, financial development and bank deposits evolve in a complementary relationship rather than a substitutive one.

This view is supported by Demirgüç-Kunt and Huizinga (2010), who show that financial development does not eliminate the role of bank deposits but instead allows banks to diversify their funding sources while maintaining deposits as a stable core liability. Their findings imply that banks and financial markets can expand simultaneously, reinforcing the idea that financial development can strengthen both market-based finance and traditional deposit mobilization at the same time[1]

In contrast, financial development may also reduce bank deposits in certain contexts through a substitution effect. As capital markets and alternative financial instruments develop, households and firms may reallocate their savings away from traditional bank deposits toward more profitable financial assets such as bonds, equities, and other market-based instruments, thereby weakening the role of banks as the main repository of savings. This view is supported by Srivastava et al. (2025), who provide empirical evidence that financial market development is negatively associated

[1] Demirgüç-Kunt. A & Huizinga. H, **Bank Activity and Funding Strategies: The Role of Deposits and Wholesale Funding**, Journal of Financial Intermediation, no. 2, 2010, p: 202-224.

[1]with time deposits, indicating that increased financial market activity intensifies competition between banks and capital markets for household savings, particularly long-term deposits.

## 3 Financial technology (FinTech)

Financial technology which represents the integration of finance and technology, plays an increasingly important role in transforming financial services through innovative business models and emerging technologies. Its scope extends beyond mere financial innovation to include advanced digital solutions that enable customers to manage their finances more efficiently. The rapid advancement of technology, combined with growing customer demand for secure and user-friendly banking experiences, has accelerated the adoption of FinTech by banks and financial institutions .[2]

Several empirical studies have examined the relationship between FinTech and financial behavior, particularly savings and bank deposits. Azimova, Mollaahmetoglu (2017) analyzed the impact of financial innovation on financial outcomes using panel data from 20 middle- and high-income countries over the period 2005–2014 and found that financial innovation significantly increases both domestic savings and overall financial resources, which supports the idea of stronger financial deepening and higher deposit mobilization. In the same line[4], Hussein (2022) found, based on a sample of 224 individuals in Egypt, a statistically significant positive relationship between FinTech adoption and both savings development and the growth of digital deposits.[5] Moreover, Löwgren (2023) highlighted that FinTech application design can positively shape user behavior by increasing motivation and improving saving practices, which contributes to higher deposit formation. Overall, these studies suggest that FinTech plays a key role not only in encouraging

[1] Srivastava. N. et al., **Financial Market Development and Bank Deposits**, Journal of International Financial Markets, Institutions & Money, 2025, p: 102.
[2] Josyula. H, **The Role of FinTech in Shaping the Future of Banking Services**, The International Journal of Interdisciplinary Organizational Studies, no. 1, 2021, p: 187-201.

[4] Azimova. T & Mollaahmetoglu. E, **Innovation in Financial Markets and Its Impact on Savings**, Journal of Business, Economics and Finance, no. 2, 2017, p: 147-154.
[5] Hussein. I. E. A. A, **Financial Technology and Its Role in Developing Savings (2008–2018)**, PhD thesis, Faculty of Commerce, Ain Shams University, Cairo, 2022.

savings but also in enhancing bank deposit mobilization through improved access, digital convenience, and financial inclusion.[1]

Finally, Bougouffa and Gheribi (2024) found that financial technology has a positive and statistically significant effect on savings mobilization at Banque Nationale d'Algérie. Their results show that digital banking services, digital payments and transfers, digital insurance, and digital investment positively contribute to mobilizing savings, with 42.5% of the variation in savings mobilization explained by fintech usage[2].

## 4 Banking Competition

Bank competition is the degree of rivalry among banks in a market. It is the process by which banks strive to win customers by offering better prices (lower lending rates and higher deposit rates), improving service quality, and fostering innovation.

A key contribution to the banking competition literature is provided by Ahn and Brei (2023), who study deposit market competition among U.S. banks using branch-level data during the Global Financial Crisis (2007–2009). Their results show that banks react more strongly to competitors' deposit rate changes during the crisis than in normal times, indicating intensified competitive pressure in deposit markets.The study further shows that this competitive behavior persists even in the presence of large deposit inflows and is widespread across the banking sector, not limited to weakly capitalized banks. This suggests that deposit competition operates as a systemic feature of banking markets driven by strategic pricing interactions. Finally, the authors find that deposit spread adjustments are associated with higher deposit growth, particularly for well-capitalized banks, highlighting heterogeneous effects of competition across institutions.[3]

## 5 Financial liberalization

Financial liberalization, also known as deregulation, is an economic policy introduced in the 1970s by McKinnon (1973) and Shaw (1973) as a response to the limitations of financial repression that prevailed from the 1950s to the 1970s. During this period, governments heavily controlled banking

[1] Löwgren. A, **Fintech: A More Motivating Way of Saving Money? Persuasive Design in Fintech**, Master's thesis, Faculty of Social Sciences, Uppsala University, 2023

[2] Bougouffa. L & Gheribi. A, **The Impact of Using Financial Technology on Saving Mobilization: A Field Study on Customers of Banque Nationale d'Algérie (BNA)**, Banque Nationale d'Algérie, 2024.

[3] Ahn. J. H & Brei. M, **Deposit Market Competition During the Great Financial Crisis**, NEOMA Business School and University of Lille, 2023.

systems through interest rate ceilings, restrictions on banking activities, and credit allocation policies aimed at achieving specific economic objectives. However, these interventions have been widely criticized for reducing the efficiency of financial systems and hindering economic growth by distorting credit allocation and limiting financial sector development.

Existing empirical evidence, particularly studies on savings and financial liberalization in Algeria, highlights a significant association between financial reforms and household financial behavior. In this context, Boumghar (2007) finds a statistically significant negative relationship between financial liberalization and household savings in Algeria. The estimated coefficient of the financial liberalization index (LF) is -10.31, significant at the 10% level, indicating that financial liberalization reduced household savings over the period 1991–2002. This result suggests that the credit channel, through easier access to consumer credit, dominated, leading households to favor current consumption over saving[1]. Similarly, Nair (2006) reports that financial sector liberalization has a negative impact on household savings in India, mainly through the credit channel, where improved credit availability encourages present consumption rather than saving[2].

[1] Boumghar. M. Y, **Financial Liberalization and Household Savings: What Effects?**, Cahiers du CREAD, 2007, p: 171-198.
[2] Nair. L. R, **Financial Sector Liberalization and Household Savings in India**, Reserve Bank of India Doctoral Scholar, Centre for Development Studies, India, 2006

## Conclusion

This chapter has shown that the determinants of bank deposits cannot be reduced to a single explanatory factor, but rather result from the interaction between economic conditions, banking behavior, and financial system characteristics. The literature reveals that deposit behavior is shaped not only by macroeconomic stability and banking fundamentals, but also by broader structural changes in the financial system.

What emerges from this review is that the effects of these determinants are often ambiguous and vary according to institutional settings and levels of financial development. This lack of uniformity in results suggests that bank deposit dynamics are highly sensitive to contextual factors, particularly financial structure, competition, and technological change.

Therefore, understanding deposit behavior requires moving beyond isolated effects and adopting an integrated approach that considers the simultaneous influence of macroeconomic, bank-specific, and sectoral force

# CHAPTER 03 :THE DETERMINANTS OF BANK DEPOSITS IN ALGERIAN COMMERCIAL BANKS: AN EMPIRICAL STUDY

## Introduction

Research on the determinants of bank deposits represents a fundamental area of inquiry in banking and financial economics. Indeed, understanding the factors that drive deposit mobilization is essential for assessing the stability, performance, and sustainability of any banking institution, particularly in developing economies where the banking sector plays a central role in financing economic activity.

In this chapter, and following the presentation of the theoretical foundations established in the preceding chapters, we undertake the empirical component of this study, aimed at identifying and measuring the impact of each determinant on the deposit ratio of Algerian banks.

First, we provide an overview of the Algerian banking sector, highlighting its historical evolution, regulatory framework, structural composition . Subsequently, we present the methodological approach adopted to estimate our model using panel data regression techniques. Finally, we expose the estimation results and provide a detailed interpretation of the findings.

This chapter is therefore structured around three main sections:

- **Section 01:** The Algerian Banking Sector.
- **Section 02:** Methodological Framework.
- **Section 03:** Model Estimation and Interpretation of Results.

## Section 01 : The Algerian Banking Sector .

The Algerian banking sector has undergone numerous transformations throughout its history. Upon independence, Algeria inherited a well-developed banking system from the French colonial administration. However, this inherited system proved inadequate in supporting the development programs envisioned by the Algerian state, as it was neither designed nor oriented toward the financing of national economic objectives. Consequently, the state assumed direct control over the banking sector in order to ensure the necessary financing of investment programs, with particular emphasis on the development of capital-intensive industries requiring substantial and sustained financial resources.

### 1 Historical Overview of the Evolution of the Algerian Banking Sector

The Algerian banking and financial sector was built through two main stages: the establishment of a national banking system following independence, followed by its gradual liberalization toward both domestic and foreign private investors.

### 1.1 A National Banking System

As early as December 1962, Algeria established its national currency, the Algerian Dinar, and created a Central Bank tasked with maintaining favorable conditions for credit, monetary policy, and foreign exchange in support of national economic development. The primary objective was to assert monetary sovereignty over a country that had just gained independence after more than 132 years of French colonial rule.

In 1963, the Algerian Development Fund (CAD) was established as a financing institution to support development efforts, reflecting the government's determination to break away from the colonial economic model by adopting a socialist-oriented development strategy centered on heavy industries.

In 1964, the National Savings and Provident Fund (CNEP) was created to manage the collection of popular savings and redistribute them in the form of housing loans.[1]

[1] Benhalima. A, **The Algerian Banking System: Texts and Reality**, Dahlab Editions, 1994, p: 13.

Between 1966 and 1968, the nationalization of the banking sector provided the Algerian state with a significant development tool that had previously been dominated by foreign capital. This nationalization was driven both by ideological motivations and by the refusal of foreign banks to finance the post-independence Algerian economy. As a result, three public commercial banks were established: the National Bank of Algeria (BNA), the Algerian Popular Credit (CPA), and the Bank of External Algeria (BEA).

In 1970, with the introduction of the first four-year plan (1970–1973) and the adoption of centralized planning as the national economic model, credit distribution was systematically planned as an instrument for mobilizing and allocating resources toward productive investments in the public sector.

During this period, the Algerian banking system became exclusively public and was organized by sector of activity, with national companies required to concentrate all their banking operations within a single designated bank.[1]

### 1.2 The Privatization of the Sector:

In 1988, the Algerian state undertook a major restructuring of large public enterprises through the enactment of Law No. 88-01 of January 12, 1988, which reorganized public economic enterprises (EPE) as joint-stock or limited liability companies. Banks were equally affected by these reforms under Law No. 88-06**,** which subjected them to commercial law. Two new banks were created during this period: the Bank of Agriculture and Rural Development (BADR**)** and the Local Development Bank (BDL), resulting from the restructuring of the BNA and the CPA respectively.

This liberalization drive was further reinforced by the promulgation of Law No. 90-10 of April **14,** 1990 on money and credit, which opened the national banking sector to both domestic and foreign[2]

[1] Ibid,p14
[2] Naas. A**, The Algerian Banking System: From Decolonization to the Market Economy**, Inas Editions, Paris, 2003, p: 75.

private investors, leading to the establishment of several international banks and financial institutions in Algeria.

### 1.3 The Establishment of Partnerships:

The Supplementary Finance Law of 2009 paved the way for partnerships in the Algerian banking sector by introducing the 51/49 rule as the sole modality for any new foreign investor seeking to establish a presence in Algeria. This provision was further consolidated through the Ordinance ON Money and Credit of 2003, as amended and supplemented in 2010 by Ordinance No. 10-04 of August 26, 2010.[1]

## 2 The Regulatory Framework of the Algerian Banking Sector

The primary function of a bank is financial intermediation, and in order for this activity to be conducted in a sound and efficient manner, a comprehensive regulatory framework has been progressively established in Algeria, aimed at consolidating the conditions governing banking operations, financial reporting, and prudential supervision in accordance with increasingly rigorous international standards and principles.

### 2.1 The Law of August 19, 1986 on the Banking and Credit Regime

Prior to this law, the Algerian banking sector was governed only by scattered legislative texts, including the law establishing the Central Bank of Algeria (1962) and the finance laws of 1970 and 1971. The collapse of the socialist regime, combined with the oil shock of 1986 and the subsequent rise in external debt, rendered the administrative management of the national economy unsustainable. Consequently, a banking law was enacted in August 1986 with the primary objective of defining the regime governing banks and credit, as well as establishing a new institutional and functional framework for banking activity.[2]

[1] Arroudj. H, **Reform and Modernization of the Algerian Banking System During the Period (1990–2010)**, Thesis, University of Oran 2, 2015.
[2] Aboura. A & Chahidi. M, **The Algerian Banking System: Historical Evolution, Sector Liberalization and Modernization Challenges**, 2017, p: 5.

### 2.2 The Law of January 12, 1988

From 1988 onward, the Algerian authorities undertook a series of reforms aimed at granting greater managerial autonomy to public enterprises, reflecting the transition from a centrally planned economy toward a more liberalized market economy. Through this law, the Algerian state delegated its prerogatives to participation funds established as joint-stock companies, responsible for managing a new category of enterprises known as public economic enterprises (EPE), of which banking institutions formed an integral part. Banks were henceforth defined as commercial legal entities endowed with greater autonomy in the management of their activities.

### 2.3 Law No. 90-10 of April 14, 1990 on Money and Credit

Following the oil shock of 1986, the shortcomings of the Algerian banking system became apparent, notably bureaucratic delays caused by decision-making centralization, a lack of technical expertise, and a financing structure predominantly oriented toward public enterprises. Law No. 90-10 was enacted to remedy these deficiencies and modernize the national banking sector. Its principal objectives were as follows:

- Granting full independence to the Bank of Algeria from government and Treasury oversight
- Liberalizing banking conditions and interest rate determination
- Opening the banking sector to national and foreign private capital
- Separating monetary and credit authority from public enterprise management
- Establishing the Monetary and Credit Council (MCC) as an independent regulatory authority
- Introducing the bank accreditation system with emphasis on shareholder quality

This law also renamed the institution from the Central Bank of Algeria to the Bank of Algeria, eflecting its newly acquired independence.[1]

### 2.4. Ordinance No. 01-01 of February 27, 2001

[1] Ibid,p5.

This ordinance amended and supplemented Law No. 90-10 by restructuring the Monetary and Credit Council into two distinct organs: a Board of Directors responsible for the administration of the Bank of Algeria, and a Monetary and Credit Council serving as the monetary authority[1].

### 2.4 Ordinance No. 03-11 of August 26, 2003

The year 2003 was marked by the bankruptcy of two private banks, namely El Khalifa Bank and the Banque pour le Commerce et l'Industrie d'Algérie (BCIA), a financial scandal that prompted the authorities to undertake a comprehensive reform of the monetary and credit law. Three principal objectives guided this new legislative text: strengthening the Bank of Algeria's capacity to fulfill its missions, enhancing collaboration between the Bank of Algeria and the government on financial matters, and improving the protection of financial actors and public savings. Accordingly, the liberalization of the banking sector was maintained while supervisory and control requirements were significantly reinforced, and new conditions for the establishment of banking institutions were introduced.[2]

### 2.5 Ordinance No. 10-04 of August 26, 2010

This ordinance amended and complemented Ordinance No. 03-11 by broadening the missions of the Bank of Algeria, updating the powers of the Monetary and Credit Council, and introducing new ancillary operations for banks and financial institutions. Among its key provisions, the ordinance reinforced the obligation for banks to implement internal control and compliance systems, and introduced important consumer protection measures, notably Article 119bis, which grants any individual refused a deposit account the right to request the Bank of Algeria to designate a bank for this purpose, and Article 119ter, which requires banks to maintain greater transparency[3]

in their credit operations and to keep clients informed of their banking conditions. Furthermore, the 2009 supplementary finance law introduced the obligation for foreign investors in the banking

[1] People's Democratic Republic of Algeria, **Ordinance No. 01-01 of February 27, 2001 Amending and Supplementing Law No. 90-10 of April 14, 1990 on Money and Credit**, Official Gazette of the Algerian Republic, no. 14, February 28, 2001.
[2] People's Democratic Republic of Algeria, **Ordinance No. 03-11 of August 26, 2003 on Money and Credit**, Official Gazette of the Algerian Republic, no. 52, August 27, 2003
[3] People's Democratic Republic of Algeria, **Ordinance No. 10-04 of August 26, 2010 Amending and Supplementing Ordinance No. 03-11 of August 26, 2003 on Money and Credit**, Official Gazette of the Algerian Republic, no. 50, September 1, 2010

sector to observe a minimum 51% national resident shareholding rule within any partnership arrangement.

### 2.6 Law No. 17-10 of October 11, 2017

This law complemented Ordinance No. 03-11 by introducing a temporary recourse to unconventional financing mechanisms in order to secure additional funding sources for the national economy. Under this provision, the Bank of Algeria was authorized to directly purchase treasury bonds issued by the Treasury for a period of five years on an exceptional basis, with the aim of covering the financing needs of national institutions[1].

### 2.7 Regulation No. 2018-02 of November 4, 2018 on Participative Finance

This regulation introduced participative finance operations into the Algerian banking framework, covering the reception of funds, placement, financing, and investment operations that do not give rise to the payment or receipt of interest, as well as various categories of associated products Regulation No. 2020-02 of March 15, 2020 on Islamic Finance

This regulation abrogated the 2018 regulation and introduced several important innovations. Islamic finance was formally distinguished from participative finance, and all financial institutions practicing Islamic finance were required to establish a Sharia supervisory committee. Furthermore, banks offering Islamic finance products were obligated to create a dedicated Islamic finance counter within each of their branches.[2]

### 2.8 Law No. 23-09 of June 21, 2023 on Money and Banking

Law No. 23-09 represents a major reform of the Algerian monetary and banking framework. It covers a wide range of issues, from the definition of currency to penalties for legal violations. Its key provisions include:

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[1] People's Democratic Republic of Algeria, **Law No. 17-10 of October 11, 2017 Supplementing Ordinance No. 03-11 of August 26, 2003 on Money and Credit**, Article 1, Official Gazette of the Algerian Republic, no. 57, October 11, 2017

[2] Bank of Algeria, **Regulation No. 2018-02 of November 4, 2018 on Participative Finance Operations**, Articles 1 and 2, Official Gazette of the Algerian Republic, no. 68, November 2018.

- Currency**:** Confirms the Algerian Dinar as the official currency and introduces a new digital form, the Digital Algerian Dinar.
- Bank of Algeria**:** Reinforces its independence, strengthens its monetary policy instruments, and expands its role in financial stability.
- Monetary and Banking Council: Established as the supreme monetary authority, responsible for conducting monetary policy and regulating the banking sector.
- Banking Organization**:** Defines banking operations, regulates Islamic finance, and sets conditions for bank licensing and governance.
- Banking Supervision**:** Strengthens the Banking Commission's control over banks and financial institutions, and imposes internal control and risk management requirements.
- Consumer Protection**:** Improves transparency in banking operations and safeguards public savings.[1]

## 3 The Structure of the Algerian Banking Sector

The Algerian banking system is composed of a set of licensed banks and financial institutions operating under the supervision of the central monetary authority. These institutions are mainly headquartered in Algiers and include commercial banks as well as specialized financial entities, each playing a distinct role in the intermediation and financing of the economy.

### 3.1 The Bank of Algeria

The Central Bank of Algeria was established by Law No. 62-144, adopted by the Constituent Assembly on December 13, 1962. Several adjustments were introduced during the 1970s and early 1980s, initiating the reform process of the national financial system. However, it was the promulgation of the Law on Money and Credit of 1990 that granted the Bank of Algeria full independence from government oversight.

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[1]People's Democratic Republic of Algeria**, Law No. 23-09 of June 21, 2023 on Money and Banking**, Official Gazette of the Algerian Republic, no. 45, June 25, 2023**.**

**a. Organization of the Bank of Algeria**

The direction, administration, and supervision of the Bank are ensured respectively by the Governor, the Board of Directors chaired by the Governor, and two auditors. The Board of Directors is composed of three deputy governors and three senior officials with proven expertise in economic and financial matters. The Governor and deputy governors are appointed by presidential decree, while other board members are designated by executive decree, and auditors are appointed by presidential decree upon recommendation of the Minister of Finance.

**b. Role and Missions of the Bank of Algeria**

In accordance with Article 2 of Ordinance No. 10-04 of 2010, amending Article 35 of the 2003 Ordinance, the Bank of Algeria is mandated to ensure price stability as the primary objective of monetary policy, and to create and maintain the most favorable conditions in the areas of money, credit, and foreign exchange for sustained economic development, while ensuring monetary and financial stability. To this end, it is responsible for regulating monetary circulation, directing and

controlling credit distribution, managing foreign financial commitments, regulating the foreign exchange market, and ensuring the security and soundness of the banking system.

Furthermore, the Bank of Algeria is entrusted with establishing the balance of payments and presenting Algeria's external financial position. All banks, financial institutions[1], and financial administrations are required to provide the Bank of Algeria with any statistics and information it deems necessary. The Bank also manages three centralized registers:

- A corporate risk register
- A household risk register
- A non-payment register

**c. The Monetary and Credit Council (MCC)**

Under Article 62 of Ordinance No. 03-11 of August 26, 2003, the Monetary and Credit Council is vested with authority as a monetary authority in several domains, including the issuance of

[1] Naas. A & Belaouni. D. F, **Algerian Banking System: Organizational Reading**, University of Oran 2, Algeria, 2023, p: 134

currency, the definition and conduct of monetary policy, the management of foreign exchange reserves, the securing of payment systems, the granting and withdrawal of bank accreditations, and the establishment of accounting standards applicable to banks and financial institutions. Article 6 of Ordinance No. 10-04 of August 26, 2010 further extended the MCC's powers to cover new savings and credit products, payment system standards and security, and rules of conduct and professional ethics applicable to banks and financial institutions[1].

## 3.2 Banks and Financial Institutions

The Algerian banking environment currently comprises two types of organizations: banks and financial institutions. Under Article 71 of Ordinance No. 03-11 of 2003, financial institutions are prohibited from receiving public funds or managing payment instruments. Only banks are authorized to perform such operations on a professional basis under Article 70 of the same ordinance. Furthermore, Regulation No. 08-04 of December 23, 2008 stipulates that banks must

hold a minimum paid-up capital of 10 billion Algerian Dinars (DZD), while financial institutions must hold a minimum of 3.5 billion DZD.

### a. Authorized Banking Operations[2]

Under Articles 66 to 69 of the ordinance, banks are authorized to receive public deposits, extend credit, and provide and manage payment instruments. Under Article 72, banks and financial institutions are additionally authorized to conduct foreign exchange operations, transactions in gold and precious metals, securities management, financial engineering and advisory services, and other services facilitating business creation and development.

### b. Public Banks

- **BNA:** The first national bank created in June 1966, it became a joint-stock company in 1988 and obtained its banking accreditation in 1995. Since 1982, it has specialized in financing the national industrial and economic sector.

[1] Ibid., p: 135
[2] Aboura. A & Chahidi. M, **op. cit.**, p: 6

- **BEA:** Established in 1967 as a national company, it became the bank of major national industrial enterprises from 1970, facilitating international commercial and financial relations. It became a joint-stock company in 1989 and was officially accredited in 2002.
- **CPA:** Created in 1966, it became a joint-stock company in 1988 and received its banking accreditation in 1997. Its mission is oriented toward financing the construction, health, commerce, tourism, and SME sectors.
- **BADR:** Created in 1982 from the restructuring of the BNA, its principal activity is the financing of the agriculture, fisheries, and rural development sectors.
- **BDL:** Created in 1985 from the restructuring of the CPA, its mission encompasses the financing of SMEs, commercial activities, liberal professions, and households.
- **CNEP:** Created in 1964, its primary mission was the collection of popular savings. It became a bank in 1997 and specializes in housing credit and real estate promotion. It is notably present in the postal network for individual savings collection.
- **BNH:** Created in December 2022 following the transformation of the Caisse Nationale du Logement (CNL), it was established by Bank of Algeria Decision No. 22-03 of 29 December 2022 granting banking approval. Its principal activity is the financing of the housing and real estate sector, including the support of public housing programs, mortgage lending to individuals, and credit provision to construction and property development enterprises.[1]

**c. Private Banks**

- **El Baraka BANK (1991):** The first Islamic bank established in Algeria, jointly owned by the Saudi Dallah El Baraka Group and BADR. Its activities are governed by Sharia and include Islamic financing products such as Mourabaha, Moucharaka, El Ijar, El Moudharaba, and El Istisn'a.
- **Citibank Algeria (1992):** Officially accredited since 1992, its activities are concentrated on foreign investment financing, treasury management, deposits, and online banking.

[1] A. Aboura and M. Chahidi **Op.Cit**,p7

- **Arab Banking Corporation Algeria (1998):** A subsidiary of Arab Banking Corporation Bahrain, it offers financing solutions to large enterprises, SMEs, individual entrepreneurs, and retail clients.
- **Natixis Algeria (2000):** The first fully foreign-owned French bank in Algeria, it is a subsidiary of the BPCE Group and finances large enterprises, SMEs, and retail clients.
- **Société Générale Algérie SGA (2000):** A wholly owned subsidiary of Société Générale France, it offers financing to enterprises across all sectors as well as retail credit and banking services.
- **Arab Bank PLC Algeria (2001):** Headquartered in Amman, it finances enterprises across various sectors as well as individual clients.
- **BNP Paribas El Djazaïr (2002):** A wholly owned subsidiary of BNP Paribas France, it is authorized to perform all recognized banking operations.
- **Trust Bank Algeria (2002):** A member of the Nest Investment Holding Group based in Cyprus, it operates through five subsidiaries in Algeria including one in the insurance sector.
- **Housing Bank for Trade and Finance Algeria (2003):** A subsidiary of the Housing Bank for Trade and Finance Jordan (85%) and Libyan Arab Foreign Investment Holding Company Algeria (15%), it offers financing solutions to both corporate and retail markets.
- **Gulf Bank Algeria AGB (2004):** A member of the Kuwait Projects Company, it offers both classical and alternative finance banking products.
- **HSBC Algeria (2008):** Accredited as a bank branch, it offers banking services to both enterprises and retail clients.
- **Al Salam Bank Algeria (2008):** Specializes in Islamic finance products including real estate investment and enterprise financing.[1]
- **Fransabank El-Djazaïr (2010):** A bank with predominantly Lebanese capital, it serves SMEs and large national and international groups, offering a full range of commercial banking products and services.

**d. Financial Institutions**

[1] A. Aboura and M. Chahidi **Op.Cit**,p 8

Financial institutions in Algeria specialize primarily in leasing and housing finance and include the following:

- **SRH (1997):** Specializes in mortgage refinancing and the promotion of medium and long-term housing finance.
- **Sofinance (2001):** Offers leasing, capital participation, and financial advisory services, primarily targeting the construction and transport sectors.
- **Arab Leasing Corporation ALC (2001):** The first private leasing company in Algeria, serving enterprises in construction, transport, services, and healthcare.
- **Maghreb Leasing Algeria MLA (2006):** Created by Tunisie Leasing and the Amen Group, it specializes in equipment, real estate, and vehicle leasing across multiple sectors.
- **Cetelem Algeria (2006):** A subsidiary of BNP Paribas, specializing in consumer credit.
- **CNMA:** A mutual agricultural institution offering financial protection services to the rural population and agricultural investors.
- **Société Nationale de Leasing SNL (2010):** Created by BNA and BDL, it specializes in equipment leasing for SMEs and liberal professions.
- **Ijar Leasing Algeria**
- **El Djazaïr Ijar**[1]

### 3.3. The Association of Banks and Financial Institutions (ABEF)

The ABEF was established to serve two main objectives: representing the collective interests of its members before public authorities, and informing and raising awareness among its members and the general public. Its missions include organizing the banking profession, improving banking and credit techniques, stimulating competition within the sector, and introducing new technologies to modernize banking operations. Any amendments to the ABEF's statutes are subject to approval by the Monetary and Credit Council.[2]

[1] A. Aboura and M. Chahidi **Op.Cit**,p 9

[2] Benmouhoub. S, **The Determinants of Bank Liquidity in Algeria**, Master's thesis, Higher School of Commerce, Koléa, 2022, p: 90.

### 3.3 The Society for the Automation of Interbank Transactions and Electronic anking (SATIM)

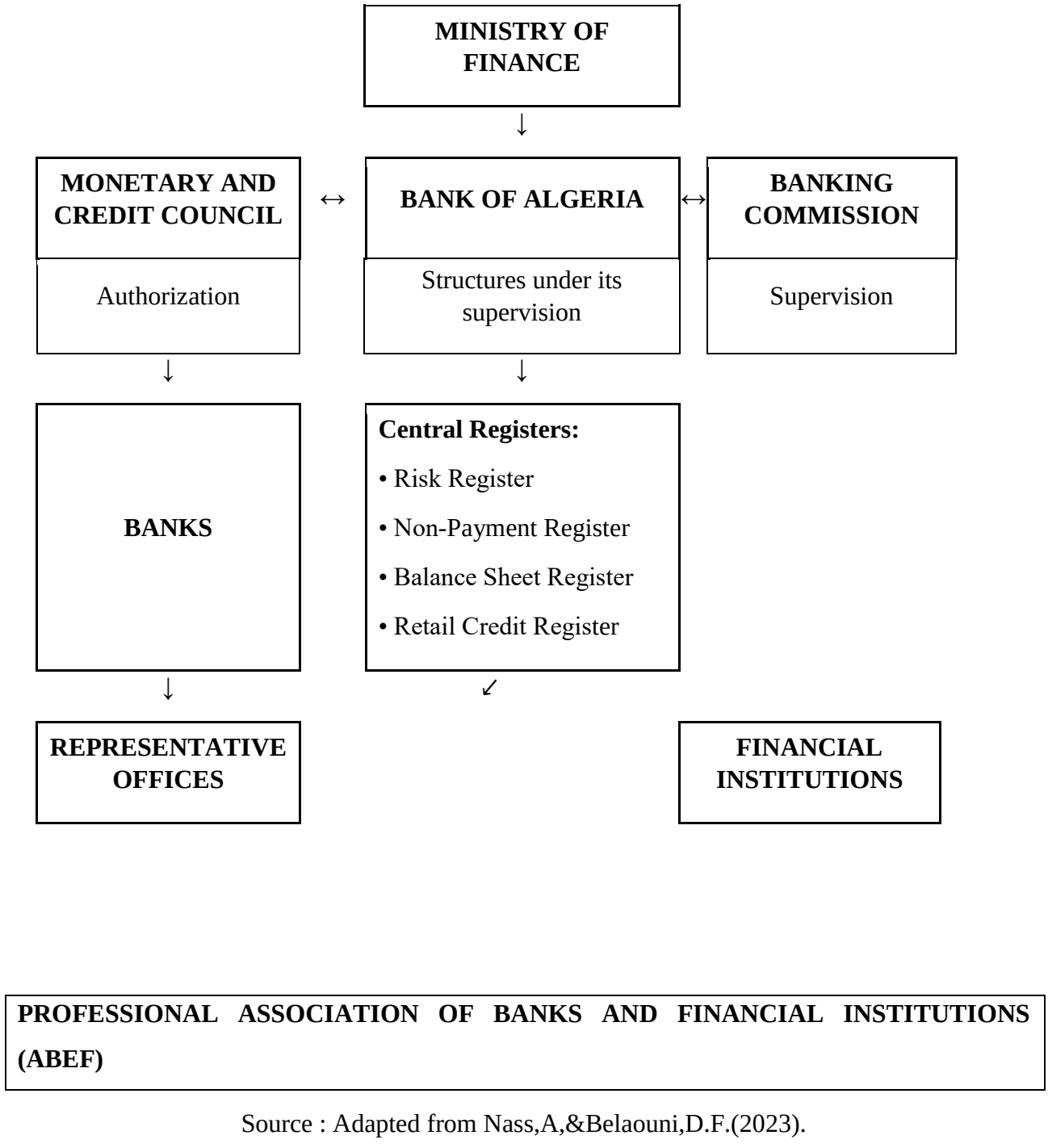
SATIM was created in 1995 as a subsidiary of eight Algerian banks, namely BADR, BDL, BEA, BNA, CNEP, CPA, CNMA, and Al Baraka Bank. Today, it brings together 17 members in its interbank electronic network, including 16 banks and Algeria Post. Its missions include developing electronic payment methods, managing the technical platform ensuring interoperability among network participants, participating in the development of electronic payment regulations, and supporting banks in the implementation of electronic banking products[1]

### 3.5. The Economic Interest Group for Electronic Banking (GIE)

Established following the extraordinary general assembly of the ABEF on June 2, 2014, the GI was created to guide the strategic development of electronic banking in Algeria through the generalization of modern payment instruments such as interbank payment cards and e-payment solutions, while regulating the electronic banking sector.[2]

[1] Ibid,p91
[2] Ibid, p : 92

**Figure 6 : Structure of the Algerian Banking System**




Source : Adapted from Nass,A,&Belaouni,D.F.(2023).

## Section 02 : Descriptive Analysis and Methodological Framework

This section presents the sample under study, outlines the accounting and financial data sources drawn from a panel of 19 Algerian banks, and provides a descriptive overview of the variables incorporated into the model.

### 1 Data Description

The data utilized in this study encompasses 19 banks operating in Algeria, comprising 6 state-owned banks and 13 foreign private banks, over the period spanning from 2010 to 2023.

### 1.1 Sample Presentation

The sample for this empirical study consists of 19 banks conducting their operations in Algeria. These institutions are briefly presented in the table below:

Table 1 : Banks Samples

| Abbreviation | BANK | Ownership |
|---|---|---|
| BEA | Banque Extérieure d'Algérie | Public |
| BNA | Banque Nationale d'Algérie | Public |
| BADAR | Banque de l'Agriculture et de Développement Rural | Public |
| BDL | Banque de Développement locale | Public |
| CPA | Crédit Populaire d'Algérie | Public |
| CNEP | Caisse Nationale d'Epargne et de Prévoyance | Public |
| SGA | Société Générale Algérie | Private |
| ABC | Arab Banking Corporation | Private |
| AGB | Gulf Bank Algérie | Private |
| TRUST | Trust bankAlgeria | Private |
| NATIXIS | NATIXIS d'Algérie | Private |
| CITEBANK | Citibank N.A Alegria | Private |
| FRANSBANK | Fransbank AL-Djazair | Private |
| HSBC | H.S.B.C Algérie | Private |
| AL BARAKA | Banque AL Baraka Algérie | Private |
| AL SALAM | Al Salam Algérie | Private |
| BNP | BNP Paribas-EL djazair | Private |
| HOUSING | HOUSING Bank | Private |
| AB PLC | Arab Bank PLC Algérie | Private |

Source: Compiled by the student.

### 1.2 Data Collection

The financial and accounting data pertaining to all banks operating in Algeria were gathered from two primary sources: the National Centre of Commercial Registry (CNRC) and the official websites of the respective banking institutions, covering the period from 2010 to 2023. These data served as the basis for computing the various ratios employed as dependent variables and selected control variables in the model.

## 2 Presentation of the Model Variables

This section outlines all the explanatory and dependent variables selected for the statistical analysis, along with their respective measurement methods.

### 2.1 Dependent Variable:

The dependent variable in this study is DEPOSITS. In our model, the following measure was adopted:

#### 2.1.1 The Deposit-to-Asset Ratio (DAR)

The Deposit-to-Asset Ratio (DAR) measures the volume of customer deposits relative to total assets, reflecting the extent to which banks rely on deposit-based funding as their primary source of financing.

$$DAR = (Total\ Deposits / Total\ Assets) \times 100$$

#### 2.1.2 Explanatory Variables:

To better explain the determinants of bank deposits in Algeria, this study draws on prior empirical research by incorporating both bank-specific internal determinants and macroeconomic external determinants.

Regarding the internal explanatory variables, the model includes bank size (BANKSIZE), the capital adequacy ratio (CAR), operational efficiency (EF), the loan-to-deposit ratio (LDR), and return on equity (ROE). These variables were selected based on their significance in the banking literature and their availability in the dataset. However, their selection was also constrained by measurement limitations and data availability.

With respect to the macroeconomic determinants, the model integrates economic growth (GDP), the inflation rate (INF), and money supply growth (MSG), in order to account for the broader

macroeconomic environment in which banks operate. These variables capture the impact of general economic conditions on bank deposits.

Accordingly, the final selection of explanatory variables reflects a balance between theoretical relevance, data availability, and the statistical coherence of the econometric model.

## 2.2 Hypotheses of the Explanatory Variables

In what follows, each explanatory variable is presented along with its associated hypothesis regarding its expected impact on bank deposits in Algeria.

### 2.2.1 Bank Size (BANKSIZE)

Bank size is measured by the natural logarithm of total assets. It is hypothesized that larger banks enhance depositor confidence, as they are generally perceived as more financially stable and creditworthy. Consequently, a higher bank size results in greater deposit levels.

H1a: There is a positive relationship between bank size and bank deposits in Algeria.

### 2.2.2 Capital Adequacy Ratio (CAR)

The Capital Adequacy Ratio (CAR) is measured by dividing regulatory capital by risk-weighted assets. A higher CAR indicates that the bank holds sufficient capital to absorb potential losses, which reassures depositors against the risk of insolvency and strengthens their confidence in the institution. As a result, well-capitalized banks tend to attract higher deposit volumes, as depositors are more willing to entrust their funds to financially sound institutions.

H1b: There is a positive relationship between capital adequacy and bank deposits in Algeria.

### 2.2.3 Operational Efficiency (EF)

Operational efficiency is captured by the cost-to-income ratio, computed as the ratio of general operating expenses to net banking income (NBI). A higher ratio signals that a greater proportion of income is consumed by operating costs, indicating poor operational efficiency. An efficient bank, by contrast, succeeds in reducing its operating costs, enabling it to offer more attractive interest rates and lower fees, which incentivizes depositors to place their funds in the institution. Therefore, a rising cost-to-income ratio is associated with declining deposit volumes.

H1c: It is assumed that there is a negative relationship between operational efficiency (EF) and bank deposits in Algeria.

### 2.2.4 Loan-to-Deposit Ratio (LDR)

The Loan-to-Deposit Ratio (LDR) is measured by dividing total loans by total deposits. A higher LDR indicates that the bank has extended a large proportion of its funds as loans, leaving limited liquidity reserves. This raises depositor concerns regarding the bank's ability to meet withdrawal demands, thereby undermining confidence and discouraging further deposit mobilization. Consequently, an excessively high LDR is associated with reduced deposit volumes.

H1d: It is assumed that there is a negative relationship between the loan-to-deposit ratio and bank deposits .

### 2.2.5 Return on Equity (ROE)

Return on Equity (ROE) is measured by dividing net income by total equity. A profitable bank is able to reinvest its earnings in expanding its branch network and improving its services, making it more accessible and attractive to depositors. Consequently, a higher ROE leads to higher deposit volumes.

H1e: It is assumed that there is a positive relationship between return on equity and bank deposits.

### 2.2.6 Gross Domestic Product Growth Rate (GDP Growth Rate)

Economic growth is measured by the annual growth rate of Gross Domestic Product (GDP). When GDP increases, household income and corporate profits rise accordingly, thereby enhancing the saving capacity of economic agents. Consequently, a higher GDP growth rate leads to greater deposit volumes.

H2a**:** It is assumed that there is a positive relationship between the GDP growth rate and bank deposits .

### 2.2.7 Inflation Rate (INF)

The inflation rate is expressed as the annual percentage change in the consumer price index (CPI). When inflation exceeds the interest rate offered by banks, the real return on savings becomes negative, incentivizing depositors to withdraw their funds and invest in physical assets to preserve their wealth. Consequently, a higher inflation rate leads to reduced deposit volumes.

H2b: It is assumed that there is a negative relationship between the inflation rate and bank deposits.

### 2.2.8 Money Supply Growth (MSG)

Money supply growth is defined as the annual growth rate of the broad money supply (M2). An expansionary monetary policy increases the volume of money in circulation, thereby enhancing the capacity of economic agents to save and deposit funds in banking institutions. Conversely, a restrictive monetary policy reduces money supply, which constrains deposit growth. Consequently, a higher money supply growth rate leads to greater deposit volumes.

H2c: It is expected that money supply growth positively affects bank deposits in Algeria.

Table 2 : The Explanatory Variables

| Notation | Variable | Measure | Expected Sign |
|---|---|---|---|
| BANKSIZE | Bank Size | BANKSIZE = ln(Total Assets) | Positive |
| CAR | Capital Adequacy Ratio | CAR = (Regulatory Capital / Risk-Weighted Assets) × 100 | Positive |
| EF | Operational Efficiency | EF = General Operating Expenses / Net Banking Income (NBI) | Negative |
| LDR | Loan-to-Deposit Ratio | LDR = Total Loans / Total Deposits | Negative |
| ROE | Return on Equity | ROE = Net Income / Total Equity | Positive |
| GDP | GDP Growth Rate | GDP = (GDP(t) - GDP(t-1)) / GDP(t-1) × 100 | Positive |
| INF | Inflation Rate | INF = (CPI(t)-CPI(t-1)) /CPI(t-1) ×100 | Negative |
| MSG | Money Supply Growth | MSG = (M2(t) - M2(t-1)) / M2(t-1) × 100 | Positive |

Source: Compiled by the student

## 2.3 Model Specification

The purpose of this model is to examine the determinants of bank deposits in Algeria, drawing on both bank-specific microeconomic determinants and macroeconomic determinants. The model is specified as follows:

$$DepRatios_it = \alpha 0 + \beta 1 BankSize_it + \beta 2 CAR_it + \beta 3 EF_it + \beta 4 LDR_it + \beta 5 ROE_it + \beta 6 GDP_it + \beta 7 NFCPI_it + \beta 8 MSG_it + \mu_it$$

DEPRATIOSit denotes the Deposit-to-Asset Ratio; α0 is the constant term; i represents the individual banks; t denotes the year of the study; β represents the estimated coefficients; and μit is the error term of the model. The measurements of all study variables are summarized in the table below.

## 3 Descriptive Analysis

The following section presents a descriptive analysis of the variables employed in the estimation of the parameters of the panel data regression model.

### 3.1 Descriptive Statistics of the Model

Table 3 : Descriptive Analysis of Variables by Banking Sector

| OWN | | DEPRATIOS | BANKSIZE | CAR | EF | LDR | ROE | GDP | INFCPI | MSG |
|---|---|---|---|---|---|---|---|---|---|---|
| Public Banks (OW=1) | Mean | .8229 | 28.174 | .2148 | .3565 | .8102 | .0885 | .0245 | .0534 | .0914 |
| | SD | .0823 | .5774 | .1260 | .2028 | .1328 | .0436 | .0236 | .0245 | .0585 |
| | Max | .9280 | 29.440 | .6609 | 1.233 | 1.110 | .1808 | .048 | .0932 | .1991 |
| | Min | .6109 | 26.644 | .0813 | -.149 | .5006 | .0044 | -.05 | .0195 | -.008 |
| Private Banks (OW=0) | Mean | .7015 | 25.457 | .3167 | .3574 | .8784 | .1172 | .0245 | .0534 | .0914 |
| | SD | .1311 | .9125 | .1919 | .1089 | .3039 | .0558 | .0235 | .0244 | .0583 |
| | Max | .8410 | 32.271 | 1.159 | .8957 | 1.900 | .2500 | .048 | .0932 | .1991 |
| | Min | .0007 | 23.631 | .103 | .0436 | .0258 | -.031 | -.05 | .0195 | -.008 |
| Total | Mean | .7399 | 26.315 | .2845 | .3571 | .8569 | .1081 | .0245 | .0534 | .0914 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **SD** | .1306 | 1.508 | .1799 | .1449 | .2639 | .0539 | .0235 | .0244 | .0582 |
| | **Max** | .9280 | 32.271 | 1.159 | 1.233 | 1.900 | .2500 | .048 | .0932 | .1991 |
| | **Min** | .0007 | 23.631 | .0813 | -.149 | .0258 | -.031 | -.05 | .0195 | -.008 |

Source**:** Results Generated form STATA17 software

The table shows that the Deposit-to-Asset Ratio (DEPRATIOS), which constitutes the dependent variable of this study, public banks record a higher mean ratio of 82.29% compared to 70.15% for private banks, with an overall mean of 73.99% across the full sample. This suggests that public banks rely more heavily on deposits as a source of funding relative to their total assets. The maximum value recorded reaches 92.80%, confirming that deposits represent the principal source of financing for Algerian commercial banks. The relatively low standard deviation of 13.06% at the total level indicates a degree of homogeneity among banks in terms of their deposit structures.

Regarding bank size (BANKSIZE)**,** public banks are considerably larger than their private counterparts, with a mean of 28.174 compared to 25.457 for private banks. This difference is consistent with the well-established dominance of public banks in the Algerian banking sector, which operate on a significantly larger scale despite their smaller number. he overall sample mean of 26.31 confirms the relatively large scale of the institutions included in this study. Moreover, the standard deviation of 1.51, combined with minimum and maximum values of 23.63 and 32.27 respectively, points to a notable degree of heterogeneity in bank size across the sampled institutions, suggesting that the Algerian banking sector encompasses institutions of considerably varying scales.

Concerning the Capital Adequacy Ratio (CAR)**,** public banks record a lower mean of 21.48% against 31.67% for private banks, with an overall sample mean of 28.45% substantially exceeding both the Basel regulatory minimum of 8% and, thereby reflecting a well-capitalised banking sector throughout the study period. Nevertheless, the standard deviation of 17.99%, combined with minimum and maximum values of 8.13% and 115.90% respectively, reveals considerable dispersion in capitalisation levels across the sampled institutions.

Concerning the Loan-to-Deposit Ratio (LDR), public banks record a mean of 81.02% compared to 87.84% for private banks, with an overall sample mean of 85.68% indicating that Algerian commercial banks channel on average approximately 86% of their deposit base toward lending activities, reflecting a reasonably active financial intermediation function. The standard deviation

of 26.39% reveals considerable variation in lending practices across the sampled institutions, suggesting that banks adopt markedly different approaches to balancing their lending and deposit mobilisation activities. The maximum value of 189.99% signals that certain banks extended loans substantially exceeding their deposit base during specific periods a situation that may indicate over-reliance on alternative funding sources while the minimum value of 2.58% reflects an extremely conservative lending posture in others, potentially indicative of risk aversion or limited credit demand during the early years of operation.

As for Return on Equity (ROE**)**, public banks record a mean of 8.85% compared to 11.72% for private banks, with an overall sample mean of 10.81% reflecting moderate profitability across the sector. The standard deviation of 5.39% indicates limited dispersion, though the minimum value of -3.06% signals that certain institutions recorded losses during isolated periods, while the maximum of 25.00% demonstrates that others achieved notably high returns.

Regarding the macroeconomic variables namely GDP growth rate (GDP), inflation rate (INFCPI), and money supply growth (MSG) these variables, being common to all banks regardless of ownership structure, present identical mean values across both sectors. The mean GDP growth rate of 2.45%, with a minimum of -5.00% recorded during periods of economic contraction, reflects a moderately stable yet volatile macroeconomic environment over the study period. The mean inflation rate of 5.33%, ranging from 1.95% to 9.32%, indicates a persistently pressured inflationary environment in Algeria throughout the observation window. Finally, the mean money supply growth rate of 9.14%, with occasional contractionary episodes reflected in the minimum value of -0.76%, confirms the broadly expansionary monetary stance maintained by the Bank of Algeria over the study .

The Student’s t-test results confirm the hypothesis; therefore, H1 is accepted, indicating that the deposits-to-assets ratio differs significantly between Algerian public and private banks

### 3.2 Correlation Matrix of Variables

The table below presents the correlation coefficients between the model variables. The analysis of the correlation matrix enables the assessment of the degree of association between each pair of variables, and allows for the detection of potential multicollinearity issues. In this study,

multicollinearity is considered to be present when the correlation coefficient between two variables exceeds 80%.

Table 4 : Correlation Matrix of Variables

| Variables | DEPRATIOS | BANKSIZE | CAR | EF | LDR | ROE | GDP | MSG | INFCPI |
|---|---|---|---|---|---|---|---|---|---|
| DEPRATIOS | 1.0000 | | | | | | | | |
| BANKSIZE | 0.5251* | 1.0000 | | | | | | | |
| CAR | -0.5204* | -0.4282* | 1.0000 | | | | | | |
| EF | 0.0845 | -0.1177 | -0.1970* | 1.0000 | | | | | |
| LDR | -0.5357* | -0.3739* | 0.4253* | -0.0633 | 1.0000 | | | | |
| ROE | 0.1935* | -0.0185 | -0.0785 | -0.4660* | -0.2070* | 1.0000 | | | |
| GDP | -0.1053 | -0.0490 | 0.1481* | 0.0583 | -0.0163 | 0.0859 | 1.0000 | | |
| MSG | -0.0790 | -0.0801 | 0.2330* | 0.0294 | 0.0442 | 0.1181 | 0.2041* | 1.0000 | |
| INFCPI | 0.0074 | 0.1110 | 0.0979 | 0.0156 | -0.2226* | 0.0904 | 0.4299* | 0.1402* | 1.0000 |

Source: Results generated using STATA 17.

(*) Significant at the 5% level

The correlation matrix reveals that the Loan-to-Deposit Ratio (LDR) and the Capital Adequacy Ratio (CAR) exhibit a negative and significant correlation with deposit levels (DEPRATIOS), with coefficients of -0.5357 and -0.5204 respectively. Furthermore, Bank Size (BANKSIZE) and Return on Equity (ROE) display a positive and significant relationship with DEPRATIOS, with coefficients of 0.5251 and 0.1935 respectively. The remaining explanatory variables, namely Operational Efficiency (EF), GDP growth rate, Money Supply Growth (MSG), and Inflation Rate

(INFCPI), display coefficients that are sometimes positive and sometimes negative but remain statistically insignificant.

The results of the correlation matrix confirm that no coefficient exceeds the 0.80 threshold, indicating the absence of multicollinearity among the explanatory variables. Accordingly, it can be concluded that no multicollinearity problem exists among the explanatory variables of the model. To reinforce this conclusion, the Variance Inflation Factor (VIF) was subsequently computed, the results of which are presented in the table :

Table 5 : Multicollinearity Test of Model Variables (VIF)

| Variable | VIF | 1/VIF |
|---|---|---|
| ROE | 1.71 | 0.584076 |
| EF | 1.69 | 0.590765 |
| CAR | 1.57 | 0.636845 |
| LDR | 1.49 | 0.671232 |
| BANKSIZE | 1.40 | 0.713533 |
| MSG | 1.21 | 0.825405 |
| GDP | 1.11 | 0.898139 |
| INFCPI | 1.03 | 0.968255 |
| Mean VIF | 1.40 | |

Source: Results obtained from STATA 17.

The VIF values of all explanatory variables fall below the critical threshold of 10, with a mean of 1.40 and a maximum of 1.71, indicating the absence of multicollinearity in the model. It can therefore be concluded that each variable provides distinct information that is not captured by the remaining variables, thereby ensuring the statistical independence of the regressors.

## Section 03 : Model Estimation and Interpretation of Results

The present section is devoted to the empirical estimation of the panel data regression model using STATA 17. It encompasses the application of statistical, efficiency, and specification tests, followed by a comprehensive discussion of the regression results. The findings are then interpreted to assess the extent to which the selected independent variables influence bank deposit levels in Algeria.

### 1 Presentation of Tests and Results

This section presents the estimation procedure applied to a panel dataset comprising 19 Algerian banks over a period of ten years, using panel data regression analysis. All necessary steps required for the proper implementation of this methodology were carefully followed. Prior to conducting the estimation, it is worth noting that the multicollinearity test applied to the eight explanatory variables revealed no significant correlation among them, indicating that no variable was eliminated from the model. The statistical tests performed using STATA 17 and their corresponding interpretations are presented as follows:

#### 1.1 Fisher Specification Test

In panel data studies, it is essential to verify whether the data generating process follows a homogeneous or heterogeneous specification (Doucouré, 2008). This involves testing the equality of the model coefficients across the individual dimension. Only a synthesis of these results is highlighted hereafter:

Likelihood Ratios test (Fisher Test): the hypotheses of the test are formulated us follows;

H0: Absence of fixed effects.

H1: Presence of fixed effects .

Table 6 : Fisher Test Results

| **Fisher Test** | |
|---|---|
| R-sq. : within = 0.6442 | Obs. per group : min = 10 |
| between = 0.6394 | avg = 10.0 |
| overall = 0.5881 | max = 10 |
| F test that all u_i = 0: F(18, 163) = 13.86 | Prob > F = 0.0000 |

Source: Results generated using STATA 17.

The probability value of 0.0000 is less than the 5% significance level, indicating the existence of an individual effect, whether fixed or random. Consequently, H1 is accepted and H0 is rejected, confirming that the panel data regression model is the most appropriate estimation approach for this study.

### 1.2 Hausman Specification Test

Following the confirmation of individual effects through the Fisher test, the Hausman test is applied to determine whether these effects are fixed or random. The fixed effects model assumes that the influence of the explanatory variables on the dependent variable remains constant across all individuals and over time (Sevestre, 2002). In contrast, the random effects model assumes that the relationship between the dependent and explanatory variables is not constant but stochastic, whereby the individual effect is treated not as a fixed parameter but as a randomly varying one (Bourbonnais, 2009).

The Hausman test thus enables the selection between these two specifications. The results obtained using STATA 17 are presented as follows:

Table 7 : Results of the Hausman Test

| Hausman Test |
|---|

| |
|---|
| chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 20.33 |
| Prob > chi2 = 0.0092 |

**Source:** Results generated using STATA 17.

The Hausman test yields a probability value of 0.0092, which is less than the 5% significance level. Consequently, H0 is rejected in favor of H1, indicating that the fixed effects model is the most appropriate specification for this study.

### 1.3 Autocorrelation Test

To examine whether the error terms are affected by autocorrelation, this study applies the Wooldridge (2002) test. The hypotheses tested are:

- **$H_0$**: No autocorrelation exists among the error terms.
- **$H_1$:** Autocorrelation is present among the error terms.

Table below summarizes the results of this test.

Table 8 : Wooldridge Autocorrelation Test Results

| Wooldridge Autocorrelation Test |
|---|
| H0: no first-order autocorrelation |
| F( 1, 18) = 7.960 |
| Prob > F = 0.0113 |

**Source:** Results generated using STATA 17.

Based on these results, the presence of serial autocorrelation is detected, as the probability value (Prob > F) = 0.0113 is less than 0.05 for our model . Therefore, it is concluded that an autocorrelation problem exists in the model.

### 1.4 Heteroscedasticity Test

Heteroscedasticity occurs when the variance of the error terms is not constant across observations, violating a key assumption of the classical linear regression model and leading to unreliable estimates.

To detect the presence of heteroscedasticity in our panel data model, the Modified Wald Test for groupwise heteroscedasticity was conducted using STATA 17 software.

The hypotheses tested are as follows:

- **$H_0$:** The variance of the error term is constant .
- **$H_1$:** The variance of the error term is not constant.

The results of this test are presented in the table below.

Table 9 : Modified Wald Test for Groupwise Heteroscedasticity Results

| Modified Wald Test for Groupwise Heteroscedasticity |
|---|
| H0: sigma(i)^2 = sigma^2 for all i |
| chi2 (19) = 2243.99 |
| Prob > chi2 = 0.0000 |

Source: Results generated STATA17 software.

The results of the Modified Wald test reveal a probability value of Prob> chi2 = 0.0000 ,which is significantly lower than the 0.05 significance level . This leads to the rejection of the null hypothesis $H_0$, thereby confirming the existence of heteroscedasticity in the model.

In order to correct for both statistical problems identified above, the Driscoll-Kraay method is employed to estimate the final model. This method accounts for the simultaneous presence of heteroscedasticity, autocorrelation, and cross-sectional dependence, and provides robust standard errors without altering the estimated coefficients, making it particularly appropriate for panel data (Driscoll and Kraay, 1998).

## 2 Presentation of Estimation Results

Based on the results of the econometric tests conducted above, the estimates obtained from the Driscoll-Kraay Standard Errors (SCC) regression are analyzed to examine the effects of the selected variables on bank deposits .

### 2.1 Estimation Using the Driscoll-Kraay Standard Errors (SCC) Method

The Driscoll-Kraay standard errors approach corrects the variance-covariance matrix of errors to simultaneously address heteroscedasticity, autocorrelation, and cross-sectional dependence in panel data (Driscoll and Kraay, 1998). This method yields robust standard errors that ensure the reliability of the statistical inference, without modifying the estimated coefficients.

The estimation results are reported in the following table:

Table 10 : Driscoll-Kraay Regression Results

| **Independent Variables** | **Coef.** | **P>\|t\|** |
|---|---|---|
| BANKSIZE | .1598902*** | 0.000 |
| CAR | .0616234*** | 0.000 |
| EF | .1262456*** | 0.000 |
| LDR | -.0682413** | 0.028 |
| ROE | .2613093*** | 0.007 |
| GDP | .3708463* | 0.094 |
| INFCPI | -.1514538*** | 0.007 |
| MSG | .1014878*** | 0.010 |
| CONS | -3.487391*** | 0.000 |
| Within R-squared | 0.6442 | |
| F(8, 18) | 45456.79 | |
| Prob > F | 0.0000 | |

Source: Results generated STATA17 software

(*) Significant at the 10% level, (**) Significant at the 5% level, (***) Significant at the 1% level.

## 2.2 Interpretation of Results

The table above presents the estimation results of the model, capturing the effect of the selected microeconomic and macroeconomic determinants on bank deposits. Based on the statistical analysis, the model is estimated using 190 observations across 19 banks. The within R-squared stands at 0.6442, indicating that the chosen variables explain approximately 64% of the variation in the deposit ratio. Furthermore, the overall significance of the model is confirmed by an F-statistic of 45456.79 (Prob > F = 0.0000), which is highly significant at the 1% level, reflecting a strong explanatory power and a satisfactory overall fit of the model.

On the basis of the results presented in Table N, the relationship between the independent variables and the dependent variable is interpreted as follows:

### 2.2.1 Bank Size (BANKSIZE)

The estimation results indicate a positive and statistically significant relationship between bank size and deposits at the 1% significance level ($\beta = 0.1599$, $t = 32.35$, $p = 0.000$), suggesting that a 1% increase in bank size leads to an approximate 15.99% increase in bank deposits. This outcome can be attributed to the fact that larger banks benefit from denser branch networks and more advanced digital infrastructure, which reduces transaction costs and facilitates the mobilization of savings. Furthermore, larger banks tend to offer a broader range of financial products and services, incentivizing customers to consolidate their assets within a single institution. These findings are consistent with those of Hadad (2013); Ünvan and Yakubu (2020); who similarly confirmed a positive relationship between bank size and deposit mobilization. Consequently, the hypothesis of this study (H1) stating that bank size has a positive and significant impact on bank deposits is accepted**.**

### 2.2.2 Capital Adequacy Ratio (CAR)

Regarding the capital adequacy ratio, the findings reveal a positive and statistically significant relationship with bank deposits at the 1% significance level (coefficient = 0.0616), suggesting that increase in the capital adequacy ratio leads to increase in bank deposits. A bank with a solid capital base has more to lose in the event of excessive risk-taking, which conveys a perception of prudence and financial discipline that tends to attract deposits, particularly in banking systems where deposit

insurance coverage is limited. These findings are consistent with those of Berger and Bouwman (2017), Seyte Z. et al. (2018) and Rose and Hudgins (2018**)**, who similarly found a positive relationship between capital adequacy and deposit mobilization. Consequently, the hypothesis of this study (H2) stating that capital adequacy has a positive and significant impact on bank deposits is accepted .

### 2.2.3 Efficiency Ratio (EF):

This relationship is statistically significant with a positive sign at the 1% significance level , indicating that an increase in the efficiency ratio encourages banks to invest more heavily in their operations, delivering faster and more consistent services, thereby strengthening depositor loyalty and competitive positioning. Furthermore, investment in advanced digital banking platforms increases operating charges but attracts modern depositors who value technological convenience.

### 2.2.4 Loan-to-Deposit Ratio (LDR)

The estimation results indicate a negative and statistically significant relationship between the loan-to-deposit ratio and bank deposits at the 5% significance level (coefficient = -0.0682). This negative relationship can be explained by two main mechanisms. First, a high LDR signals that the bank has transformed a large proportion of its deposits into loans, leaving fewer liquid reserves to meet unexpected withdrawals. This perception of liquidity risk may discourage depositors from entrusting their funds to the institution, thereby reducing deposit inflows. Second, from a resource constraint perspective, banks operating at very high LDR levels may deliberately limit their search for new deposits once they have reached their risk management or regulatory thresholds. These findings are consistent with those of who similarly documented a negative relationship between the loan-to-deposit ratio and bank deposit mobilization. Consequently, the hypothesis of this study (H4) stating that the loan-to-deposit ratio has a negative and significant impact on bank deposits is accepted.

### 2.2.5 Return on Equity (ROE)

Turning to return on equity, the estimation results indicate a positive and statistically significant relationship with bank deposits at the 1% significance level (coefficient = 0.2613), suggesting that a 1% increase in return on equity leads to an approximate 26.13% increase in bank deposits. Return on equity measures a bank's ability to generate profits from its equity capital. A strong ROE is often perceived by depositors as a signal of financial performance and long-term sustainability,

leading them to favor profitable banks when making deposit decisions. Indeed, a profitable bank is regarded as stable and capable of remunerating its clients and investing in the security and quality of its services, which naturally encourages greater deposit inflows. This result therefore confirms the hypothesis (H5).

### 2.2.6 Gross Domestic Product (GDP):

As for gross domestic product, the estimation results indicate a positive and marginally significant relationship with bank deposits at the 10% significance level (coefficient = 0.3708). This positive relationship is consistent with the growth scenario, whereby an increase in GDP raises household income and corporate profits, thereby enhancing the capacity to save and consequently increasing the volume of bank deposits. Furthermore, economic development is generally accompanied by improved financial infrastructure, enabling banks to expand their networks and attract previously unbanked populations, which mechanically increases the overall volume of deposits through greater financial inclusion. This result is broadly supported by Solomon Kebede(2019), Fisnik & Rufi (2019) documented a strong positive association between economic growth and bank deposits. Consequently, the hypothesis of this study stating that GDP has a positive impact on bank deposits is accepted .

### 2.2.7 Inflation (INFCPI)

With respect to inflation, the estimation results indicate a negative and statistically significant relationship with bank deposits at the 1% significance level (coefficient = -0.1515), suggesting that increase in inflation leads to decrease in bank deposits. This negative relationship is consistent with the substitution effect, whereby rising inflation erodes the real value of money held in deposit accounts, which are often poorly remunerated. As a result, economic agents tend to withdraw their deposits and redirect their savings toward real assets such as real estate, gold, and commodities, or toward financial assets offering better protection against inflation. In other words, when inflation rises, holding money in a bank account becomes less attractive, as the purchasing power of deposited funds gradually diminishes over time. This result aligns with the findings of Orok and Aniekpeno Essien (2018), Alsmadi and Almarashdeh (2019) .Consequently, the hypothesis of this study stating that inflation has a negative and significant impact on bank deposits is accepted.

### 2.2.8 Money Supply Growth (MSG)

Concerning Money Supply growth, the findings point to a positive and statistically significant relationship with bank deposits at the 1% significance level, indicating that higher liquidity in the economy increases deposits. This occurs because monetary expansion raises the amount of money circulating in the financial system, a large portion of which ultimately ends up placed in bank accounts, thereby increasing the overall volume of deposits. This therefore confirms the hypothesis (H8) of a positive and significant effect of money supply growth on bank deposits. These results also concur with the empirical conclusions drawn by Khoirina et al. (2024)

## Conclusion

This chapter aimed to empirically investigate the determinants of bank deposit mobilization in Algeria. Using a panel data sample of 19 Algerian banks over the period 2010-2023 the model was estimated through the Driscoll-Kraay Standard Errors (SCC) method to correct for heteroscedasticity, autocorrelation, and cross-sectional dependence.

The results of the study reveal that bank size, capital adequacy ratio, efficiency ratio, return on equity, money supply growth, and GDP growth exert a positive and statistically significant impact on bank deposits, while the loan-to-deposit ratio and inflation have a negative and statistically significant effect. These findings are broadly consistent with the existing empirical literature and provide meaningful insights into the dynamics of deposit mobilization within the Algerian banking sector, highlighting the importance of both bank-specific and macroeconomic factors in driving deposit growth

# GENERALE CONCLUSION

## General conclusion

The primary objective of this study is to empirically identify the factors impacting bank deposits in Algerian commercial banks over the period spanning from 2010 to 2023. To this end, a panel data regression model is applied to a sample of 19 Algerian commercial banks both public and private, thereby accounting for approximately 90% of population.

The ratio of deposits to total assets constitutes the dependent variable of the model, while the independent variables encompass a set of microeconomic and macroeconomic determinants selected on the basis of the existing theoretical and empirical literature. These variables are collected from multiple sources, including the annual financial statements of the sampled banks, the National Centre of Commercial Register (CNRC), the Bank of Algeria, and the World Bank database.

Through bibliographic documentation, multi-source data collection, and the panel data methodology, this study aims to provide robust and empirically grounded responses to the research questions formulated in the general introduction ultimately confirming or rejecting the hypotheses put forward.

The theoretical review conducted in this study reveals that bank deposits have attracted considerable academic attention across diverse banking contexts worldwide. A substantial number of empirical studies have been carried out with the same objective as the present research the identification of the microeconomic and macroeconomic determinants governing deposit growth in commercial banks. These studies have demonstrated the existence and enabled the identification of a range of factors likely to impact bank deposits, including bank size, profitability, return on assets, capital adequacy ratio, credit risk, non-performing loans, liquidity, interest rate margins, as well as macroeconomic variables such as inflation, interest rates, and GDP growth rate.

However, the results regarding the impact of these factors on bank deposits vary considerably from one banking sector to another, depending on the sample, the country context, and the period under investigation. Indeed, each explanatory variable may exhibit a positive relationship with bank deposits in one sample and a negative relationship in another with the significance of variables equally subject to variation across different empirical settings.

Based on the results of the descriptive analysis, and following the application of a panel data regression model using data relative to the microeconomic and macroeconomic explanatory

variables of Algerian banks, the findings revealed that both bank-specific and macroeconomic determinants exert a significant impact on bank deposits in Algeria, thereby confirming hypotheses H1, H2, and H3.

On one hand, significantly positive relationships were found between bank deposits and bank size (BANKSIZE), capital adequacy ratio (CAR), operational efficiency (EF), return on equity (ROE), GDP growth rate (GDP), and money supply growth (MSG). On the other hand, significantly negative relationships were identified between bank deposits and the loan-to-deposit ratio (LDR) and the inflation rate (INFCPI).

However, it should be noted that the result regarding operational efficiency (EF) partially contradicts the initial hypothesis H1c, which assumed a negative relationship between operational efficiency and bank deposits. The findings instead indicate a significantly positive relationship, Although a higher efficiency ratio reflects increased operating costs, it simultaneously signals greater investment in service quality and digital banking infrastructure, which strengthens depositor confidence and attracts greater deposit volumes.

This study presents contributions along three principal axes: theoretical, methodological, and managerial. On the theoretical level, this research contributes to a deeper understanding ofAlgerian banking system and the dynamics of deposit mobilisation within it. Furthermore, the study enhances the comprehension of bank deposits as a fundamental component of commercial banking activity, their critical importance for the sustainability and financial performance of banking institutions, and the microeconomic and macroeconomic factors that determine their growth. This study is among the first to empirically expose the determinants of bank deposit growth in Algerian commercial banks, thereby enriching the portfolio of Algerian banking research .

Regarding the methodological axis, this study provides a rigorous analytical framework for investigating deposit mobilisation behaviour. The use of the panel data regression method enabled the simultaneous exploitation of data pertaining to multiple microeconomic and macroeconomic variables across Algerian commercial banks.

Finally, on the managerial axis, this research provides bank managers, shareholders, and prospective investors with actionable levers to strengthen deposit mobilisation strategies. This may be achieved indirectly by focusing on the improvement of the key determinants identified in this study .

However, despite the contributions outlined above, the results must be evaluated in light of certain limitations that constrain the scope and generalisability of the study:

- Given the weak dynamics of the Algerian interbank market and the lack of information available within Algerian banks, the collection of the required data was unlikely to be fully achieved.
- The impossibility of integrating all the variables mentioned in the second chapter into the econometric model.
- The limited size of our sample. Although our study covers all banks operating in Algeria, 19 banks remains a small number compared to studies conducted in other countries, where samples reach up to 100 banks.
- In light of the limitations outlined above, we suggest that further research be conducted, the most promising avenues of which are as follows:
- The use of additional explanatory variables to further analyse the determinants of bank deposits and determine the impact of these variables on the results obtained.
- Expanding the scope of the study to include the MENA region, by constructing a sufficiently large sample in order to render the investigation more comprehensive and statistically robust
- Future research could adopt a comparative approach between public and private Algerian banks, in order to assess whether ownership structure significantly influences deposit mobilisation strategies and outcomes across the two categories of institutions.
- Future studies could examine the impact of informal economy size on bank deposit growth in Algeria, given the well-documented phenomenon of funds circulating outside the formal banking circuit a structural feature that directly constrains deposit mobilisation capacity.

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# APPENDICES

Appendix 1 : Table of Demand Deposits by Sector in Algeria (2010–2024)

| Years | Public Sector | Private Sector & Households |
|---|---|---|
| 2010 | 18,352.51 | 10,888.45 |
| 2011 | 20,156.12 | 12,144.23 |
| 2012 | 21,609.06 | 14,107.84 |
| 2013 | 18,743.90 | 15,915.30 |
| 2014 | 23,234.51 | 17,992.10 |
| 2015 | 23,394.85 | 17,485.41 |
| 2016 | 21,257.48 | 19,533.97 |
| 2017 | 22,239.63 | 20,213.18 |
| 2018 | 30,045.25 | 21,550.90 |
| 2019 | 28,623.90 | 22,596.64 |
| 2020 | 22,692.22 | 22,758.08 |
| 2021 | 24,932.55 | 25,775.81 |
| 2022 | 34,787.11 | 28,908.55 |
| 2023 | 36,746.46 | 32,047.14 |
| 2024 | 38,866.19 | 36517.43 |

**Source**: Bank of Algeria, Annual Reports (2010–2024).

Appendix 2 : Table of Time Deposits by Sector in Algeria (2010–2024)

| YEARS | Public Sector | Private Sector & Households |
|---|---|---|
| 2010 | 6460.72344 | 2188.7543 |
| 2011 | 7500.343768 | 22086.369 |
| 2012 | 9402.448038 | 22277.1619 |
| 2013 | 11569.97297 | 22459.3489 |
| 2014 | 12113.7981 | 22675.7243 |
| 2015 | 14840.3394 | 22916.0073 |
| 2016 | 13577.9901 | 23167.1921 |
| 2017 | 11655.3494 | 23426.2938 |
| 2018 | 15847.03882 | 236677.3303 |
| 2019 | 18738.5035 | 23897.1099 |
| 2020 | 19320.797 | 24191.1966 |
| 2021 | 18551.2316 | 24411.7737 |
| 2022 | 23856.0625 | 24628.5301 |
| 2023 | 30448.9144 | 24882.3213 |
| 2024 | 32278.3697 | 25144.5994 |

**Source**: Bank of Algeria, Annual Reports (2010–2024).

Appendix 3 : Table of Time Deposits and Demand Deposits in Algeria (1990–2024)

| Years | Time Deposits | Demand Deposits |
|---|---|---|
| 1990 | 72.923 | 105.546 |
| 1991 | 90.276 | 133.111 |
| 1992 | 146.183 | 140.841 |
| 1993 | 180.522 | 188.933 |
| 1994 | 247.68 | 196.452 |
| 1995 | 280.455 | 210.775 |
| 1996 | 325.958 | 234.029 |
| 1997 | 409.948 | 254.833 |
| 1998 | 766.09 | 247.57 |
| 1999 | 884.167 | 368.375 |
| 2000 | 974.35 | 467.502 |
| 2001 | 1,235.006 | 554.502 |
| 2002 | 1,485.191 | 642.168 |
| 2003 | 1,724.043 | 718.905 |
| 2004 | 1,577.456 | 1,127.916 |
| 2005 | 1,736.164 | 1,224.404 |
| 2006 | 1,766.105 | 1,750.432 |
| 2007 | 1,956.555 | 2,560.801 |
| 2008 | 2,214.968 | 2,946.919 |
| 2009 | 2,228.894 | 2,502.926 |

| | | |
|---|---|---|
| 2010 | 2,524.281 | 2,870.718 |
| 2011 | 2,787.488 | 3,495.792 |
| 2012 | 3,331.5 | 3,356.8 |
| 2013 | 3,691.7 | 3,537.5 |
| 2014 | 4,083.8 | 4,434.7 |
| 2015 | 4,443.3 | 3,891.7 |
| 2016 | 4,409.3 | 3,732.2 |
| 2017 | 4,708.5 | 4,499.0 |
| 2018 | 5,232.6 | 4,880.55 |
| 2019 | 5,531.4 | 4,313.0 |
| 2020 | 5,757.8 | 4,159.1 |
| 2021 | 6,035.2 | 4,874.7 |
| 2022 | 7,584.9 | 6,216.7 |
| 2023 | 8,012.0 | 6,134.5 |
| 2024 | 8,787.31 | 6,602.64 |

**Source**: Bank of Algeria, Annual Reports (1990–2024).

## Appendix 4 : Descriptive Statistics

```
. tabstat depratios banksize car ef ldr roe gdp infcpi msg, statistics(mean sd max min) by (ow) columns(v
> ariables)

Summary statistics: Mean, SD, Max, Min
Group variable: ow (OW)
```

| ow | deprat~s | banksize | car | ef | ldr | roe | gdp | infcpi | msg |
|---|---|---|---|---|---|---|---|---|---|
| 0 | .7015201 | 25.45675 | .3166619 | .3574064 | .8784156 | .1171815 | .0245 | .0533727 | .0914372 |
| | .1310505 | .9125357 | .1919366 | .1088609 | .3039359 | .0558408 | .0235191 | .0244212 | .0582827 |
| | .8410438 | 32.2711 | 1.159 | .8957378 | 1.899962 | .2500029 | .048 | .0932217 | .19907 |
| | .0007339 | 23.6314 | .103 | .0436152 | .0258064 | -.0306348 | -.05 | .0195177 | -.0075753 |
| 1 | .8228987 | 28.17351 | .2147994 | .3564798 | .810193 | .0885027 | .0245 | .0533727 | .0914372 |
| | .0822527 | .5773713 | .1260189 | .2028455 | .1327884 | .0436162 | .0235952 | .0245003 | .0584714 |
| | .9279519 | 29.44034 | .660926 | 1.233428 | 1.109766 | .1808451 | .048 | .0932217 | .19907 |
| | .6108698 | 26.64418 | .0813 | -.1490789 | .5006258 | .0044471 | -.05 | .0195177 | -.0075753 |
| Total | .7398502 | 26.31467 | .2844948 | .3571138 | .8568716 | .108125 | .0245 | .0533727 | .0914372 |
| | .130555 | 1.507959 | .1798772 | .1448509 | .2638701 | .0538888 | .0234986 | .0243999 | .0582319 |
| | .9279519 | 32.2711 | 1.159 | 1.233428 | 1.899962 | .2500029 | .048 | .0932217 | .19907 |
| | .0007339 | 23.6314 | .0813 | -.1490789 | .0258064 | -.0306348 | -.05 | .0195177 | -.0075753 |

```
.
```

## Appendix 5 : Correlation Matrix of Variables

```
. pwcorr dep_ratios banksize car ef ldr npl roe gdp ms_g inf_cpi, star(5)
```

| | dep_ra~s | banksize | car | ef | ldr | npl | roe |
|---|---|---|---|---|---|---|---|
| dep_ratios | 1.0000 | | | | | | |
| banksize | 0.5251* | 1.0000 | | | | | |
| car | -0.5204* | -0.4282* | 1.0000 | | | | |
| ef | 0.0845 | -0.1177 | -0.1970* | 1.0000 | | | |
| ldr | -0.5357* | -0.3739* | 0.4253* | -0.0633 | 1.0000 | | |
| npl | 0.3133* | 0.5036* | -0.1656* | 0.0586 | -0.1701* | 1.0000 | |
| roe | 0.1934* | -0.0186 | -0.0785 | -0.4659* | -0.2071* | -0.1394 | 1.0000 |
| gdp | -0.1053 | -0.0490 | 0.1481* | 0.0583 | -0.0163 | -0.0101 | 0.0859 |
| ms_g | -0.0790 | -0.0801 | 0.2330* | 0.0294 | 0.0442 | -0.0530 | 0.1180 |
| inf_cpi | 0.0074 | 0.1110 | 0.0979 | 0.0156 | -0.2226* | -0.0260 | 0.0904 |

| | gdp | ms_g | inf_cpi |
|---|---|---|---|
| gdp | 1.0000 | | |
| ms_g | 0.2041* | 1.0000 | |
| inf_cpi | 0.4299* | 0.1402* | 1.0000 |

## Appendix 6 : Multicollinearity Test of Model Variables (VIF)

```
. regress  dep_ratios banksize car ef ldr roe  gdp inf_cpi ms_g

      Source |       SS       df       MS              Number of obs =     190
-------------+------------------------------           F(  8,   181) =   81.19
       Model |  2.65519165     8  .331898956            Prob > F      =  0.0000
    Residual |  .739939161   181  .004088062            R-squared     =  0.7821
-------------+------------------------------           Adj R-squared =  0.7724
       Total |  3.39513081   189  .017963655            Root MSE      =  .06394

------------------------------------------------------------------------------
  dep_ratios |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    banksize |   .0525757   .0037612    13.98   0.000     .0451541    .0599972
         car |  -.0231162    .032399    -0.71   0.476    -.0870445    .0408122
          ef |   .2559815   .0394303     6.49   0.000     .1781793    .3337836
         ldr |  -.1570303   .0213499    -7.36   0.000    -.1991569   -.1149037
         roe |   .7484761   .1111569     6.73   0.000     .5291461    .9678062
         gdp |  -.8736374   .4056872    -2.15   0.033    -1.674122   -.0731528
     inf_cpi |  -.4902356   .2523817    -1.94   0.054    -.9882243     .007753
        ms_g |  -.0972088   .0792489    -1.23   0.222    -.2535793    .0591618
       _cons |  -.6129585   .1177097    -5.21   0.000    -.8452183   -.3806988
------------------------------------------------------------------------------

. vif

    Variable |       VIF       1/VIF
-------------+----------------------
         roe |      1.71    0.584185
          ef |      1.69    0.590880
         car |      1.57    0.636854
         ldr |      1.49    0.671222
    banksize |      1.40    0.713501
        ms_g |      1.21    0.825446
         gdp |      1.11    0.898130
     inf_cpi |      1.03    0.968257
-------------+----------------------
    Mean VIF |      1.40
```

## Appendix 7 : Results of the Fisher Test

```
. xtreg  dep_ratios banksize car ef ldr roe  gdp inf_cpi ms_g, fe

Fixed-effects (within) regression               Number of obs      =       190
Group variable: code                            Number of groups   =        19

R-sq:  within  = 0.6442                         Obs per group: min =        10
       between = 0.6394                                        avg =      10.0
       overall = 0.5881                                        max =        10

                                                F(8,163)           =     36.89
corr(u_i, Xb)  = -0.8679                        Prob > F           =    0.0000

------------------------------------------------------------------------------
  dep_ratios |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    banksize |   .1598902   .0157178    10.17   0.000     .1288534     .190927
         car |   .0616234   .0291476     2.11   0.036     .0040679     .119179
          ef |   .1262456   .0363482     3.47   0.001     .0544715    .1980197
         ldr |  -.0682413   .0193293    -3.53   0.001    -.1064093   -.0300732
         roe |   .2613093   .0967868     2.70   0.008     .0701917    .4524268
         gdp |   .3708463   .3269121     1.13   0.258    -.2746824    1.016375
     inf_cpi |  -.1514538   .1713947    -0.88   0.378    -.4898941    .1869864
        ms_g |   .1014878   .0590725     1.72   0.088    -.0151582    .2181339
       _cons |  -3.487391   .4298042    -8.11   0.000    -4.336093   -2.638689
-------------+----------------------------------------------------------------
     sigma_u |  .15780682
     sigma_e |  .04235144
         rho |  .93281383   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(18, 163) =    13.86                 Prob > F = 0.0000
```

## Appendix 8 : Results of Student Test

```
. ttest depratios, by (ow)

Two-sample t test with equal variances

   Group |     Obs        Mean    Std. err.   Std. dev.   [95% conf. interval]
---------+--------------------------------------------------------------------
       0 |     182    .7015201    .0097141    .1310505    .6823527    .7206876
       1 |      84    .8228987    .0089745    .0822527    .8050488    .8407486
---------+--------------------------------------------------------------------
Combined |     266    .7398502    .0080048     .130555     .724089    .7556114
---------+--------------------------------------------------------------------
    diff |           -.1213786    .0155525               -.1520014   -.0907558
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -7.8044
H0: diff = 0                                     Degrees of freedom =      264

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0000         Pr(|T| > |t|) = 0.0000          Pr(T > t) = 1.0000
```

Appendix 9 : Results of Hausman Test

```
. xtreg  dep_ratios banksize car ef ldr roe  gdp inf_cpi ms_g, fe

Fixed-effects (within) regression               Number of obs      =       190
Group variable: code                            Number of groups   =        19

R-sq:  within  = 0.6442                         Obs per group: min =        10
       between = 0.6394                                        avg =      10.0
       overall = 0.5881                                        max =        10

                                                F(8,163)           =     36.89
corr(u_i, Xb)  = -0.8679                        Prob > F           =    0.0000

------------------------------------------------------------------------------
  dep_ratios |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    banksize |   .1598902   .0157178    10.17   0.000     .1288534    .190927
         car |   .0616234   .0291476     2.11   0.036     .0040679    .119179
          ef |   .1262456   .0363482     3.47   0.001     .0544715    .1980197
         ldr |  -.0682413   .0193293    -3.53   0.001    -.1064093   -.0300732
         roe |   .2613093   .0967868     2.70   0.008     .0701917    .4524268
         gdp |   .3708463   .3269121     1.13   0.258    -.2746824    1.016375
     inf_cpi |  -.1514538   .1713947    -0.88   0.378    -.4898941    .1869864
        ms_g |   .1014878   .0590725     1.72   0.088    -.0151582    .2181339
       _cons |  -3.487391   .4298042    -8.11   0.000    -4.336093   -2.638689
-------------+----------------------------------------------------------------
     sigma_u |  .15780682
     sigma_e |  .04235144
         rho |  .93281383   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(18, 163) =    13.86                 Prob > F = 0.0000

. estimates store fixed

. xtreg  dep_ratios banksize car ef ldr roe  gdp inf_cpi ms_g, re

Random-effects GLS regression                   Number of obs      =       190
Group variable: code                            Number of groups   =        19

R-sq:  within  = 0.5607                         Obs per group: min =        10
       between = 0.7926                                        avg =      10.0
       overall = 0.7357                                        max =        10

Random effects u_i ~ Gaussian                   Wald chi2(8)       =    310.39
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0000

------------------------------------------------------------------------------
  dep_ratios |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    banksize |     .06657   .0066612     9.99   0.000     .0535143    .0796256
         car |  -.0018744   .0305793    -0.06   0.951    -.0618086    .0580599
          ef |   .1297487   .0391366     3.32   0.001     .0530423     .206455
         ldr |  -.1112567    .020743    -5.36   0.000    -.1519123   -.0706012
         roe |    .454518   .1057947     4.30   0.000     .2471643    .6618718
         gdp |  -.7310111   .3216349    -2.27   0.023    -1.361404   -.1006184
     inf_cpi |  -.3649026   .1963132    -1.86   0.063    -.7496695    .0198643
        ms_g |  -.0565225   .0628122    -0.90   0.368    -.1796322    .0665873
       _cons |  -.9613124   .1885058    -5.10   0.000    -1.330777   -.5918477
-------------+----------------------------------------------------------------
     sigma_u |  .03263917
     sigma_e |  .04235144
         rho |  .37262338   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. estimates store random

. hausman fixed random

                 ____ Coefficients ____
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |    fixed        random       Difference          S.E.
-------------+----------------------------------------------------------------
    banksize |   .1598902        .06657       .0933203        .0142365
         car |   .0616234    -.0018744        .0634978               .
          ef |   .1262456     .1297487       -.0035031               .
         ldr |  -.0682413    -.1112567        .0430155               .
         roe |   .2613093      .454518       -.1932088               .
         gdp |   .3708463    -.7310111        1.101857        .0585024
     inf_cpi |  -.1514538    -.3649026        .2134488               .
        ms_g |   .1014878    -.0565225        .1580103               .
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =          20.33
                Prob>chi2 =         0.0091
                (V_b-V_B is not positive definite)

. xtserial  dep_ratios banksize car ef ldr roe  gdp inf_cpi ms_g

Wooldridge test for autocorrelation in panel data
HO: no first-order autocorrelation
    F(  1,        18) =       7.963
           Prob > F =       0.0113
```

## Appendix 10 : Results of the Autocorrelation Test

```
. xtserial  dep_ratios banksize car ef ldr roe  gdp inf_cpi ms_g

Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
    F(  1,      18) =      7.963
           Prob > F =      0.0113
```

## Appendix 11 : Results of the Heteroscedasticity Test

```
. xttest3

Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

H0: sigma(i)^2 = sigma^2 for all i

chi2 (19)  =    2244.58
Prob>chi2 =      0.0000
```

## Appendix 12 : Results of the Panel Data Regression

```
. xtscc  dep_ratios banksize car ef ldr roe  gdp inf_cpi ms_g, fe

Regression with Driscoll-Kraay standard errors  Number of obs     =       190
Method: Fixed-effects regression                Number of groups  =        19
Group variable (i): code                        F(  8,    18)     =  45456.79
maximum lag: 2                                  Prob > F          =    0.0000
                                                within R-squared  =    0.6442

------------------------------------------------------------------------------
             |               Drisc/Kraay
  dep_ratios |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    banksize |   .1598902   .0049424    32.35   0.000     .1495066    .1702739
         car |   .0616234   .0088371     6.97   0.000     .0430574    .0801895
          ef |   .1262456   .0143337     8.81   0.000     .0961315    .1563597
         ldr |  -.0682413    .028652    -2.38   0.028     -.128437   -.0080456
         roe |   .2613093   .0856273     3.05   0.007     .0814131    .4412055
         gdp |   .3708463   .2095669     1.77   0.094    -.0694374      .81113
     inf_cpi |  -.1514538   .0493812    -3.07   0.007    -.2551999   -.0477078
        ms_g |   .1014878   .0353305     2.87   0.010     .0272612    .1757145
       _cons |  -3.487391   .1243991   -28.03   0.000    -3.748744   -3.226038
------------------------------------------------------------------------------
```

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