

The impact of liquidity on the profitability of Algerian banks Case study of the Algerian external bank**تأثير السيولة على مردودية البنوك الجزائرية دراسة حالة البنك الخارجي الجزائري****BOUSTILA ibrahim¹, BENCHIHA kada hichem²**¹ Djillali Liabes University (Algeria), ibrahim.boustila@univ-sba.dz² Djillali Liabes University (Algeria), hichemkada@yahoo.fr**Received:** 01/07/2024**Accepted:** 27/09/2024**Published:** 30/09/2024**Abstract:**

Liquidity management is one of the key aspects of bank's operations, as it significantly affects their profitability, viability, and development. Achieving an effective balance in liquidity management is vital for achieving financial stability, and the positive impact of liquidity management includes enhancing the bank's ability to fulfill financial obligations and make profits sustainably. this research aims to study and analyze the impact of liquidity on the profitability of the Algerian External bank. Try to understand the relationship between the bank's available liquidity and its financial performance, and determine how to manage liquidity to maximize profitability. The results have shown a moderately positive correlation between the level of liquidity available to the bank and its profitability. This suggests that effective liquidity management can contribute to improving profitability. The study used a methodology based on the analysis of the financial statements of the Algerian external bank over a specific period of time. The data was collected from the annual financial reports of the Algerian external bank.

Keywords: Bank Liquidity; Profitability; Bank efficiency; Financial stability, Algerian External bank.**JEL Classification Codes:** E0, E4.**ملخص:**

تسيير السيولة يعتبر أحد الجوانب الرئيسية في عمليات البنوك، حيث يؤثر بشكل كبير على مردوديتها وقدرتها على الاستمرار والتطور. يعتبر تحقيق توازن فعال في إدارة السيولة أمرًا حيويًا لتحقيق الاستقرار المالي، ويتضمن التأثير الإيجابي لتسيير السيولة تعزيز قدرة البنك على تلبية الالتزامات المالية وتحقيق الأرباح بشكل مستدام. يهدف هذا البحث إلى دراسة وتحليل تأثير السيولة على ربحية البنك الخارجي الجزائري. محاولة فهم العلاقة بين السيولة المتاحة لدى البنك وأدائه المالي، وتحديد كيفية إدارة السيولة لتحقيق أقصى قدر من الربحية. وقد أظهرت النتائج وجود علاقة إيجابية معتدلة بين مستوى السيولة المتاحة للبنك وربحيته. هذا يشير إلى أن إدارة السيولة بشكل فعال يمكن أن تسهم في تحسين الربحية. حيث استخدمت الدراسة منهجًا يعتمد على تحليل البيانات المالية للبنك الخارجي الجزائري على مدار فترة زمنية محددة. تم جمع البيانات من التقارير المالية السنوية للبنك الخارجي الجزائري.

كلمات مفتاحية: السيولة البنكية، المردودية، النجاعة البنكية، الاستقرار المالي، البنك الخارجي الجزائري.

تصنيفات JEL : E4, E0

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INTRODUCTION:

Managing bank liquidity in a way that ensures the ability of banks and financial institutions to fulfill their obligations is one of the most prominent challenges facing the financial sector to ensure financial solidity that enables financing the economy and activating financial intermediation effectively ensures profitability at the micro level and stimulates economic growth at the macro level. This contributes to the financing of investment and the achievement of rapid cash turnover, which makes monetary policy more effective within the framework of an economic policy that maximizes profitability and reduces risks and financing costs.

International banking legislation has addressed the issue of bank solvency through the Basel I, II, and III agreements. But what distinguishes the third agreement is its addition of the liquidity management division as an essential part of banking management. This obliges banks and financial institutions to take them into consideration, especially since the risks faced by production, service and financial enterprises (including banks) eventually turn into liquidity risks that may lead to inability to fulfill obligations.

Algerian banks are trying hard to keep up with the international banking legislation developments, as an attempt to emulate the international banks management methods in order to ensure more modernity on one hand and strengthen the rigidity of the Algerian banking system on the other. In this context, Our topic poses a problem related to

How does liquidity impact the profitability of the Algerian external bank.

To answer this problem, we propose the following two hypotheses:

- Higher levels of liquidity does not guarantee higher levels of profitability .
- Algerian External Bank applies short and long-term liquidity ratios.

the study objectives

Our research paper, aims to explain the bank liquidity and its financial meaning, Explain the changes in bank liquidity in figures at the level of the Algerian external bank. Analysis of various bank data such as profitability as well as the relationship between liquidity and profitability.

Research Methodology:

In the first part of the study, we followed the descriptive approach in which we relied on collecting information and defining liquidity and profitability and their various ratios, as for the second part, we relied on studying the case of the Algerian external bank and analyzing various data presented in the annual reports from 2019 to 2022.

1. Liquidity :

1-1 The concept of liquidity:

Bank liquidity refers to the ability of a bank to keep part of its assets in liquid form to varying degrees to comply the increased demand for deposit withdrawals and withdrawals from open credits of customers. This process aims to enable the bank to exploit its deposits to achieve the greatest possible profit while retaining sufficient cash to confront withdrawal requests without delay or disruption in its operations (Mahmoud Assaf, 1986, p. 129)

It is also defined as the bank's ability to provide cash in sufficient quantities and at the RIGHT times to fulfill its financial needs at reasonable costs. A bank is considered to be well-liquid when it can fulfill its cash expenses without delay or high cost, whether it is by keeping liquid cash on hand or by being able to get cash quickly by borrowing or selling assets (Hichem Gabr,

2008, p. 273)

Bank liquidity combines a financial expansion strategy to maximize profitability with financial prudence to ensure that the necessary liquidity is available to fulfill unexpected financial obligations effectively and without disrupting the bank's operations. (Griguiche EL Mehdi Ali, 2006, p. 01)

In short, bank liquidity ensures that the bank can comply its financial obligations easily and effectively, while achieving a balance between exploiting deposits to make profits and retaining the necessary liquidity to fulfill immediate withdrawal requests.

Liquidity is very important, especially for banks compared to non-financial entities.

This is due to the fact that cash flows in and out of banks are very large compared to the underlying capital, which makes it difficult to predict the size and timing of these flows. Banks need sufficient liquidity to comply the financial needs of their customers, be it through deposit withdrawals or borrowing. Constant readiness to meet these needs enhances the bank's reliability and customer confidence, contributes to its financial stability.

Banks maintain high levels of liquidity to be able to cope with constant requests for funds, which provides them with many advantages such as:

- ✓ Enhancing confidence in financial markets: reflects the bank's ability to comply its obligations.
- ✓ Increase confidence among depositors and borrowers: ensures rapid response to their financial requirements.
- ✓ Provide a positive image to the market, analysts and management: shows the strength and the stability of the bank.
- ✓ The ability to comply obligations: enhances the bank's reputation and credibility.
- ✓ Avoid forced sale of assets: protects the bank from possible losses.
- ✓ Keep borrowing costs low: reduces financial expenses.
- ✓ Reducing dependence on the Central Bank: enhances the bank's financial independence (ahlem bouabdelli & ami said hamza, 2014, pp. 101-115)

1. 2. Sources of bank liquidity:

The sources of bank liquidity are multiple and include the resources that a bank can use to provide the required cash quickly. These sources can be classified into:

- ❖ Internal sources:
 - ✓ Cash and cash balances: funds available in the bank's vaults and current accounts in the central bank.
 - ✓ Negotiable securities: government bonds and securities that can be easily sold on financial markets.
 - ✓ Loan collection: recovery of outstanding loans from customers, especially short-term loans.
 - ✓ Fixed deposits: deposits that can be converted into liquidity when needed.
- ❖ External sources:
 - ✓ Interbank market: borrowing money from other banks via the interbank market.
 - ✓ Central bank: obtaining loans and liquidity from the central bank through various windows such as the emergency lending window.
 - ✓ Bond issuance: issuance of debt securities in financial markets to raise funds.
 - ✓ External investments: sale of investments in subsidiaries or shares in other companies.

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- ❖ Additional tools include:
- ✓ Credit facilities: such as credit lines opened with other banks or financial institutions.
- ✓ Repurchase agreements: sale of securities with the agreement to repurchase them in the future.

1. 3. Liquidity ratios:

Short-term liquidity ratio:

it is used to measure the bank's ability to comply its short-term obligations using assets that can be quickly converted into cash.

$$\text{Short term liquidity ratios} = \frac{\text{high quality liquid assets}}{\text{the expected net cash flows during 30 das}} = 100\%$$

Long-term liquidity ratio:

it is a ratio that measures the bank's ability to secure stable resources for banking activity in the long term, allowing it to continue its activity properly and sustainably. This ratio is calculated as the ratio between stable (required) sources of financing and their (existing) uses. This percentage should not be less than 100%. (djelailia nouria & belaachi abdelmalek, 2024)

$$\text{Long term liquidity ratios} = \frac{\text{stable funding sources}}{\text{stable funding sources uses}} = >100\%$$

- Stable sources of financing: these include deposits, equity and other stable funds.
- Uses of stable sources of financing: these include loans, long-term investments and other uses of capital.

The goal of this ratio is to ensure that the bank has sufficient and stable resources to finance its activity in the long term, which protects it from financial risks and contributes to financial sustainability

1. 4. The importance of bank liquidity:

Bank liquidity plays a vital role in the banks operations, and has several benefits, including: (Tarek Abdel Aal Hamada, 2012-2013, pp. 13-14)

- It is considered a strategic goal in addition to achieving profitability to ensure the continuity and growth of the bank.
- Enhance the bank's reputation with customers, suppliers, government agencies, employees and owners, and help maintain and develop this reputation.
- Good liquidity management contributes to easy access to sources of financing and reduces the cost of obtaining them.
- Prevents the presence of unused funds and avoids the Bank falling into cash gaps or cash deficit crises in the short term, reducing financial risks.
- Contribute to increasing the profitability of the bank and its ability to expand and grow.
- Enhances the business community's confidence in the bank's management.

2. Profitability:

2. 1. The concept of profitability:

The bank, like other institutions, aims to achieve high profits to satisfy its shareholders. The bank's profit depends on the difference between gross income and total expenses, as revenues are generated from lending and investment operations, as well as capital gains derived from the appreciation of certain assets. As for expenses, they include administrative and operating expenses, as well as interest paid on deposits, possible capital losses and non-refundable loans. To achieve the principle of profitability, the bank has to reduce its expenses to the minimum possible, in order to achieve the greatest possible revenue. This is done by taking several procedures, such as improving the efficiency of administrative processes and reducing operational costs, in addition to optimizing lending operations and reducing the risk of non-refundable loans.

In short, achieving the principle of profitability requires the bank to achieve the ideal balance between revenues and expenses, take the necessary procedures to increase revenues and minimize expenses as much as possible.

2. 2. Maximizing profitability:

There are various ways to improve the banks profitability, including:
(Hussein djamil, 1996, pp. 56-57)

- Finding new opportunities and new services offered by the bank in diversified sectors and activities, in new geographical areas, for new customers or new services for current customers.
- Raising the prices of some banking services that banking legislation allows to increase, it is known that most of the benefits and commissions are uniform among banks, especially that interest rates, for example, have a minimum and a higher limit, and the price depends on the client's circumstances and the process as well.
- Making full use of the funds and assets available at the bank's disposal, as some of those interested in improving profitability often focus only on rationalizing spending, but we draw attention to the fact that improving profitability can be done through several approaches, such as increasing new opportunities, increasing interest and commission categories, and using the available assets best use.
- Pressure on expenditures in any field, especially in the public expenditures field, which are, an uncontrolled spending field.

2. 3. Profitability ratios:

Profitability ratios are financial indicators that are used to assess a company's ability to make profits. These ratios help measure operational efficiency and the ability to generate profits relative to sales, assets or equity. The most prominent profitability ratios are:

- Gross profit margin ratio: Gross profit is expressed as a percentage of revenue.

$$\text{Gross profit margin ratio} = \frac{\text{gross profit}}{\text{revenue}} * 100$$

- Operating Profit Margin : It measures operating profit as a percentage of revenue.

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$$\text{Operating profit margin ratio} = \frac{\text{operating profit}}{\text{revenue}} * 100$$

- Net profit Margin ratio: Express net profit as a percentage of revenue.

$$\text{Net profit Margin ratio} = \frac{\text{net profit}}{\text{net revenue}} * 100$$

- Return on assets ratio (ROA): It measures the efficiency of using assets in making profits.

$$\text{Return on assets ratio} = \frac{\text{net profit}}{\text{total assets}} * 100$$

- Return on equity ratio (ROE): (Abd AlSalam Lafta, 2012, p. 117) It expresses the return that the company achieves on equity.

$$\text{Income on assets ratio} = \frac{\text{net profit tax After}}{\text{equity ownership}} * 100$$

These ratios help investors and managers in assessing the financial performance of the company and making appropriate investment and management decisions.

3. The relationship between profitability and liquidity:

Banks are able to maintain a significant level of liquidity to fulfill their needs, but this may lead to the loss of profit opportunities that can be achieved by investing in this liquidity. For example, if a bank fully employs its funds in lending, it may make more profit, but this is associated with the risk that customers will not be able to repay loans, which can lead to serious financial problems that may threaten the stability of the bank and lead to its bankruptcy. This reflects the delicate balance between liquidity and profitability, as banks strive for stable profits and sustainable growth to ensure a stable return to shareholders and depositors, thereby strengthening their reputation and customer confidence. Therefore, banks should choose investments that are commensurate with the level of risk they can afford, since profitability is often balanced by the extent of risk exposure, and risky investments can lead to significant losses that negatively affect the bank's reputation and customer confidence in it.

4. Liquidity and profitability at the external bank:

4. 1. The foreign bank of Algeria:

The external bank of Algeria was established on October 01, 1967 in accordance with Decree No. 67-204 in the form of an Algerian company whose capital was initially limited to 20 million Algerian dinars, based in Algiers, it can establish agencies and branches, with the approval of the minister of finance, it can also establish agencies outside the country, and their classification is only by legislative text, it was established on the ruins of the following banking institutions:

- Leonian loan on October 01, 1967.

- General society on December 31, 1967.
- The northern bank of credit April 30, 1968.
- the Industrial Bank of Algeria and the Mediterranean bank on May 31, 1968
- The french Barclays bank in 1968.

With the establishment of the Algerian external bank, the first organizational structure was established and included the following:

- Department of Administrative Affairs.
- The structure of hydrocarbons.
- Department of external Affairs.
- Department of exploitation studies.

4. 2. Administrative management of the Algerian external bank:

In the Administrative hierarchy consisting of several layers, powers and responsibilities are organized hierarchically, where the top of the pyramid is represented by the general director and his advisers working under his direct supervision. They are followed by the General Inspectorate Directorate and the purification and disinfection cell.

At the level of sub-departments, it contains a group of strategic cells, including the organization cell, the accounting Directorate, the automated Information Directorate, the Treasury Directorate, and the control and Management Directorate. These sub-departments operate under the supervision of the sub-directorate general. As for the international context, the international sub-directorate-general includes several directorates such as the Directorate of international relations, the Directorate of external trade and the Directorate of operations with abroad.

Finally, internal management, human resources, legal and administrative matters are organized by the general secretariat, which includes the Directorate of human resources and training, the Directorate of Legal Studies and disputes and the Directorate of General Administration.

Reviewing the annual report and the new organizational structure of the external bank of Algeria for the year 1990, we note that the bank is structured with central directorates and directorates of exploitation networks that link the relevant parties and spread across the entire national territory:

- ✓ Directorate of international relations‘
- ✓ Directorate of foreign trade‘
- ✓ The Directorate of operations with abroad‘
- ✓ the Directorate of commitments with large projects‘
- ✓ The network coordination Directorate‘
- ✓ The Directorate of obligations with small and medium enterprises‘
- ✓ Department of accounting and Treasury‘
- ✓ Directorate of organization and automated information‘
- ✓ Contact directorate‘
- ✓ Directorate of planning‘
- ✓ Department of human resources and formation‘
- ✓ Directorate of Legal Studies and judicial disputes‘

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✓ Directorate of General Administration.

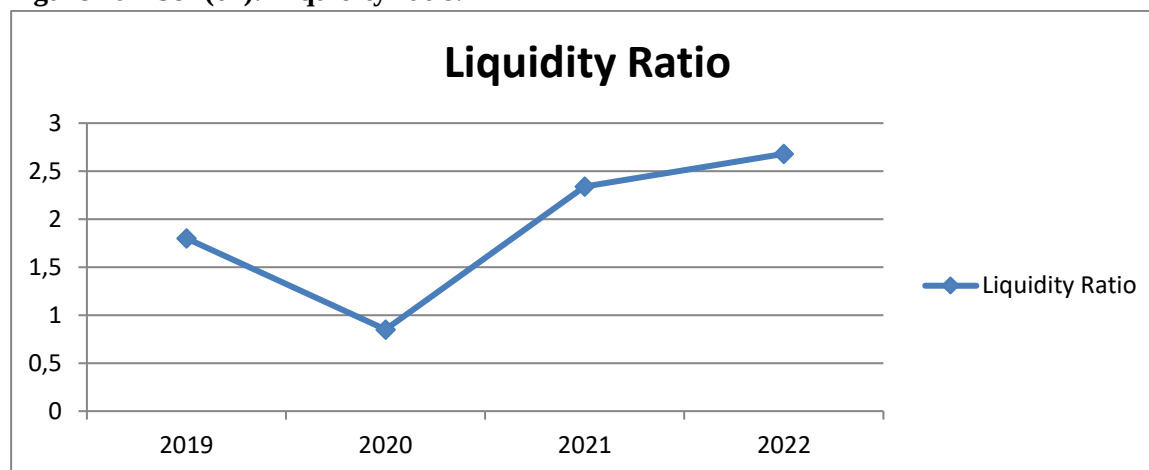
4. 3. The Algerian external bank Liquidity:

Table (1): Algerian external bank liquidity ratios (2019-2022)

Year	2019	2020	2021	2022
Liquidity ratio	1.8	0.85	2.34	2.68

Source: prepared by researchers according to the official website of the Algerian external bank

Figure number (01): Liquidity ratio.



Source: prepared by the researchers based on the table (01).

Comment on the table and figure:

We notice in the table that the short-term liquidity ratios declared by Algerian External Bank over 2019, 2020 and 2022 are greater than one, meaning that the bank's liabilities are more than its assets. Which means also that the bank is far from liquidity risk, except for 2020 where the liquidity ratio is less than one, that means that the bank faces a liquidity risk.

2019 (Liquidity Ratio: 1.8)

In 2019, the liquidity ratio was 1.8, indicating a solid liquidity position. This ratio implies that for every unit of short-term liability, the bank had 1.8 units of liquid assets. The ratio above 1 signifies that the bank was in a healthy state regarding its ability to cover short-term obligations.

2020 (Liquidity Ratio: 0.85)

The liquidity ratio dropped significantly to 0.85 in 2020. This drop indicates that the bank's liquid assets were insufficient to cover its short-term liabilities, with only 0.85 units of liquid assets for every unit of short-term liability. This decline could be attributed to the economic disruptions caused by the COVID-19 pandemic, which may have led to increased withdrawals, decreased deposits, or other liquidity pressures.

2021 (Liquidity Ratio: 2.34)

In 2021, the liquidity ratio rebounded sharply to 2.34. This increase suggests that the bank significantly improved its liquidity position, with more than double the liquid assets required to cover its short-term liabilities. Possible reasons for this improvement could include

strategic financial management, increased deposits, reduced short-term debt, or recovery from the economic impacts of the previous year.

2022 (Liquidity Ratio: 2.68)

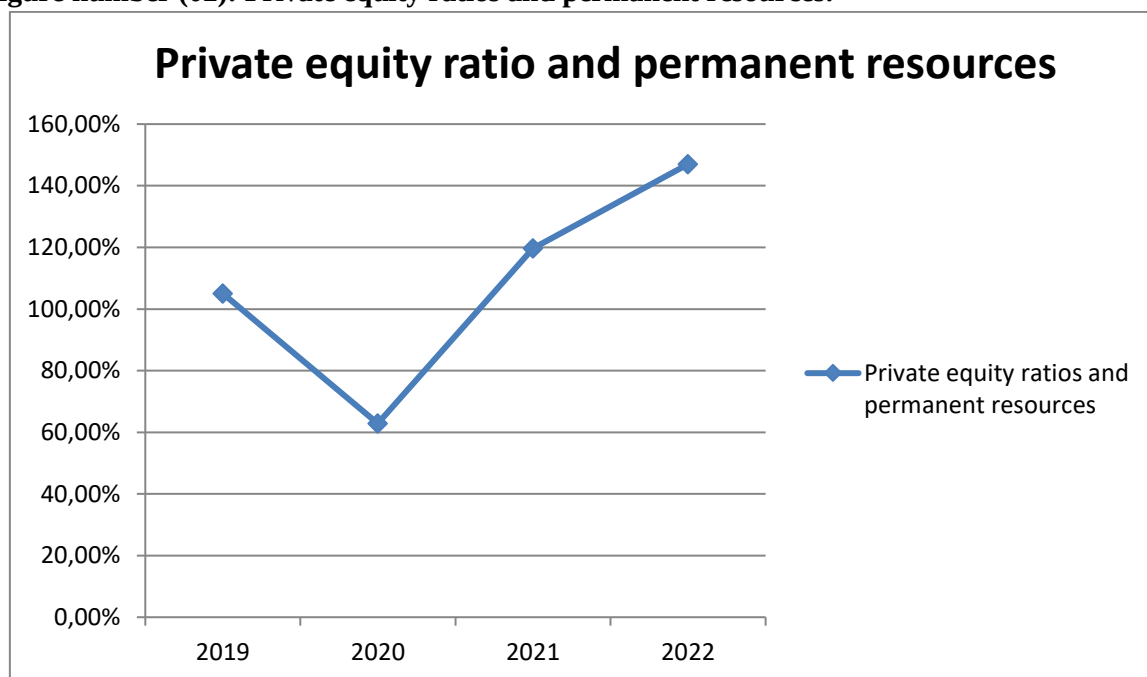
The upward trend continued in 2022, with the liquidity ratio reaching 2.68. This further improvement indicates a robust liquidity position, signifying strong financial health. The bank had 2.68 units of liquid assets for every unit of short-term liability, showcasing its capacity to comfortably fulfill its short-term obligations and maintain financial stability.

Table (2): Private equity ratios and permanent resources (2019-2022)

Year	2019	2020	2021	2022
coefficient of Private equity and permanent resources	105.02%	62.86%	119.68%	147%

Source: prepared by researchers according to the official website of the Algerian external bank

Figure number (02): Private equity ratios and permanent resources.



Source: prepared by the researchers based on the table (02).

Comment on the table and figure:

During the year 2019:

The ratio of 105.02% indicates that the bank has a surplus of own capital and permanent resources compared to its immediate financing needs. This indicates a strong financial health and the presence of a buffer of permanent capital. the bank was well capitalized, which enhances its ability to face financial shocks and support long-term investments.

During the year 2020 :

The significant decrease to 62.86% in 2020 shows a significant reduction in the bank's capital and permanent resources compared to its needs. This decrease may be attributed to the economic effects of the COVID-19 pandemic, such a low coefficient can indicate an increased

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dependence on short-term financing or a reduction in capital buffers, increasing exposure to financial instability.

During the year 2021:

The ratio increased to 119.68%, exceeding the level of 2019. This sharp rise reflects a recovery in the bank's permanent capital base, possibly as a result of strategic capital injections, improved profitability, or better resource management. a ratio exceeding 100% indicates improved financial stability, with sufficient capital to support operations and absorb losses, which indicates a return to a strong financial position after the pandemic.

As for the year 2022:

The ratio increased to 147%, which indicates a stronger position in relation to private capital and permanent resources. this strong rise shows excellent Capital Management and high financial health, which puts the bank in a good position for growth and resistance to future economic fluctuations. Trends and strategic implications: Volatility and recovery: The high volatility between 2019 and 2020, followed by a strong recovery in 2021 and 2022, reflects the bank's ability to adapt to economic challenges. The decline in 2020 is in line with the global economic downturn caused by the pandemic, while the subsequent recovery indicates effective strategic responses.

Table (3): The relationship between liquidity and profitability (2019-2022)

Year	Liquidity Ratio	Solvency ratio	capital & permanent resources ratio	Return on assets ratio	Return on equity ratios	Profitability ratio
2019	180%	22.15%	59.60%	2.33%	13.20%	15.53%
2020	85%	23.52%	62.86%	2.18%	14.01%	16.19%
2021	234%	28.32%	120%	1.72%	16.04%	17.76%
2022	268%	29.64%	147%	0.93%	9.04%	9.97%

Source: prepared by researchers according to the official website of the Algerian external bank

Table analysis:

As can be seen from the table, The liquidity ratio in 2019 was 180%, indicating the bank's good ability to cover its immediate financial obligations. In 2020, this percentage dropped to 85%, which may indicate liquidity challenges during this year. In 2021, the percentage increased to 234 %, and continued to increase to 268% in 2022. This increase indicates a significant improvement in liquidity, which enhances the bank's ability to fulfill its immediate financial obligations. .

The solvency ratio shows continuous improvement over the years, increasing from 22.15 in 2019 to 29.64% in 2022. This increase indicates an improved ability of the bank to comply its long-term obligations, reflecting greater financial stability. The ratio of permanent capital and resources in 2019 was 59.60%, which is a good percentage because it exceeds the minimum required. And in 2020, it increased to 62.86%, indicating the strengthening of financial stability. In 2021 and 2022, the ratio increased significantly to 120% and 147%, respectively, indicating that the bank has become more dependent on capital and permanent resources to finance its activities, reflecting greater Financial stability..

The return on assets ratio decreased from 2.3% in 2019 to 0.9% in 2022. This continued decline is indicative of the bank's low efficiency in using its assets to generate profits.

The return on equity ratio increased from 13.20% in 2019 to 14.01% in 2020, then 16.04% in 2021, but it dropped sharply to 9.04% in 2022, indicating a decrease in profitability. These results reflect the bank's success in enhancing its financial stability, but it faces challenges in maintaining profitability and efficiency in the use of assets, which necessitates a review of management strategies to achieve a better balance between financial stability and sustainable profitability.

The profitability ratio increased slightly in 2020 and 2021, but significantly decreased in 2022 to 9.97% . These changes may be caused by several factors, including changes in the market, management strategies or other economic factors. The bank needs to strike a balance between maintaining liquidity, increasing solvency, increasing profitability and efficient use of assets to achieve sustainable profits.

Conclusion:

The axis of Good Banking Management represents the central point in the bank's control of financial analysis tools This analysis generally expresses the bank's ability to collect resources and convert them into loans within the framework of its financing activity, and this is reflected in a set of ratios that assess its activity and profitability, in addition to its ability to manage risks effectively. This analysis also includes taking into account the proper conduct of the bank's interests, which leads to a good overall performance that enhances its financial stability. Banks seek to maximize their profitability through the optimal management of their assets and liabilities, which reduces the risks associated with banking operations and ensures the achievement of a profit margin that achieves profitability and keeps it away from risk. The bank should control financial obligations by taking into account the due dates of resources and uses, in order to ensure effective liquidity management that achieves solvency and profitability at the same time. Managing the bank's assets efficiently contributes to achieving high performance and good profitability, which supports the bank's continuity in the market and strengthens its position in the financial system. The bank is also obliged to insure, maintain and protect its assets from risks associated with public regulation and banking activity in particular. In general, it can be said that liquidity and solvency risks come as an inevitable result of the bank's management in accordance with the requirements of banking legislation and the requirements of banking supervision, especially the requirements of healthy financial ratios. Therefore, the bank must have a highly liquid balance sheet structure that can meet its obligations at all times, thereby achieving sustainable solvency and profitability that enhances its financial stability. These points reflect the importance of effective liquidity and solvency management, and emphasize that good control of bank financial analysis tools is a fundamental basis for achieving financial stability and sustainable profitability of the bank in the current financial environment.

❖ Hypothesis testing:

- **The first hypothesis:**

Higher levels of liquidity does not guarantee higher levels of profitability This hypothesis is correct because profitability is affected not only by liquidity, but there are other factors such as available assets, return on equity, and others This is what we discovered in 2019, where the liquidity ratio was estimated at 180% and profitability at 15.53%, and although

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the liquidity ratio increased significantly in 2022, reaching 268%, profitability decreased to 9.97%.

- **The second hypothesis:**

Algerian External Bank applies short and long-term liquidity ratios. although they may differ slightly in nature or details from those applied by global banks. These ratios are aimed at ensuring the availability of sufficient amounts of liquidity to comply the immediate and future obligations of the bank, which contributes to its financial stability and ability to fulfill the needs of customers and the market in general.

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