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Assessing liquidity in Algerian banks using the CAMELS supervisory system: “A study of bank X”

تقييم السيولة في البنوك الجزائرية باستعمال نظام الرقابة CAMELS: "دراسة حالة البنك X"

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Abstract:

The Bank of Algeria has set up mechanisms intended to supervise Algerian banks, within the framework of the banking rating system inspired by the CAMELS system. This tool makes it possible to assess and manage all banking risks, including liquidity risk. Our study aims to evaluate the liquidity of the bank X using the CAMELS banking supervision system. We seek to identify the limitations and potential weaknesses of this system when assessing liquidity. Following a descriptive and analytical study, the results indicate that bank X's liquidity is currently low. These results reflect a liquidity risk linked to ineffective management of this risk. Accordingly, we have put forth recommendations to address two aspects. Firstly, we suggest that bank X enhances its liquidity management practices. Secondly, we propose improvements to the banking supervision process at the national level to effectively manage banking risks overall.

Keywords: Assessing liquidity, Algerian Banks, CAMELS, Supervisory system, Bank X.

JEL Classification Codes: G200,G210.

ملخص:

وضع بنك الجزائر آليات تهدف إلى الإشراف على البنوك الجزائرية في إطار نظام التنقيط المصرفي المستوحى من نظام *CAMELS*. تتيح هذه الأداة تقييم وإدارة جميع المخاطر المصرفية بما في ذلك مخاطر السيولة. تهدف دراستنا إلى تقييم سيولة البنك *X* باستخدام نظام الإشراف المصرفي *CAMELS*، حيث نسعى من خلال بحثنا إلى تحديد القيود ونقاط الضعف المحتملة لهذا النظام عند تقييم السيولة. بعد دراسة وصفية وتحليلية ، تشير النتائج إلى أن سيولة البنك *X* منخفضة حاليًا، مما يعكس مخاطر سيولة مرتبطة بالإدارة غير الفعالة لهذا الخطر. وبناءً عليه قدمنا توصيات على مستويين. أولاً ، نقترح أن يعزز البنك *X* ممارسات إدارة السيولة لديه. ثانيًا ، نقترح إدخال تحسينات على عملية الرقابة المصرفية على المستوى الوطني لإدارة المخاطر المصرفية بشكل عام.

كلمات مفتاحية: تقييم السيولة، البنوك الجزائرية، CAMELS، نظام الرقابة، البنك X.

تصنيفات JEL : G200، G 210.

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Introduction:

In order to align itself with international practices and strengthen banking supervision, especially in light of the continuous changes that the international banking system has witnessed, from banking liberalization, the expansion of bank activity beyond the borders of countries, the expansion of technology within the framework of electronic banking, and the diversity in the nature of risks and their high levels (عبادي وسام، بويهي محمد, 2018), the Bank of Algeria has decided to set up a banking rating system "SNB"[1] whose purpose is to detect upstream the fragility of banks and financial institutions and ensure the stability of the Algerian banking system. It is particularly inspired by the American CAMELS model, and was developed with the technical assistance of the United States Treasury and the International Monetary Fund (IMF).

This system has enabled Algerian banking supervisory authorities to create a national regulatory framework that sets out management standards that all licensed banks operating in Algeria must adhere to. To ensure these standards are met, banking supervision is conducted through a dual control monitoring method that includes both on-site and off-site inspections.

The Bank of Algeria has had a mission to ensure the stability of the country's banking and financial system since its inception, and this remains its objective today. To achieve this, the Bank has implemented measures to enhance its regulatory framework, specifically in the area of banking supervision, by adopting the CAMELS system.

Our emphasis will be on addressing the following issue within this particular context: During banking supervision, how is the liquidity component of Algerian banks appraised using the CAMELS rating system?

A series of questions emerge from this issue, including:

- How does the CAMELS system assess the strength of Algerian banks in terms of liquidity?
- Why did the Bank of Algeria decide to implement the CAMELS banking rating system?

Upon addressing this problem, it becomes possible to confirm or refute the following assumptions:

-The CAMELS banking supervision system can determine the financial position of Bank X in terms of liquidity.

We seek to assess Bank X's liquidity through the implementation of the CAMELS banking supervision system. Our main purpose is to pinpoint inadequacies and deficiencies of the system with respect to evaluating the liquidity of financial institutions.

Specifically, this study aims to help regulators and Bank X executives make informed decisions to improve their liquidity management and overall performance. The results obtained from this study will make it possible to better understand the factors that influence the liquidity of bank X, to identify opportunities for improvement and to propose recommendations to strengthen the management of its liquidity, in accordance with standards and regulations. applicable regulatory requirements

In addition, this study will make a valuable contribution to academic research

[1] SNB：système de notation bancaire

concerning the utilization of the CAMELS system to evaluate the liquidity of Algerian banks, specifically. The outcomes of our research can serve as a guide for future studies regarding this subject.

In order to achieve the objectives of our research, we conducted a descriptive study on the CAMELS prudential regulatory system, as well as an analytical case study of the evaluation method of bank X in terms of liquidity according to the approach CAMELS during an on-site supervision mission.

1- The Fundamentals of the CAMELS rating system

The CAMELS system is a bank performance assessment framework, used by banking regulators to determine whether financial institutions meet safety and solvency standards. The acronym CAMELS represents six factors which are: Capital, Asset, Management, Earnings, liquidity, Sensitivity to market risk. (Abdennour & Houhou, 2008)

1-1- Definition of the CAMELS rating system

The "CAMELS" rating system is a tool for evaluating the performance and solvency indicators of banks and financial institutions. In addition, this mechanism is highly regarded for its ability to offer flexibility in conducting both on-site and off-site examinations. Consequently, it serves as a primary model for assessing the performance of banks. It was introduced in the early eighties in 1979 (CAMEL at the time) by US supervisory authorities. In December 1995, a new and sixth component was added relating to sensitivity to market risks, the system then became CAMELS. (MENCHIF & CHEMLAL, 2018).

In 2013, the Bank of Algeria adopted the CAMELS system, developed with technical assistance from the US Treasury. Each component of CAMELS is assessed during an "on-site" control mission based on an analysis of quantitative data and a qualitative assessment of the institutional framework of the banking institution. The nature and scope of the mission are determined according to the risks incurred by the audited institution (size and risk profile).

1-2- Components of the CAMELS system

The CAMELS system consists of six elements, in detail are as follows:

- Capital adequacy: is a measure used to evaluate how financially secure a bank is. It is determined by considering the level of risk associated with the bank's assets such as credit risk, market and operational risk. (Caton W. , 1994) Bank supervisors regularly evaluate the sufficiency of this capital to ensure the bank's stability;
- Asset quality : remains a key indicator of an institution's financial viability; "poor asset quality remains the main cause of bank failure". (Christopoulos & and others, 2011) . The assessment of asset quality involves evaluating the credit risks connected to a bank's portfolios. This evaluation includes analyzing the bank's capability to identify, quantify, monitor, and manage credit risks, while also considering any provisions made for potentially non-performing loans.
- Management: It is the essential part of the six CAMELS components and the most

complex due to its qualitative nature which is difficult to assess. The qualitative assessment of management involves examining the organization of the bank under three facets: governance, organization and internal control. This indicator "proves that the management team and the board of directors have the ability to identify, measure and control risks while ensuring safe, healthy and efficient operations". (Ruchi Gupta, 2014)

- Earnings Ability: Profitability encompasses the financial gains and operating profits generated by the institution within a specific timeframe, considering the risks undertaken and associated costs.

The consistency of a bank's earnings is a vital factor in assessing its overall performance. Evaluating the quality of earnings helps determine the bank's ability to generate consistent profits, sustain future earnings, and foster growth. (Nimalathasan , 2008).

- Liquidity: Bank liquidity refers to a bank's capability to fulfill its financial obligations by having sufficient cash or assets that can be readily converted into cash. (Direction Générale de l'Inspection Générale-Banque d'Algérie, 2014). In the event of a liquidity crisis, there is a high likelihood of a bank run occurring. Therefore, maintaining an appropriate level of liquidity is vital for banks as it directly impacts their earnings. (Anteneh , 2018).
- Sensitivity to market risks: It is closely linked to factors such as fluctuations in interest rates, exchange rates, and equity values. It refers to the degree to which changes in these factors can negatively impact the capitalization and profitability of banks and financial institutions. This component is not assessed by Algerian supervisors due to the absence of negotiation activities between banks.

2- Overview of the bank X

Our bank called "X" for the sake of confidentiality, is a public bank under Algerian law created in 1966 in the form of a joint stock company, and approved by the Governor of the Bank of Algeria. Its head office is located in Algiers.

Bank X currently has a share capital of forty-five billion five hundred million Algerian dinars (45.500.000.000 DA). It has a large network which currently has more than 25 agencies spread over the major cities of the country.

3- The evaluation processes

During an on-site control mission, the liquidity of a bank is evaluated within the framework of the CAMELS rating system. This evaluation is carried out following three phases: the preparation phase, the implementation phase, and the conclusion phase.

The inspectors in charge of assessing the liquidity of a bank according to the CAMELS framework must comply with the regulations in force in the exercise of their on-site control mission:

- Instruction No. 07-11 of December 21, 2011 on the liquidity coefficients of banks and financial institutions of the Regulation n°11-04 of May 24, 2011 relating to the identification, measurement, management and control of liquidity risk;
- Regulation No. 14-01 of February 16, 2014 on the solvency coefficient applicable to banks and financial institutions;

- Regulation n°14-02 of February 16, 2014 relating to large risks and participations;
- Regulation n°14-03 of February 16, 2014 relating to the classification and provisioning of receivables and commitments by signature of banks and financial institutions.

3-1- The preparation phase

The preparation phase involves identifying the process for conducting and organizing the on-site inspection mission. It breaks down into the following steps:

- Establishment of the mission order, which constitutes the materialization of the mandate given by the General Directorate of General Inspection (DGIG)[1] to the head of mission to carry out an investigation in the controlled bank;
- Consultation of the permanent file is a procedure allowing the head of mission and the inspectors to become acquainted with the information relating to the bank inspected. This consultation follows a contact between the head of the DGIG and that of Parts Control Department (DCP)[2] in order to have an idea of the main risk areas of the bank. In this case, inspectors must review certain documents, such as: the report of the last on-site mission, the most recent Periodic evaluation Report (RPE), the most recent Normalized Quantitative Report, the latest capital and permanent resources coefficient, the last four declarations of the permanent coefficients, liquidity management procedures, financial statements (balance sheet and off-balance sheet), and the breakdown of loans by rate;
- Establishment of a framework note which represents a summary of the results of the exploitation of the documents and which summarizes all the strengths and weaknesses on which the mission is required to focus its attention.

3-2- The realization phase

This involves the launch and implementation in the field of control work according to the work program and predefined tools. This phase goes from the observations to the various evaluations (qualitative and quantitative evaluation) carried out on the basis of the analyzes of documents and data until the formalization of the observations.

3-2-1- Qualitative assessment

The qualitative analysis of the liquidity of bank X mainly focused on examining the organization and use of the reports of the statutory auditors, the report on internal control, and the report on the measurement and risk monitoring.

The Treasury Department, attached to the Deputy General Finance Department, manages the liquidity of bank X. The latter has a set of procedures that describe the principles and methods of liquidity management as well as the missions and the powers of the Treasury Department.

[1] DGIG: Direction générale d'inspection générale
[2] DCP: Direction du Contrôle sur Pièces

In addition to the bank's information system, the treasury department uses several interfaced software programs which enable daily management of liquidity and the generation of internal and regulatory reports. These tools generate statistical reports at regular intervals, such as daily, weekly, monthly and quarterly.

Findings

- Existence of vacancies at the level of the treasury department, in particular the position of head of the reporting department which is currently filled by the director (cumulation of tasks);
- The bank does not have an Asset Management Laibility Cmmittee (ALCO);
- Some regulatory reports are not automated (manual entry) such as the report relating to the calculation of the permanent capital resources coefficient, which exposes the bank to a risk of error;
- Contrary to the provisions of articles 24 and 25 of regulation No. 11-04 of 05/24/2011, the bank does not have an emergency and crisis management plan;
- Absence of formalized stress tests, however simulations are carried out according to the internal and external situation;
- Lack of forward-looking liquidity management, particularly in the medium and long term;
- Absence of a long-term liquidity risk management strategy;
- Liquidity risk has not been audited in the last three years.

3-2-2- Quantitative evaluation

The quantitative assessment focuses on the processing and analysis of accounting and financial data relating to regulatory reporting as well as the verification of the coefficients calculated by the bank.

3-2-2-1- The balance sheet structure of bank X:

The following table presents the financial situation of bank X for the 2022 financial year:

Table (1) : Evolution of the main indicators of bank X. **U: KD**

	31/03/2022	30/06/2022	30/09/2022	31/12/2022
Accounting equity [5]	248 516 219	237 884 524	251 293 655	260 399 999
Customer deposits	1 536 295 012	1 649 316 331	1 645 926 076	1 652 853 202
Customer loans	1 477 511 164	1 661 077 841	1 818 885 077	1 924 397 838
Balance sheet total	2 319 621 034	2 438 113 826	2 451 709 620	2 632 448 004

Source: DCP/DGIG - Bank Of Algeria**-**

[1] They include: capital, funds for general risks, report to new, reserves and result.

- As of 12/31/2022, bank X's equity represents 10% of the total balance sheet, it is mainly made up of reserves at 41% followed by funds for general banking risks (FRBG)[1] at 27%;
- The bank's equity capital estimated on 03/31/2022 at 248.5 billion dinars fell by 4% on 06/30/2022, this drop is explained by the distribution of the retained earnings account in the form dividends in favor of the majority shareholder, the public treasury;
- As of 12/31/2022, the bank's deposits represent a rate of 63% of the total balance sheet. They experienced an evolution of 7% from March to June 2022, then stagnated until 31/12/2022.
- As of 31/12/2022, loans granted to customers represent 73% of the total balance sheet of bank X, they have increased by 30% during the year 2022;
- The balance sheet total increased by 13% during the period from March to December 2022, mainly explained by the increase in the volume of loans.

a- Customer loans [2] :

The amount of credits as of 12/31/2022 amounts to 1924.39 billion DA which represents 73% of the bank's total balance sheet. In the following table, we represent the evolution of credits by type:

Table (2): Evolution of credits by type **U: KDA**

Types of credit	31/03/2022	30/06/2022	30/09/2022	31/12/2022
Short term credit (1)	202 088 321	180 867 070	217 618 460	244 509 103
Medium-term credit (2)	120 530 457	127 125 320	133 603 147	514 711 885
Longt term credit (3)	1 154 892 386	1 353 085 451	1 467 663 470	1 165 176 850
Total customer loans (1)+(2)+(3)	1 477 511 164	1 661 077 841	1 818 885 077	1 924 397 838

Source: DCP/DGIG - Bank Of Algeria -

- We note from the table above, a domination of long-term credits, which amount to 1,165.17 billion DA as of 12/31/2022, i.e. 61% of the bank's total credits;
- In second position, come the medium-term credits which represent at 31/12/2022 514,71 billion dinars or 27% of the total credits granted to customers;
- In last position, short-term loans represent 13% of total loans at 31/12/2022.

[1] FRBG : Fonds pour Risques Bancaires Généraux
[2] Interest amounts are included

Findings

Bank X focuses on long-term credits (more than 7 years) and specializes in the financing of large government projects, in particular with syndicated (syndicated) credits where it plays a leading role.

The following table represents the evolution of credits by classification

Table (3): Evolution of credits by classification **U : KDA**

Libellé	31/03/2022	30/06/2022	30/09/2022	31/12/2022
Current receivables (1)	1 315 962 801	1 490 375 634	1 654 740 773	1 770 303 382
Classified receivables (2) of which:	161 548 363	170 702 207	164 144 304	154 094 456
Potential problem debts	3 689 670	2 061 592	3 300 194	28 506 513
Very risky debts	17 551 462	18 217 493	15 610 549	2 188 492
Compromised debts	140 307 231	150 423 122	145 233 561	123 399 451
Total receivables (1)+(2)	1 477 511 164	1 661 077 841	1 818 885 077	1 924 397 838

Source : DCP/DGIG - Bank Of Algeria

- Current receivables constitute 92% of total receivables from customers, i.e. an amount of 1.770,30 billion dinars as of December 31, 2022. They experienced a positive evolution throughout the 2022 financial year.
- Doubtful debts totaled 154,094 billion dinars as of December 31, 2022, representing 8% of all debts. However, it is important to note that 80% of these receivables are compromised, mainly due to unpaid receivables held on private sector companies.

Findings

- Overall, the bank's portfolio is healthy as problem assets, ie NPLs[1], represent only 8% of the bank's total claims.
- Although current receivables are predominant, the majority of non-performing receivables are compromised, indicating both a lack of effort on the part of the bank in terms of recovery and a significant risk of non-recovery of receivables. Some files are also being processed at the legal level, which may explain this situation.

The table below shows the five largest credit recipients from bank X:

Table (4): The first five risks by beneficiary **U : KDA**

Beneficiary	Amount	% of total top 50 large exposures by beneficiaries	% of total credit
Customer 1	1 160 720 610	76,36%	**60,32%**
Customer 2	100 968 711	6,64%	5,25%
Customer 3	32 726 921	2,15%	1,70%
Customer 4	28 146 827	1,85%	1,46%

[1] NPL: Non-Performing loan

Customer 5	25 434 413	1,67%	1,32%
Total of the 5 biggest beneficiaries	1 347 997 482	88,68%	70,05%
Total top 50 recipients	**1 520 126 870**		**78,99%**
Total customer loans	**1 924 397 838**		

Source : DCP/DGIG - Bank Of Algeria

- The fifty (50) main beneficiaries represent 79% of total bank X customer loans as of December 31, 2022;
- On the same date, the five (5) main beneficiaries represent 89% of the total of the fifty beneficiaries and 70% of the total of customer loans;
- The first major beneficiary alone represents more than 76% of the total of fifty beneficiaries and more than 60% of the total loans granted to customers.

Findings

There is a high concentration of customer loans granted to a single public company, which exposes the bank to a very high credit risk in the event of the insolvency of this customer. In order to reduce this risk, it is important that the bank diversifies its loans more and avoids concentrating on a single large beneficiary.

b- Debts to customers:

Total customer deposits amounted to 1.652,85 billion DA as of December 31, 2022, representing 63% of the bank's total balance sheet. Please refer to the table below for the evolution of customer deposits in fiscal year 2022:

Table (5): Evolution of deposits of bank X **U : KDA**

	31/03/2022	**30/06/2022**	**30/09/2022**	**31/12/2022**
Demand deposits (1)	770 312 761	796 748 077	788 622 534	799 701 892
Term deposits (2)	476 644 213	551 197 704	543 689 533	539 326 672
savings accounts (3)	201 245 233	210 113 743	217 421 567	220 001 356
Others (4)	88 092 805	91 256 807	96 192 442	93 823 282
Total customer deposits (1)+(2)+(3)+(4)	1 536 295 012	1 649 316 331	1 645 926 076	1 652 853 202

Source : DCP/DGIG - Bank Of Algeria

- The bank's demand deposits amount to approximately 799,7 billion DA as of December 31, 2022, representing more than 48% of total customer deposits and 30% of the bank's total liabilities;
- During the fiscal year of 2022, the bank's deposit resources did not register any increase.

Findings

- Most of Bank X's deposit resources come from demand deposits, which means that 30% of its resources are considered unstable. This exposes the bank to a very high liquidity risk;
- The bank has difficulty obtaining resources (deposits) in the market.

The table below shows the five largest depositors of bank X:

Table (6): The five largest depositors. **U : KDA**

Denomination	Amount	% of total from the first 30 depositors	% of total deposits
X 1	191 359 066	22,20%	11,58%
X 2	174 302 444	20,22%	10,55%
X 3	74 444 000	8,63%	4,50%
X 4	58 175 458	6,75%	3,52%
X 5	46 188 200	5,36%	2,79%
Total of the first 05 depositors	544 469 168	63,15%	32,94%
Total of the first 30 depositors	**862 165 288**		**52,16%**
Total customer deposits	**1 652 853 202**		

Source : DCP/DGIG - Bank Of Algeria

- As of December 31, 2022, the first thirty (30) depositors of bank X alone represent more than 52% of the bank's total deposits;
- On the same date, the top five depositors represented 63% of the total of the top thirty depositors, and 33% of total customer deposits;
- Also, as of December 31, 2022, the two (02) largest depositors represent respectively 12% and 11% of the bank's total deposits.

Findings

The high concentration of deposits represents a significant liquidity risk for the bank in the event of unexpected withdrawals of these deposits.

3-2-2-2- Net cash:

Net cash is a financial parameter that assesses a bank's ability to have cash at a given time. It represents the variation between receipts and disbursements. The table below presents the evolution of the net cash of bank X:

Table (7): Evolution of the net cash of bank X. **U : KDA**

Libellé	31/03/2022	30/06/2022	30/09/2022	31/12/2022
Cash box (1)	3 771 376	4 219 936	3 998 618	3 692 343

Bank of Algeria (2)	280 415 137	288 055 953	239 828 220	210 318 608
Public Treasury and Postal Cheque Account (3)	25 428 216	15 305 288	15 444 833	22 144 216
Net cash (1)+(2)+(3)	309 614 729	307 581 177	259 271 671	236 155 167

Source : DCP/DGIG - Bank Of Algeria

- The bank's cash is 90% made up of assets with the Bank of Algeria;
- Bank X's cash decreased by 24% between the first and last quarter, from 309,6 billion DA on 31/03/2022 to 236,15 billion DA on 31/12/2022.

<u>Findings</u>

Following a call for funds from the public authorities to finance major national projects, the bank had to mobilize part of its assets with the Bank of Algeria in order to ensure this financing.

3-2-2-3- Liquidity ratio

The liquidity ratio is a short-term indicator that must exceed 100%. It is calculated and transmitted quarterly by financial institutions and banks to the DCP of the DGIG. This ratio is subject to the rules of regulation 11/04 of 24/05/2011 and instruction 07/11 of 21/12/2011 and is obtained using the following equation:

$$Liquidity\ ratio = \frac{Short-term\ liquid\ assets}{Short-term\ payable\ liabilities} \geq 100\%$$

It should be noted that, due to the economic situation linked to the Covid19 pandemic, the Bank of Algeria has decided to reduce this ratio to 60% in accordance with instruction N ° 05-2020 of April 06, 2020, which provides exceptional measures to relax certain prudential provisions applicable to banks and financial institutions. This instruction has been extended until 31/03/2022.
The table below shows the change in the liquidity ratio of bank X for the 2022 financial year:

Table (8): Evolution of the liquidity coefficient. **U : KDA**

	31/03/2022	**30/06/2022**	**Evolution %**	**30/09/2022**	**Evolution %**	**31/12/2022**	**Evolution %**
Short-term liquid assets (1)	553 218 360	469 257 639	-15%	252 880 256	-46%	259 176 541	2%
Short-term liabilities (2)	335 003 076	340 135 228	2%	349 191 340	3%	405 010 501	16%

One-month liquidity ratio (1)/(2)	**165%**	**138%**	-16%	**72%**	-48%	**64%**	**-12%**

Source : DCP/DGIG - Bank Of Algeria

- One-month liquidity ratios were 165%, 138%, 72% and 64% respectively in the four quarters of fiscal 2022;
- The one-month liquidity ratio decreased by 16% between the first and second quarters, by 48% between the second and third quarters, and by 12% between the third and last quarters;
- The analysis of the drop in the liquidity coefficient is explained by :
    - ✓ Between June and September, the bank experienced a decline in both its sight deposits with the Bank of Algeria and its time deposits with the Bank of Algeria, the maturity of which does not exceed one month. This decrease was the result of a call for funds from the public authorities;
    - ✓ Between September and December, the bank recorded an increase in borrowing on the interbank money market.

<u>Findings</u>

During the period of September to December 2022, the bank failed to comply with regulatory rules regarding the one-month liquidity ratio. It recorded ratios of 72% and 64% respectively.

3-2-2-4- The quantitative threshold:

The quantitative threshold is a ratio calculated by the ratio of credits to deposits, which demonstrates the financing capacity of the bank, and is calculated as follows: (Direction Générale de l'Inspection Générale-la Banque d'Algérie, 2014)

$$\textbf{Quantitative threshold} = \frac{Total\ client\ loans}{Total\ customer\ deposits} \leq 100\% \ldots (10)$$

The quantitative threshold of Bank X calculated for the year 2022 is represented as follows:

Table (9) : The quantitative thresholds of Bank X. **U : KDA**

	31/03/2022	**30/06/2022**	**30/09/2022**	**31/12/2022**
Total loans and receivables (1)	1 477 511 164	1 661 077 841	1 818 885 077	1 924 397 838
Total customers deposits (2)	1 536 295 012	1 649 316 331	1 645 926 076	1 652 853 202
Quantitative thresholds (1)/(2)	**96,17%**	**100,71%**	**110,51%**	**116,43%**

Source : DCP/DGIG - Bank Of Algeria -

The bank's funding capacity on 31/03/2022 was 96%. It then exceeded 100% for the next three quarters, reaching 101%, 111% and 116% respectively.

Findings

During the last two quarters, the bank's deposits did not cover its loans, demonstrating that its funding capacity is insufficient.

3-2-2-5- Debt capacity:

The debt capacity of a bank represents its ability to generate liquidity from its total assets, calculated as the ratio between current liabilities and total assets: (Direction Générale de l'Inspection Générale-la Banque d'Algérie, 2014)

$$\text{Debt capacity} = \frac{Resources\ < 1\ an}{Total\ assets} \ \ldots (11)$$

The debt capacity of bank X for the financial year 2022 is calculated as follows:

Table (10) : The debt capacity of Bank X. **U : KDA**

	31/03/2022	30/06/2022	30/09/2022	31/12/2022
***Resources* <1 an (1)**	929 096 978	961 711 982	952 661 108	1 011 221 171
Total Assets (2)	2 319 621 034	2 438 113 826	2 451 709 620	2 632 448 004
Debt capacity (1)/(2)	40,05%	39,44%	38,86%	38,41%

Source: DCP/DGIG - Bank Of Algeria -

During the 2022 fiscal year, the bank's debt capacity ranged from 38% to 40%.

Findings

During the 2022 fiscal year, Bank X's debt capacity approached 40%, which reflects an acceptable ability of the bank to generate short-term liquidity.

3-2-2-6- Equity and Permanent Resources Ratio (EPRR):

This ratio, also known as the transformation ratio, is determined by the provisions of regulation n° 04/04 of July 19, 2004. It must be above 60% and is calculated annually using the following equation:

$$Transformation\ Ratio = \frac{Equity\ +\ Permanent\ Capital}{Stable\ assets}$$

Bank X's transformation ratio for the 2020, 2021 and 2022 financial years is given below:

Table (11) : Evolution of the transformation ratio. **U : KDA**

Libellé	31/12/2020	31/12/2021	Evol %	31/12/2022	Evol %
Total Permanent Resources (1)	497 180 946	628 234 676	26,36%	646 763 952	2,9%

Stable assets (2)	806 584 326	1 039 408 624	28,87%	1 308 153 895	25,9%
EPRR (1)/(2)	**62%**	**60%**		**49%**	

Source : DCP/DGIG - Bank Of Algeria -

The bank's transformation ratio stands at 62%, 60%, and 49% for the years 2020, 2021, and 2022, respectively. The decrease observed in 2022 is mainly due to the increase in the bank's assets, particularly in the area of loans granted to customers.

Findings

The bank has violated regulatory provisions regarding the transformation ratio in 2022, which stands at 49%. This violation is a result of the increase in the bank's lending to customers, while the bank's resources have not seen a significant increase.

3-3- Conclusion phase

The conclusion phase involves assigning a score to the component evaluated by inspectors, based on the findings identified during the qualitative and quantitative evaluation.

The main findings identified by the mission are:

- The one-month liquidity ratio as of 31/12/2022 is 60%, which is below the required standard, and the bank is in violation of the regulatory provisions related to this ratio;
- The quantitative threshold exceeds 90%, indicating that the bank's deposits do not fully cover its loans;
- The debt capacity is 40%, indicating that the bank has reasonable capabilities to raise funds;
- 48% of the resources of bank X are constituted of demand deposits, thus its resources are mainly volatile;
- There is a concentration on resources and uses..
- There is no liquidity forecasting management, particularly in the medium and long term.

Based on these observations, and using the liquidity rating matrix, as of 12/31/2022, we will obtain:

Table (12) : The liquidity rating matrix of bank X.

Criteria / Rating	1 Very Satisfactory	2 Satisfactory	3 Not very satisfactory.	4 Weak	5 Déficient
Liquidity ratio	**>120%**	Between 110% to 120%.	Between 100% to 110%.	Between 80% to 100%.	**Less than 80%**
Quantitative threshold	Credit/deposit less than 60%.	Credit/deposit varies between 60% to 70%.	Credit/deposit varies between 70% to 75%	Credit/deposit varies between **75% to 80%**	Credit/deposit Exceeds **80%**
Debt capacity	The institution has the ability to mobilize liquidity up to 20% of its assets	The institution is generally capable of mobilizing equity funds up to 10% of its assets	The institution has not planned to resort to contingency funds	Access to financing sources is limited to refinancing by the Bank of Algeria	The institution does not have access to financing sources
Asset structure	The institution has the ability to easily convert a large portion of its assets into cash	The institution has a rather limited amount of easily convertible assets	Relatively few assets can be made liquid	The asset portfolio contains very few liquid assets	The assets are frozen and cannot generate liquidity
Liability structure	The liabilities are basic and stable	The institution has a low amount of purchased funds	The liabilities show signs of instability due to their maturity dates and sources	**10% of the liabilities are considered volatile-debt**	More than 10% of the liabilities are considered volatile
Equity management planning	The institution has good liquidity management	The institution has relatively low-performing management tools	The institution has few cash management tools and manages its treasury in an improvised manner	The management of the treasury is very informal	The institution does not have a forward-looking liquidity management approach

Source : DCP/DGIG - Bank Of Algeria-

As a result of inadequate liquidity management, Bank X received a score of four (4) for its liquidity component. Consequently, the DGIG will conduct another audit of Bank X within a year to assess its progress in addressing the identified liquidity issues.

Conclusion:

The CAMELS bank rating system is a valuable tool employed in banking supervision to evaluate the overall health and financial stability of banks and financial institutions. By analyzing six key criteria, it effectively identifies the strengths and weaknesses of these institutions, providing valuable insights into their performance and risk profiles. This method serves as a comprehensive assessment framework to ensure the soundness and stability of the banking sector.

In 2013, the Bank of Algeria implemented enhancements to its Bank Rating System, drawing inspiration from the American CAMELS system. The objective was to enhance the early detection capabilities in identifying weaknesses within banks and financial institutions. This system embodies a banking supervision approach implemented by the General Directorate of General Inspection, which takes the form of a comprehensive documentary and on-site control mission. It entails a thorough evaluation of six key factors: capital adequacy, asset quality, management, performance, liquidity, and market risk sensitivity. The assessment encompasses both qualitative and quantitative aspects.

When it comes to banking risks, liquidity management, also known as ALM (Asset Liability Management), has a direct and significant impact on the bank's operations. That's why we have chosen to focus on evaluating the liquidity component of Bank X in our case study.

Following a comprehensive qualitative and quantitative analysis, our hypothesis was validated as the CAMELS rating system effectively assessed the liquidity situation of Bank X. Consequently, we have assigned a rating of four to reflect the bank's liquidity position.

This finding indicates that Bank X is confronted with a substantial liquidity risk, primarily stemming from inefficient risk management practices in this area.

Through our research, we have made the following noteworthy observations:

- The CAMELS system serves as a methodology for assessing the performance of banks and financial institutions. This evaluation is carried out by the Banking Commission, primarily in cases where errors or issues have been identified. The assigned ratings are indicative of the financial strength exhibited by these institutions during the specific review period;
- The CAMELS approach utilizes a limited number of on-site visits to evaluate the liquidity risk of individual banks. As a result, there are extended gaps between each assessment mission.

Following these findings, some recommendations can be proposed to strengthen the banking supervision process in terms of risk management in general:

- Transitioning to the Supervisory Review and Evaluation Process (SREP) to review the CAMELS rating system will be a significant step. The Permanent Control Department (DCP) will oversee the management of the new rating system, ensuring its continuous relevance. As a result, the assigned ratings for banks will carry greater significance and undergo regular updates;
- Implementing the ICAAP (Internal Capital Adequacy Assessment Process) requires banks to establish a comprehensive process for evaluating the sufficiency of their capital in relation to their risk profiles. This ensures that banks have a systematic approach in place to assess and manage their capital needs, considering the risks they face;

- The implementation of ILAAP (Internal Liquidity Adequacy Assessment Process) mandates banks to conduct a thorough evaluation of their liquidity position based on their unique risk profile. This ensures that banks have a robust process in place to assess and manage their liquidity needs, taking into account the specific risks they face.

To further advance research on this topic, it is important to explore future perspectives. We suggest conducting a study to examine the impact of liquidity assessments on the financial health of Algerian banks. This research could also analyze the liquidity management practices of banks in relation to international standards, such as the Basel III regulations. Additionally, exploring alternative methods of liquidity assessment specific to the Algerian context would be beneficial. These research directions will contribute to a deeper understanding of liquidity dynamics and promote the development of sound liquidity management practices in Algerian banks.

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