Factors affecting the growth of deposits in Algerian banks An applied study during the period (2019-2023)

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Abstract:

Banking activity is based on accepting deposits, which are considered the most important source of bank financing due to the low cost of obtaining them compared to other sources of financing. This study aims to test and measure the impact of some internal factors (equity, growth, loans, liquidity, bank size and profit volatility) and external factors (economic growth, population growth and unemployment rates) on the growth of deposits in Algerian banks during the period (2019-2023) The cross-sectional time series model was applied to a sample of three public banks and four private banks. This study reached the following results: There is no effect of property rights, loans, profitability, economic growth, or unemployment on the growth of deposits in Algerian banks. The growth in the volume of deposits is also positively affected by growth (increased investments), liquidity, and bank size, and negatively affected by profit fluctuations and population Growth.

Keywords: Algerian banks; deposit growth; internal factors; economic factors.

Jel Classification Codes : C23, G21, G35.

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1. INTRODUCTION

Bank deposits are one of the most important sources of financing in banks, as they represent the basic pillar on which banks depend in carrying out their banking activities. Deposits express the money that individuals or institutions deposit with these banks in exchange for interest, which allows the bank to carry out its various activities, including granting various financial loans, making it a vital indicator that expresses the extent of customers' confidence in the banking system and the stability of the economy as a whole Deposits also gain special importance in the Algerian economy due to banks' complete reliance on traditional financing based on mobilizing local savings in light of the limited non-traditional financing tools and the weak development of financial markets.

However, the size and growth of these deposits is not affected by a specific factor, but rather by several economic, financial, social and institutional factors. These factors include factors specific to the bank itself, such as the size of the bank, liquidity, loans, growth (investment opportunities), profit volatility, profitability...Etc., and external factors such as interest rates, the level of national income, the level of inflation, the stability of the banking system and monetary and financial policies, the level of confidence in public and private banks and the degree of development of banking services, in addition to psychological factors related to the behavior of depositors and their future expectations, which are manifested in individuals' preference to save outside the banking organization.

In light of the challenges facing the Algerian economy, especially those related to diversifying sources of income and reducing dependence on oil revenues, it still faces difficulties in mobilizing and employing savings due to the overlap or influence of a group of factors. Accordingly, the problem of this study revolves around the following question :

What are the factors that determine bank deposits in Algerian banks ? How do both the bank's economic and internal factors affect the ability of Algerian banks to mobilize savings ?

This study derives its importance from the fact that it addresses a vital topic for the Algerian economy, given that deposits are a major and important source of financing for Algerian banks, given the limited availability of other sources of financing. The importance of the study lies in :

- Explaining the importance of deposits as a source of external financing.

Understanding the factors affecting the growth of bank deposits helps improve the performance of Algerian banks and allows them to develop more effective strategies to attract savings.

This study contributes to enriching previous studies related to savings behavior in the Algerian economy, by providing an academic and applied analysis of the internal and macroeconomic factors affecting bank deposits in Algeria.

Analyzing the factors affecting bank deposits allows us to analyze savers' reactions to economic and financial changes and their impact on their behavior, thus enabling us to estimate future changes.

This study aims to understand, measure and analyze the impact of internal and macroeconomic factors on the growth of deposits in Algerian banks, using analytical and statistical methods to determine the strength and direction of the relationship between the influencing factors and the volume of deposits in Algerian banks. Through this research, we seek to achieve a number of objectives, perhaps the most important of which are :

- Identify the most important economic and financial variables affecting bank deposits.
- Measuring the relationship between the factors affecting the growth of deposits in Algerian banks.
- Proposing recommendations to raise the level of saving and attract deposits.

2. General concepts about deposits in banks.

Deposits are considered obligations towards third parties, and this source is considered the most important source of financial resources that the bank resorts to.

2.1 Definition of a deposit: It is an authorized amount of money in any currency. It is deposited with banks and must be paid or repaid upon request or due with prior notice or at a specific deadline (at least one year). There are some amounts that are deposited in banks, but they do not fall within the concept of deposits. Examples of these include:

- Amounts deposited in local currency in exchange for opening documentary credits.
- Amounts deposited in exchange for issuing bank guarantees.
- Amounts of one branch at another branch of the same bank. (Djalda, 2009, p. 110)

2.2 Types of deposits: Deposits are divided into several types, including:

2.2.1 Current "on-demand" deposits: These are deposits whose owners require banks to have the right to withdraw them at any time without waiting and without prior notice (shaarawi, 2007, p. 163) That is, it can be converted immediately into cash by withdrawing a check on it by depositors, and because withdrawal on it can take place at any time, banks resort to maintaining assets with a high degree of liquidity that can be converted into cash when necessary to confront depositors' withdrawals. (ali & Al Issa, 2004, p. 140)

2.2.2"Fixed" term deposits: These are deposits that can only be withdrawn when the agreed maturity date arrives, and the deposit can be automatically renewed once it matures based on a written request from the customer, otherwise the deposit amount and interest will be transferred to a current account on demand. (ElNasr, 2000, pp. 52-53)

2.2.3 Savings deposits: These are deposits recorded in a savings book that the customer keeps and provides with each withdrawal or deposit. This type of deposit is suitable for individuals seeking to achieve returns without sacrificing liquidity, as withdrawals and deposits can be made at any time.

2.2.4 Deposits by "advance notification": These are deposits that the customer has the right to deposit at any time, but he may not withdraw them before notifying the bank for a period agreed upon in advance, specifying the amount that will be withdrawn. This is to give the bank sufficient time to provide the liquidity necessary to meet the customer's request. (Hanafi, 2007, p. 236)

2.3 Previous studies.

Bank deposits are one of the most important sources of financing in commercial banks and are one of the components of the liabilities in the bank's general budget. The difference in the size of deposits and their growth from one bank to another and within the same bank from one period to another is due to their being affected by many factors surrounding the bank, whether internal factors or external economic factors.

Study (Richard apau, Athens bongani sibindi, 2025): This study aimed to evaluate the determinants of bank deposits under changing economic conditions by applying dynamic bank models to a sample of 12 commercial banks in South Africa during the period extending from (2007-2022). This study concluded that the factors specific to banks, such as previous deposit growth, profitability, the size of the bank and the capital adequacy ratio are all factors that

positively affect the growth of deposits, unlike spending, which negatively affects the growth of deposits. Therefore, the study recommended the optimal management of spending for the flow of deposits. The study also found a positive relationship between the unemployment rate and the flow of deposits, which is an unexpected result, considering that high unemployment rates lead to a decrease in the financial capacity of individ uals and thus a lack of saving.

Study (Shasnil Avinech Chand et al, 2024) : The aim of this study was to investigate the factors affecting bank deposits in Fiji using fixed-effect regression methods on a sample of six commercial banks and two credit institutions during the period (2000-2022). The study found a positive correlation between bank characteristics such as size, profitability, loans (loans/total deposits), financial stability and deposit volume While I found an inverse correlation between capital adequacy and the volume of deposits, macroeconomic variables such as money transfer and per capita GDP are also positively related to the volume of deposits.

Study (Raghu bir bista, priyanka basnet, 2022) : This study tested the impact of economic and internal factors on term deposits in commercial banks in Nepal. To achieve this, a time series model was applied during the period (2000-2018) based on data published by the Central Bank. The study concluded that the GDP per capita, the US dollar exchange rate, the interest rate, The number of agencies positively affects term deposits in commercial banks, in contrast to the inflation rate, which negatively affects them.

Study (Kamugisha Charles, 2022) : This study attempted to investigate the impact of some factors on the growth of deposits in Rwandan banks. The study concluded that macroeconomic and bank-specific factors play a role in determining the factors affecting the growth of deposits in Rwanda. The study used three-way time data starting from the first three-way of 2005 until the fourth three-way of 2019. The study confirmed the existence of an impact on the gross domestic product, public spending, The number of agencies and interest rates on deposit growth in the long term, while in the short term, the results of the study showed that public spending and gross domestic product affect the growth of bank deposits in Rwanda.

The study (Yitbarek takele bayiley, hibret belay, 2022) aimed to analyze the impact of internal and external factors on the growth of deposits in the short and long term on a sample of Ethiopian banks during the period (1974-1975, 2013-2014). The study ultimately found the existence of a statistically significant direct relationship between population growth and the growth of deposits in the long term.

Study (Modeyin femi, et al, 2021) : This study aimed to investigate the factors affecting deposits in Nigerian commercial banks during the period (2000-2019). To achieve this, cross-sectional time series data was used and many tests were conducted to determine the studied model. The study found that the number of branches and the size of the bank are related in a direct, statistically significant relationship with the size of deposits While the rate of financial intermediation and economic growth are linked to a statistically insignificant direct relationship, as for the money supply, it is linked to a statistically significant inverse relationship with the volume of deposits.

A study (Habtamu alebachew ligass, et al, 2021) conducted on a sample of Ethiopian commercial banks during the period (2010-2019) tested the effect of demographic growth on

deposit growth. The study found a statistically significant inverse relationship between demographic growth and deposit growth.

A study (Vu thi Phuong, Le trung thanh, 2021) addressed the impact of macroeconomic and bank-specific factors on deposit growth in Vietnam. To achieve this, a fixed effects and random effects model was used on a sample of 40 banks during the period (2006-2019). The study found that both profitability and GDP affect deposit growth, unlike bank size, non-performing loans, and inflation.

Study (Ibrahim nandom yakubu, Aziza hashi abokor, 2020) : This study attempted to test the impact of factors affecting the growth of deposits in Turkish banks during the period (the first quarter of 2000 to the fourth quarter of 2016). This study used the distributed delay autoregression method to study the impact of banking and macroeconomic factors on deposit growth, and the results showed that bank stability, banking sector efficiency, economic growth, Inflation is all a factor that affects deposit growth in the long term. However, in the short term, the study found that branch expansion and money supply are the only factors that influence deposit mobilization.

Study (Yuksel akay unvan, Ibrahim nandom yakubu, 2020): Using the random effects model, this study attempted to study the effect of bank characteristics on the growth in the volume of deposits in commercial banks in Ghana during the period (2008-2017). The results of the study showed that there is a significant effect of profitability, bank size and liquidity on the growth of deposits, and the inflation rate negatively affects the growth in the volume of deposits.
Study (Rama Doulaty, 2020): This study aimed to identify the factors affecting the volume of deposits in traditional Syrian banks during the period extending from the first quarter of 2012 to the last quarter of 2018. Using the multiple understatement model, the study concluded: There is a negative moral impact of financial factors represented by equity to total assets, net interest margin, operating costs to operating income in deposits, The study also found a significant impact of economic factors represented by the inflation rate on deposits.

Study (Radhe shyam Pradhan, Dipika paneru, 2017) : This study tested the impact of economic factors on term deposits in commercial banks in Nepal. To achieve this, a sample of 18 banks was used during the period (2008-2013) using SPSS software. This study tested the impact of economic growth rate, inflation rate, number of agencies and rate of return on total assets on deposits.

3. A descriptive analytical study of the factors affecting the growth of deposits in Algerian banks.

Bank deposits are the cornerstone of banking work due to their vital role in providing the basic sources of financing that banks rely on to carry out their various activities. In this part of the study, we will present the methodology and model of the study, in addition to analyzing the study variables and studying the correlation between them.

3.1. Data and methodology :

This study aims to study the impact of some internal and economic factors on the growth of deposits in Algerian banks. The following table shows the banks that make up the study sample.

Table 1 : Banks forming the study sample.

Public banks	Algerian Popular Credit, National Bank of Algeria, Foreign Bank of Algeria
Private banks	Societe Generale Bank Algeria, Gulf Bank Algeria, Arab Banking Corporation Bank, BNP Paribas Algeria

Source : Prepared by the researcher.

The study sample consists of information obtained from the annual reports of the Algerian public and private banks under study for a period of 5 years during the period (2019-2023).

3.2 Study model.

Through the theoretical and applied study of the factors affecting deposit growth, the study model (dependent variable and independent variables) can be summarized as follows :

$$DGRO_{i,t} = C_i + B_1 EQ_{i,t} + B_2 GROW_{i,t} + B_3 LIQ_{i,t} + B_4 CRE_{i,t} + B_5 ROA_{i,t} + B_6 TA_{i;t} + B7 RISK_{i-1;t}$$

$$+ B8 GDP_{i-1;t} + B9 PGR_{i-1;t} + B10 AN_{i-1;t} \varepsilon_{i,t}$$

Where :

i : Represents the number of banks in the study (7 banks).

t : Represents the time period (2019-2023).

$DGRO_{i,t}$: It represents a measure of the growth of deposits in banks, which is calculated by calculating the annual change in bank deposits.

$EQ_{i,t}$: Represents equity, which is calculated by dividing equity by total assets.

$GROW_{i,t}$: It represents the growth rate in the bank, which is calculated by calculating the annual change in total assets.

$LIQ_{i,t}$: Represents the liquidity ratio (calculated by dividing liquid assets by deposits).

$CRE_{i,t}$: It represents the loan percentage, which is calculated by dividing the loans granted by the bank by the total assets.

$ROA_{i,t}$: Represents the rate of return on total assets (calculated by dividing the net result by total assets.

$TA_{i,t}$: The size of the bank is represented by the natural logarithm of total assets.

$RISK_{i;t}$: It represents a fluctuation in profits, which is calculated through the annual change in the rate of return on total assets.

$GDP_{i;t}$: Represents the rate of economic growth.

$PGR_{i;t}$: Represents the population growth rate.

$AN_{i;t}$: Represents the unemployment rate.

$\varepsilon_{i,t}$: Error limit.

3.3 Analysis of study variables

Before starting to estimate and analyze the results of the factors affecting the growth of deposits in Algerian banks during the period (2019-2023), it is necessary to describe the data of the study variables and clarify their main features using the most acceptable descriptive analysis, which is the arithmetic mean, standard deviation, highest value, and lowest value.

The following table shows the values of the arithmetic mean and standard deviation, in addition to the lowest and highest values of the dependent variable (deposit growth), and the independent variables (equity, growth, liquidity, loans, profitability, bank size, profit volatility, economic growth, population growth and unemployment rate). These variables were calculated based on the financial statements of Algerian banks and obtained from the financial statements of the banks themselves published on the official websites of these banks.

Table 2 : Analysis of study variables.

Study Variables	Symbol	Number of Observations	Minimum	Mean	Maximum	Standard Deviation
Dependent Variable : Deposit Growth	DGRO	35	-0.19603	0.0346512	0.25271	0.1548691
Equity	EQ	35	0.07395	0.1312069	0.31188	0.066185
Growth	GROW	35	-0.04933	0.0711877	0.2428	0.1012649
Liquidity	LIQ	35	0.06846	0.2247065	0.46138	0.0877471
Loans	CRE	35	0.38923	0.5994409	0.81069	0.1211741
Profitability	ROA	35	0.00546	0.0178403	0.02421	0.022344
Bank Size	TA	35	10.90193	11.88826	12.78578	0.6402322
Earnings Volatility	RISK	35	-1.12937	-0.141716	0.52294	0.3920217
Economic Growth	GDP	35	-5	1.46	4.1	3.490929
Population Growth	PGR	35	1.51	1.666	1.86	0.121515
Unemployment	AN	35	11.43	11.992	12.7	0.5949877

Source : Prepared by the researcher.

From Table No2, the results shown in the table above show that the ratio of the rate of return to total assets (ROA) has the lowest standard deviation value of 0.022344, and therefore it is responsible for the concentration of the studied sample. On the contrary, we note that the economic growth rate (GDP) is responsible for the dispersion of the sample with the highest standard deviation value of 3.490929.

The previous table shows the high difference between the minimum and maximum for the following study variables: deposit growth between -19.60% and 25.27%, equity between 7.39% and 31.18%, growth between -4.93% and 24.28%, liquidity between 6.84% and 46.13%, loans between 38.92% and 81.06%, profitability between 0.54% and 2.42%, profit volatility between -112.93% and 52.29%, It is worth noting that the External Bank of Algeria (BEA) achieved the highest deposit growth rate in 2021, as deposits increased from DZD 2,288 billion in 2020 to DZD 3,068 billion in 2021, unlike 2019, in which the bank achieved the lowest deposit growth rate at -19.60%. The Arab Banking Corporation (ABC) also achieved the highest equity rate in

2023 at 31.18% While the National Bank of Algeria (BNA) achieved the lowest rate in 2019 at 7.39%.

3.4 Correlation analysis between dependent and independent variables.

To test the relationship between the independent study variables and the dependent variable, the Pearson Corrélation test was used for all Algerian public and private banks in the study sample during the period (2019-2023). The following table shows the results of the correlation matrix analysis between the dependent variable and the independent variables.

Table 3 : Correlation matrix between the independent study variables and the dependent variable.

corrélation probabilité	DGRO	EQ	GROW	LIQ	CRE	ROA	TA	RISK	GDP	PGR	AN
DGRO	1.0000										
EQ	-0.1520	1.0000									
GROW	0.4830*	-0.2363	1.0000								
LIQ	0.0146	0.0010	-0.1629	1.0000							
CRE	-0.2946	0.2728	-0.1023	-0.3251	1.0000						
ROA	-0.1225	0.0577	-0.1121	0.1881	0.0961	1.0000					
TA	0.2643	-0.7077*	0.1644	-0.3882*	-0.2070	-0.2023	1.0000				
RISK	-0.2910	0.0583	-0.2091	-0.0983	-0.1792	-0.0707	-0.0684	1.0000			
GDP	0.1443	-0.0023	-0.0205	01255	-0.5827*	-0.0398	0.0601	0.1495	1.0000		
PGR	-0.2911	-0.0216	0.0063	-0.0344	0.6703*	0.2966	-0.0731	-0.3818*	-0.5721*	1.0000	
AN	0.1381	0.0156	0.0200	0.0043	-0.3448*	-0.0812	0.0372	0.3101	0.6092*	-0.5452*	1.0000

Source : Prepared by the researcher based on the outputs of the Stata 12 program.

- (*) Statistically significant parameters at a significance level of 5%.

Through the previous table showing the correlation relationship between the study variables, we notice the existence of a statistically significant inverse correlation relationship between the size of the bank and property rights (the bank's reliance on property rights for its financing instead of other external financing sources means that this bank has a small branch network compared to other banks - the size of the bank means that the bank has a large branch network and has a significant number of employees, which is positively reflected in attracting deposits), As a result of the strength of this correlation relationship, we will conduct a multiple linear correlation test to detect the presence or absence of the problem of linear multiplicity. The problem of linear multiplicity appears when 'there is a linear relationship between some or all of the explanatory variables and the correlations between these variables are known as linear multiplicity, or it can be said that this problem occurs when'Two explanatory variables are related by a very strong linear relationship, so it becomes difficult to separate the effect of each explanatory variable from the dependent variable. To detect the existence of this problem or not, we will calculate the coefficient of variance inflation (Variance Inflation Factor) for each of the independent variables. If its value is vif>10, this indicates that there is a problem of linear multiplicity (Muzahim & Hamdoun , 2007, p. 172) The following table shows the results of the variance inflation coefficient (vif) test.

Table 4 : Contrast inflation coefficient (Vif) test results.

Study Variables	Symbol	vif	1/vif
Bank size	TA	3.41	0.293026
Loans	CRE	3.40	0.294390
Population Growth	PGR	3.14	0.318179
Equity	EQ	2.79	0.358590
Economic Growth	GDP	2.28	0.439529
Liquidity	LIQ	2.15	0.465138
Unemployment	AN	1.94	0.516653
Earnings Volatility	RISK	1.41	0.710410
Growth	GROW	1.27	0.785568
Profitability	ROA	1.22	0.817061

Source : Prepared by the researcher based on the outputs of the Stata 12 program.

Through the previous table No (4), which shows the results of the variance inflation coefficient (vif) test, the results of which indicate that the value of the variance inflation coefficient for the independent variables does not exceed the value (10), which confirms that these variables are not related to each other in a linear relationship, that is, there is no problem Linear multiplicity.

4. An applied study of the factors affecting the growth of deposits in Algerian banks.

To study and test the impact of some internal and external factors (economic and social factors) on the growth of deposits in Algerian banks, we will use the method of cross-sectional time series models, which is considered one of the statistical methods and techniques that has gained great interest in the current decade, especially in economic studies Cross-sectional time series data is known as a data set that combines the characteristics of both cross-sectional data and time series. Cross-sectional data describes the behavior of a number of vocabulary words or cross-sectional units over a single period of time, while time series data describes the behavior of a single word over a specific period of time. (AL jamal , p. 269)

4.1. Choosing a study model

To estimate the parameters of the studied model, we will use the Stata 12 program, and use the ordinary least squares (OLS) method, as it is one of the best estimation methods for time series data with cross-sectional data (Pooled Data), by using three methods for analyzing financial data, which are as follows :

- Pooled Regression Model.
- Fixed Effects Model.
- Random Effects Model.

Therefore, our study will use balanced cross-sectional time series models (Balanced Panel Data), with a number of views (NT=07*05) estimated at 35 views (annual), because it is more suitable for our study as it takes into account the changes that occur over time (over a period of five years) on the one hand and on the other hand takes into account the different characteristics of each bank in the sample The following table shows the estimation results using the aggregate regression model, the fixed effects model, and the random effects model.

Table 5 : Results of estimating the factors affecting the growth of deposits in Algerian banks during the period (2019-2023).

Study Variables	Symbom	Pooled Regression Model	Fixed Effects Model	Random Effects Model
Intercept	C	-0.65716	-21.65888	-0.598653
Equity	EQ	0.6083991	-0.9718396	0.5722645
Growth	GROW	0.6478049	0.9683564*	0.6864076*
Liquidity	LIQ	0.3618516	0.5655326	0.3738741
Loans	CRE	-0.02483	1.435144**	0.0321811
Profitability	ROA	0.4900306	-0.4872118	0.458098
Bank Size	TA	0.1016062	1.84883	0.1002906
Earnings Volatility	RISK	-0.1292457	-0.0879828	-0.1278328***
Economic Growth	GDP	-0.0062073	0.0022357	-0.0054055
Population Growth	PGR	-0.5486566	-0.6840951	-0.5776026***
Unemployment	AN	0.0156428	-0.0068347	0.0131472
Number of Observations	-	35	35	35
R-squared	-	0.5725	0.6713	0.5371
F-statistic	-	32.70	3.68	23.27
Prob (F-statistic)	-	0.0003	0.0080	0.0098

Source : Prepared by the researcher based on the outputs of the Stata 12 program.

In order to choose the appropriate model for our study and compare between each of the following models : Pooled Regression Model (OLS), Fixed Effects Model, Random Effects Model, we will conduct two tests :

- The proposed Lagrange multiplier test (Breush and Pagan lagrangien multiplier test for Random effets) for the trade-off between both the aggregate regression model and the random effects model.
- HAUSMAN test for the trade-off between the fixed effects model and random effects.

4.1 Test the trade-off between the aggregate regression model and random effects.

(Breush and Pagan Lagrangian multiplier test for random effects).

In order to choose a trade-off between : the Pooled Regression Model (OLS) and the Random Effect Model, we will perform the proposed Lagrange multiplier test (Breush and Pagan Lagrangian multiplier test for Random Effects), where we will test one of the following two hypotheses :

- H0 : Random effects model.
- H1 : Aggregate regression model.

The following table shows the results of testing the trade-off between the aggregate regression model and random effects.

Table 6 : Test the trade-off between the aggregate regression model and random effects.

Chibar2 (01)	0.00
Prob > Chibar2	1.0000

Source : Prepared by the researcher based on the outputs of the Stata 12 program.

From the previous table, we note that Prob > Chibar2 > 5%, which is statistically insignificant, so the aggregate regression model is appropriate for the study.

4.2 HAUSMAN Test.

To compare the Fixed Effect Model and the Random Effect Model, we will conduct a test (test of Hausman), where we will test one of the following two hypotheses :

-H0: Random effects model.

-H1: Fixed effects model.

The following table shows the results of the HAUSMAN test.

Table 7 : HAUSMAN test results.

Chibar2 (01)	9.40
Prob > Chi2	0.4949

Source : Prepared by the researcher based on the outputs of the Stata 12 program.

From the previous table, we note that the statistical significance value Prob >f is higher than 5%, and therefore we accept hypothesis H0, meaning that the random effects model is appropriate for the study.

4.3 Model quality testing (model validity)

To ensure the quality and validity of the model, we will conduct the following two tests :

4.3.1 Autocorrelation test (test auto corrélation)

Autocorrelation measures the degree of correlation between values of the same variable over a specific period of time and not between one or more variables. Whether there is autocorrelation between the independent study variables (factors affecting deposit growth) can be determined using the test (Woodbridge,2003) (Drukker, 2003) , to detect the presence or absence of an autocorrelation problem in cross-sectional time series models If there is statistical significance to this test, this means that there is a linear correlation problem, then through this test we will test the null hypothesis and the following alternative hypothesis:

-H0 : No first-order autocorrelation problem.

-H1: There is a first-order autocorrelation problem.

The following table shows the results of the autocorrelation test.

Table 8 : Autocorrelation test results.

F (1. 11)	22.513
Prob > F	0.0032

Source : Prepared by the researcher based on the outputs of the Stata 12 program.

From the previous table, we note that the statistical significance value Prob >f is less than 5%, and therefore we reject hypothesis H0 and accept hypothesis H1, meaning that the studied model suffers from the autocorrelation problem.

4.3.2 Heterogeneity of variance test (Heteroskedasticity).

The term Heteroskedasticity consists of two words : (Hetero) meaning different and unequal, and (scedastivity) meaning divergence or spread (Williams, 2025) where a set of variables is considered Heteroskedasticity if there is a subset (banks) that differs in its variables from the rest of the other groups The phenomenon of heterogeneity of variance affects the estimates of the

variance of the model's capabilities, and in this case the tests used become unrealistic and unreliable. By reviewing Table No (09) which shows the steps for conducting the heterogeneity of variance test (testing for Heteroskedasticity), we will test one of the following two hypotheses:

-H0: Equal to Homoskedasticity.

-H1: Heteroskedasticity.

Table 9 : Results of the heterogeneity test (testing for Heteroskedasticity).

LR chi2 (9)	80.82
Prob > chi2	0.0000

Source : Prepared by the researcher based on the outputs of the Stata 12 program.

From the previous table showing the results of the heterogeneity test, we note that the statistical significance value Prob >f is less than 5%, and therefore we reject hypothesis H0 (Homoskedasticity isohomogeneity) and accept hypothesis H1, i.e. the studied model suffers from the Heteroskedasticity problem.

4.3.3 Estimated model and results analysis.

From the results of previous tests, we note that the estimated model (aggregate regression model) suffers from the problems of autocorrelation and heterogeneity of variance (Heteroskedasticity), and therefore we will try to solve these two problems using the error correction method in cross-sectional time series data models (Panel Corrected Standard Errors PCSE), as this method takes into account the problem of autocorrelation and heterogeneity of variance, This method is also one of the best methods for estimating models in cross-sectional time series data where the number of observations is small The following table shows the results of estimating the model.

Table 9 : Determinants of dividend distribution policy in Algerian banks using The (PCSE) method.

Study Variables	**Symbol**	**coefficient**	**Prob**
Constant Term	C	-0.5658173	**0.34**
Equity	EQ	0.5686881	**0.02**
Growth	**GROW**	**0.7205862**	****0.05**
Liquidity	**LIQ**	**0.3821342**	****0.80**
Loans	CRE	0.0683526	**0.38**
Profitability	ROA	0.4630062	**0.07**
Bank Size	**TA**	**0.1000797**	*****0.01**
Earnings Volatility	**RISK**	**-0.1233423**	****0.45**
Economic Growth	GDP	-0.0046376	**0.01**
Population Growth	**PGR**	**-0.5917582**	****0.76**
Unemployment	AN	0.0103257	**0.59**
/	F-statistic	**Number of observations**	**35**

Source : Prepared by the researcher based on the outputs of the Stata 12 program.

(*), (**) And (***) are statistically significant parameters at 1%, 5% and 10%, respectively.

Table No (09) shows the model estimation using the generalized least squares method as follows :

- A test probability value of "F" indicates significance for this model.

There was no statistically significant effect of property rights, loans, profitability, economic growth, or unemployment rate on the growth of deposits in Algerian banks during the study period.

Growth (GROW) : There is a statistically significant direct correlation between the growth rate (growth of total assets) and the growth in the volume of deposits in Algerian banks. The growth rate reflects the development in the size of the bank through increasing the granting of loans, increasing investments, and increasing fixed assets (a larger number of branches), which results in an increase in the profitability of banks and in the strength of their financial position, which is an indicator of the efficiency of the bank's management This expansion in banks' banking activity increases their ability to attract deposits.

Liquidity (LIQ) : This study found a statistically significant direct relationship between liquidity and deposit growth in Algerian banks. The ability of banks to provide sufficient liquidity to meet their obligations is an indicator of the bank's efficiency and experience, which increases depositors' confidence and thus the ability to attract deposits. This differs from the study (Yuksel akay unvan, Ibrahim nandom yakubu, 2020), which found a statistically significant inverse relationship.

Bank size (TA) : There is a statistically significant direct relationship between bank size and deposit growth in Algerian banks. Bank size is an indicator of the bank's financial strength and geographical spread, and reflects the bank's administrative competencies in exploiting its resources, which increases its competitiveness with other smaller banks and thus increases its ability to attract deposits. This is consistent with a study (Richard apau, Athenia bongani sibindi, 2025) : And the study (Shasnil Avinech Chand et al, 2024), and (Yuksel akay unvan, Ibrahim nandom yakubu, 2020)

Profit volatility : There is a statistically significant inverse relationship between profit volatility and deposit growth in Algerian banks. When a bank's profits are unstable, depositors feel a higher level of risk and thus a decline in confidence, which leads to a slowdown in deposit growth or even the withdrawal of deposits, especially short-term deposits.

Population Growth (PGR) : The results of the study indicate that there is a statistically significant inverse relationship between population growth and the growth in the volume of deposits in Algerian banks during the study period, meaning that the higher the population growth rate, the greater the demand for consumer spending such as housing, food...Etc., which reduces the ability of individuals to save, which negatively affects the volume of deposits, and this is consistent with the study (Habtamu alebachew legass, et al, 2021), in which the study found the existence of a statistically significant inverse relationship between demographic growth and deposit growth, while our study differs with Study (Yitbarek Takele Bailey, Hibret Belay, 2022, which found a statistically significant direct relationship between population growth and the growth of deposits in the long term.

5. CONCLUSION

This study aimed to analyze and measure the impact of some factors on the growth of deposits in Algerian public and private banks, based on a set of theoretical and applied studies that attempted to explain and analyze the nature of the relationship between these factors and the growth of deposits This research provided theoretical evidence about the various factors affecting the growth of deposits in banks on the one hand, and on the other hand, it provided applied evidence about the factors affecting the growth of deposits in Algerian banks during the period (2019-2023).

By estimating the model of the factors affecting the growth of the volume of deposits in Algerian banks, it was found that there is no effect of property rights, loans, profitability, economic growth, unemployment on the growth of deposits in Algerian banks, and the greater the growth and growth of the bank (increased investments) as well as the size of the bank, the more this reflects positively on the growth of deposits The ability of banks to provide liquidity is also considered a margin of guarantee that increases depositors' confidence in the bank and thus increases their savings and attracts other savings. The study also found an inverse relationship between profit volatility, population growth and the growth in the volume of deposits.

Recommendations :

Based on the results reached through our study, we propose the following recommendations :

- Improving credit granting standards and increasing the financing ratio for less risky sectors, which reflects positively on stable profits and thus increasing depositors' confidence, while working to diversify sources of income such as developing new services such as

Banks should develop diverse savings products targeting population groups with low income or financial capabilities by providing flexible savings products, with the necessity of investing in services to target the largest possible number of customers.

6. Bibliography List:

AL jamal , y,Z, Model Selection in fixed and Random Longitudinal Data Models,Iraqi Journal of Statistical Sciences,Issue 01,p269.

ali, A. M., & Al Issa, N, S. (2004), Money, Banks and Financial Markets, first edition, Hamed Publishing and Distribution House, Jordan, p. 140.

Djalda, S. (2009), Commercial Banking and Banking Marketing, First Edition, Osama Publishing and Distribution House, Jordan, p. 110.

Drukker, D,M, (2003), Testing for serial correlation in linear panel-data models, The stata Journal, Vol.3, No. 2.

ElNasr, S. S. (2000), The Role of Commercial Banks in Investing Customers' Money, Publisher : University Youth Foundation, Egypt, pp. 52-53.

Hanafi, A. G. (2007), Bank Management, University Publishing House, Egypt, 2007, p. 236.

Zakaria Yahya Al-Jamal, Model Selection in Fixed and Random Longitudinal Data Models, Iraqi Journal of Statistical Sciences, Issue 01, p. 269.

Muzahim, M.Y, & Hamdoun ,M, A. (2007), Diagnosing linear multiplicity and using letter regression in selecting variables for the agricultural investment function in Iraq for the period (1980-2000). Tikrīt Journal of Administrative and Economic Sciences, Volume 3, Issue 8, p. 172.

shaarawi, A. f. (2007), Islamic Banks : A Scientific and Jurisprudential Study of Practical Practices, Second Edition, University House for Printing and Publishing, Bierut, p. 163.

Williams, R. (2025), Heteroskedasticity, Disponible sur : www3.nd.edu consulted on 28/12/2025 à 14 :00.

Chand, S.A. Kumar, R.R&Stauvermann.P.J, (2024), Determinants of bank deposit in a small economy s banking sector ; A study of Fiji, Accounting Research Journal 37 (6), p 574-594.

Pradhan, Radhe Shyam&Paneru, Dipika (2017), Macroeconomic Determinants of Bank Deposit of Nepalese Commercial Banks.SSRN Working Paper.

Habtamu alebachew legass et al, Determinants of commercial banks deposit growth evidence from ethipian commercial banks, Journal of finance and accounting, Vol 9, Issue 6, 2021.

Ibrahim nandom yakubu, Aziza hashi abokor, Factors determining bak deposit growth in Turkey : an empirical analysis, Rajagiri management journal, Vol 14, N° 2, 2020.

Kamugisha Charles, Determinant of bank deposit growth in Rwanda, Business management and economics, Vol 10 (3), 2022.

Modeyin femi et al, Determinable factors affecting commercial banks deposit : the case of Nigeria (2000-2019), Journalof economics, finance and management studies, Volume 4, 2021.

Raghu bir bista, Priyanka basnet, Measuring determinants of time deposit in the commercial banks in Nepal, quantitative economics and management studies (QEMS), Vol 3, N° 1, 2022.

Vu thi Phuong, Le trung thanh, International journal of financial research, Vol 12, N° 2, 2021.

Yitbarek takele bayiley, hibret belay, Determinants of commercial bank deposit growth in Ethiopia, Research in agricultural and applied economics, 2022.

Yuksel akay unvan, Ibrahim nandom yakubu, Do bank-specific factors drive bank deposits in Ghana?, Journal of computational and applied mathematics, 2020.