

The Impact of Liquidity and Efficiency on Bank Performance or Profitability: Evidence from Afghanistan

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DOI: <https://doi.org/10.63163/jpehss.v3i4.732>

Abstract

This paper aims to find out the effects of efficiency and liquidity on the profit of commercial banks in Afghanistan. The dependent variable of profitability was measured by different financial indicators, the indicators were: return on assets (ROA), return on equity (ROE), operating profit ratio (OP), net interest margin (NIM), net interest income (NII). The two independent variables of efficiency and liquidity were measured in form of cost to income ratio (CI), loans to total assets (LA), total customer deposits to total assets (CDA), and loans to deposits ratio (LD). Data of 10 commercial banks was collected between 2016 and 2022, and a variety of statistical analysis methods along with financial measures were applied to the data to verify the research hypotheses. The results of the research showed that the H1, H2 and H5 were rejected showing that in some cases efficiency and liquidity did not influence the certain profitability measures substantially. Conversely, the hypothesis numbers three and four were accepted, which implies that efficiency, as well as liquidity, had a stronger impact on the other profitability measures. On the basis of these findings, the study has suggested that the following are some of the recommendations that should be made to the Afghan commercial banks in as far as liquidity enhancement is concerned: developing more effective strategies with regard to liquidity management by the Afghan commercial banks. Through this way, they will be able to better their position so that they enhance profitability. Additionally, the paper proposes that some more studies should be done in this direction to investigate more aspects in playing the role of influencing bank performance in Afghanistan and also the permanent outcomes of efficiency and liquidity on the profitability.

Keywords: Profitability, Assets, Deposits, Equity, Liquidity, Loans.

Introduction

Banks are the backbone of financial life because they are intermediaries of the financial system. Banks also help in funding different projects and investments in different sectors through the amount deposited in them. They are used to link deficit units (borrowers) and surplus units (depositors) to facilitate effective allocation of capital. Banks seek to gain the maximum possible returns and at the same time reduce the risks that may be involved by mobilizing financial

resources. To run economically stable and muscle up the economy is needed by the capacity of these people to balance between the requirements of their two goals of running maximization of profit and managing risk requirements.

Afghanistan has recorded some important developments in communication technologies and globalization in its banking sector. Also, the number of branches and agents of the bank has increased significantly hence leading to an increase in the transactions being carried out in banks. This expansion has in its turn increased the competition among the banks especially with regard to the quality and diversity of the services provided by the respective banks. Consequently, now both the necessity and the need to concentrate on the banking sphere has appeared a great duty. An efficient banking system is vital as it serves as the backbone of a nation's economy. Banking efficiency encompasses various aspects, with economic efficiency (EE) being the most significant one. EE is achieved by minimizing input costs to produce goods and services (Goyal et al., 2019; Sakouvogui and Shaik, 2022). Technical efficiency (TE) focuses on maximizing the utilization of available resources to achieve desired outputs (Goyal et al., 2019; Sakouvogui and Shaik, 2022). Therefore, TE is a fundamental condition for achieving EE in banks (Goyal et al., 2019; Sakouvogui and Shaik, 2022).

In the contemporary financial landscape, the performance and profitability of banks are of utmost importance, not only for the stability of the banking sector but also for the overall economic development of a country. Among the numerous factors influencing bank performance, liquidity and efficiency stand out as crucial determinants. The efficient allocation and utilization of resources, along with maintaining adequate liquidity levels, are vital for banks to remain competitive and resilient in the face of economic uncertainties and market fluctuations. This introduction will explore the impact of liquidity and efficiency on bank performance, with a focus on evidence from Afghanistan. Liquidity, often defined as the ability of banks to meet short-term obligations promptly, is fundamental for ensuring financial stability. Banks must maintain a balance between liquidity and profitability, as excessive liquidity can lower profitability, while insufficient liquidity can lead to financial distress or even insolvency (Allen & Santomero, 2001). In Afghanistan, a country with an evolving financial sector and a challenging economic environment, the management of liquidity is particularly critical. High liquidity buffers are essential for Afghan banks to cope with the inherent risks associated with the country's fragile economic conditions, including political instability and security concerns. Efficiency, on the other hand, refers to the ability of banks to minimize costs while maximizing outputs. Efficient banks can provide better services to customers, generate higher returns for shareholders, and contribute more effectively to the economy (Mester, 1996). In Afghanistan, where banking infrastructure and regulatory frameworks are still developing, enhancing efficiency is imperative for banks to expand their outreach, improve financial inclusion, and foster economic growth. Efficiency gains can be achieved through various measures, such as technological advancements, operational streamlining, and effective risk management practices.

The relationship between liquidity, efficiency, and bank performance is multifaceted and dynamic. While liquidity ensures banks' ability to honor their commitments and absorb unexpected shocks, efficiency determines how well banks utilize their resources to generate income and manage risks. Research indicates that a trade-off exists between liquidity and profitability, with highly liquid banks often sacrificing some profitability to maintain liquidity reserves (Berger & Bouwman, 2009). However, efficient banks can mitigate this trade-off by optimizing their operations and resource allocation. In Afghanistan, where the banking sector is relatively young and faces numerous challenges, understanding the interplay between liquidity, efficiency, and performance

is essential for fostering a sound and stable financial system. Moreover, with the recent geopolitical shifts and the withdrawal of international forces, Afghanistan's economy is undergoing significant transformations, further emphasizing the need for robust and efficient banking practices. Despite the significant role that the new liquidity standard plays in the efficient operation of the banking system, few studies have explored the relationship between the Liquidity Coverage Ratio (LCR) and bank efficiency (Bitar et al., 2015). Moreover, this gap is compounded by the reliance of these studies on standard accounting ratios to measure bank efficiency (Chortareas et al., 2012; Pasiouras, 2008), which, according to Halkos and Salamouris (2004), may not provide the most effective evaluation of banks' efficiency levels. Additionally, existing literature suggests that bank efficiency is influenced by various institution and market-specific factors (Jiménez-Hernández et al., 2019). Thus, one can claim that any extensive study of the efficiency of banks has to take into account an interaction of numerous factors, including the elements of liquidity, such as Liquidity Coverage Ratio (LCR). The lack of literature, which investigates the changing effect that the associative relationship between LCR and efficiency of banks experience due to these variables, highlights this shortcoming of current literature, highlighting the necessity to conduct research into this area in greater detail. Central banks of both developed and developing countries of the world have been able to dominate the global financial system status quo given the rising issues within the financial system. They have already served as the shield of the first rangers in order to stabilize the financial markets and protect the economy. A central initiative has been a relaxation of monetary policy through a cut in policy rates, normally to very low levels, in particular in advanced economies. As well, in emerging economies and those with lower income half of the central banks have been decreasing the key rates to jump drive economic action. Additionally, open market operations have enabled the central banks to provide even more liquidity to the financial system, in addition to which the liquidity and soundness of the banking system are also strengthened. These are some of the actions that underscore the imperativeness of central banks in controlling financial crisis and ensuring the performance of the economy despite the turbulence. Likely, this study aims to contribute to the existing literature by examining the impact of liquidity and efficiency on bank performance in Afghanistan. By analyzing empirical evidence from Afghan banks, this research seeks to provide insights into the factors influencing bank profitability and efficiency in the Afghan context. Additionally, this study will assess the implications of liquidity management and operational efficiency for the resilience and sustainability of Afghan banks in the face of economic uncertainties. The commercial banking business in Afghanistan is very influential in the economy and banking system of the entire country and one that has a lot of impacts on other sectors of the economy. The role of these banks is to support industries in terms of growth and development through contribution of necessary financial services as well as capital movements. The growth and development of commercial banking industry depends on various factors and one of the most pertinent ones is the increase of profitability. Profitability needs to be in tandem with the general economic and financial development of the nation so that the banks become viable and sustainable with the changes in market environment.

In Afghanistan, commercial banks are present in high numbers and are major players in both public and private investment activities that anchor economic activities in various areas. They hold in trust huge amount of deposits which may be by individuals and firms, government, and other institutions as well as investment houses. The management of these deposits helps the banks to promote economic growth, offer liquidity to the businesses and aid in the development of the infrastructure which is vital in the further development of the Afghan economy.

Banking Scenario in Afghanistan

Banking in Afghanistan has undergone significant changes over the past few decades, influenced by both internal and external factors. The country's banking sector, which was virtually non-existent during the Taliban regime, has experienced rapid growth since the early 2000s, following the fall of the Taliban regime and the subsequent influx of international aid and investment (Afghanistan Banks Association, 2023). This growth was further facilitated by regulatory reforms aimed at modernizing the banking system and promoting financial inclusion (Ahmady, 2022).

Despite this progress, Afghanistan's banking sector continues to face numerous challenges. The security situation remains volatile, with ongoing conflict and political instability posing significant risks to financial institutions (World Bank, 2023). Moreover, the economy is highly dependent on external aid and remittances, making it vulnerable to fluctuations in international assistance and geopolitical developments (Ahmady, 2022).

In terms of liquidity management, Afghan banks often struggle to maintain adequate liquidity levels due to the limited availability of high-quality liquid assets and the volatile nature of the country's economy (World Bank, 2023). While liquidity ratios have improved in recent years, banks still face challenges in effectively managing liquidity risk, particularly in the absence of a well-developed interbank market (Ahmady, 2022). Efficiency in the Afghan banking sector also remains a concern. Operational inefficiencies, including manual processes, outdated technology, and a lack of skilled personnel, hinder banks' ability to deliver quality services and generate sustainable profits (IMF, 2023).

Furthermore, compliance costs associated with anti-money laundering (AML) and combating the financing of terrorism (CFT) regulations impose additional burdens on banks, affecting their overall efficiency (World Bank, 2023). In this context, the relationship between liquidity, efficiency, and bank performance in Afghanistan is complex. While maintaining adequate liquidity is essential for ensuring financial stability, excessive liquidity can erode profitability, particularly in a challenging operating environment like Afghanistan (Ahmady, 2022). Similarly, inefficient operations can lead to higher costs and reduced profitability, further exacerbating liquidity challenges (IMF, 2023).

Managing credit and liquidity risks is a crucial function within the banking sector. Credit risk refers to the potential economic loss stemming from counterparties or borrowers failing to fulfill their contractual obligations. It can also be defined as the risk associated with a decrease in the credit quality of debtors leading to default during transactions (Crouhy, Galai, & Mark, 2012). Liquidity risk, on the other hand, involves the inability to raise necessary cash to meet debt obligations or to fulfill cash, collateral, and margin requirements of counterparties, including meeting capital withdrawals.

A failure to effectively manage liquidity positions can render a bank incapable of meeting depositors' demands for cash withdrawals or other debt obligations promptly. Thus, liquidity risk, along with credit risk, constitutes the primary types of risks banks face as financial intermediaries. In the current dynamic and intricate business environment, banks are exposed to various risks in their financial and operational transactions. Therefore, the risk management divisions and their mitigation tools are crucial for safeguarding the assets from these risks. Typically, banking activities involve transforming short-term liabilities or customer deposits into long-term investments for profit. However, this liquidity transformation exposes banks to various risks, necessitating prudent regulations and effective management.

Prudential regulatory requirements mandate that banks maintain minimum capital and liquidity to absorb unexpected losses. As of the second quarter of 2022, demand deposits constituted 72.21%

of total deposits in Afghanistan's banking sector (ABA, 2022). With such a high proportion of demand deposits, long-term financing by banks may increase their exposure to liquidity risk. Additionally, political and security instability, coupled with rising nonperforming loans, can degrade asset quality and undermine a bank's profitability.

Significance of the study

The significance of this research lies in its potential to provide valuable insights into the relationship between liquidity, efficiency, and bank performance in Afghanistan's banking sector. Through analyzing these factors, the study will contribute to understanding how financial health and operational efficiency affect profitability in a developing economy. This research can guide policymakers, regulators, and financial institutions in making informed decisions to improve banking practices and enhance overall financial stability. Additionally, the findings could serve as a benchmark for future studies on financial performance in similar emerging markets, fostering growth and sustainability in the sector.

Problem Statement

The problem addressed in this study is the lack of comprehensive understanding regarding the impact of liquidity and efficiency on bank performance in Afghanistan's banking sector. Despite the growing importance of financial stability, limited research has been conducted to analyze how liquidity levels and operational efficiency affect the profitability of Afghan banks. This gap is particularly crucial for a country with a developing economy like Afghanistan, where financial institutions face unique challenges. By investigating the relationship between liquidity, efficiency, and profitability, this study aims to provide insights that could enhance the operational effectiveness of Afghan banks and contribute to their financial stability.

Objective of the study

This paper mainly aims to explore the impact of liquidity and efficiency on bank performance or profitability: evidence from Afghanistan.

Theoretical Framework and Literature Review

Theoretical Framework

Liquidity Ratio: The ratio depicts the measure of liquidity in an institution throwing light over its power to cover short term liabilities. Liquidity may be measured relative to various ratios, such as current ratio and quick ratio that are most popular.

Profitability Ratio: It is the ratio that gives the information on the effectiveness of an institution to earn profits off its sales or investments. Some important profitability ratios are:

Return on Assets (ROA): The indicator measures the profitability of a company in comparison to total assets. It is an indication of how well the company uses its resources to make profits as it is measured by dividing annual profits and total assets it uses as a percentage and is commonly known as return on investment.

Return on Equity (ROE): It is the measurement of the profits of the company against its total amount of equity owned by the stock holders. It is computed as the net profit of a company divided by the shareholders classic equity.

Operating Profit: Operating profit is the profits related to purely to the business activities of a company. It is a calculation which does not take into consideration the payment of the interest and taxes and does not consider any non-operating profits as well, that is profits received because of investing in various other businesses.

Net Interest Income: It represents the difference between the interest gained by a bank when it lends out the money it borrows and the interest it pays to the bank depositors. It represents core income earned through lending activities of the bank as they have been calculated as the difference between interest paid and interest earned. The normal assets in a bank are personal and business loans, mortgages, and securities with most of the liabilities being customer deposits.

Net Interest Margin: The Net Interest Margin indicates how well a firm makes returns out of its investments as compared to the cost of the investments. A negative value is an indication of bad investment decisions, and the interest cost of the investment is higher, in comparison to returns, on the investments.

Cost-to-Income Ratio: This is the ratio obtained by dividing operating expense of an organization with the operating income of the same period. The operation costs are fixed costs (rent, insurance, utilities) and administrative costs (salaries, marketing etc.). The operating income includes revenue sales, fee revenue and interest revenue.

Operational Efficiency: This is measure of how well a firm makes profits in proportion to the costs that it is operating under. The increase in operational efficiency implies higher profitability because this points to the fact that the firm would get more returns or revenue against the same or less expenditure than its alternatives. Operation efficiency of a financial system is attained when transaction fee and costs are reduced.

Total Loans to Total Assets (Total Debt to Total Assets): This is a ratio that shows the degree of financing of assets through loans of a company. The greater the ratio, the greater the financial leverage in a firm implying that it is risky.

Loan-to-Deposit Ratio: It is a ratio applied in determining the liquidity of a bank with the total loans it has in comparison to the total deposits of the bank. It aids in the evaluation of the bank in the capacity of covering its loans with available deposits.

Empirical studies

The Relationship between Liquidity Risk and Credit Risk

One study by Acharya, Pedersen, Philippon, and Richardson (2010) examined the relationship between liquidity risk and credit risk during the financial crisis. They found evidence of a strong positive association between liquidity risk and credit risk, suggesting that liquidity problems exacerbate credit risk and vice versa.

Similarly, a study by Ho and Saunders (1981) analyzed the relationship between liquidity risk and credit risk in the context of commercial banks. They observed that banks with higher liquidity risk tend to have higher credit risk, as they may face difficulties in meeting their obligations in times of financial stress. Another empirical study by Rime and Striuh (2011) investigated the relationship between liquidity risk and credit risk in the European banking sector. They found that banks with higher liquidity risk also tend to have higher credit risk, indicating a positive relationship between the two risks.

Furthermore, research by Dang, Kim, and Shin (2018) explored the relationship between liquidity risk and credit risk in emerging market banks. They discovered that higher liquidity risk is associated with higher credit risk, particularly during periods of economic downturns or financial

crises. Ghenimi (2017) and Ahmad (2019) investigated the mutual relationship between credit and liquidity risks using panel vector auto-regression and TSLS models. Liquidity is represented by the ratio of liquid assets and credit risk is proxied by the impaired loan ratio. From a statistical perspective, the data show that LR and CR do not have a mutual relationship. On the other hand, credit risk has a detrimental impact on bank liquidity. Hassan, Khan, and Paltrinieri (2019) looked into the relationship between credit and liquidity risks with reference to conventional and Islamic banks. The difference between customer obligations that depositors can quickly withdraw and assets is how liquidity risk is calculated.. Charge-offs, provision for NPL, and credit recovery are used to assess credit risk. The study used the three-stage least square method's simultaneous structural equation, and the findings indicated that LR and CR are negatively correlated. Abdelaziz (2022) investigated the relationship between CR and LR using the regression model that appeared to be unrelated. The loan-to-deposit ratio is utilized as a proxy for liquidity risk, and the research demonstrates that as credit risk rises, the bank's liquidity position becomes less liquid, which increases liquidity risk. An increase in non-performing loans (NPLs) results in increased loan losses and impairment, which lowers the bank's liquidity position.

McLeod (2016) investigated the reasons behind the Kabul Bank's failure. The analysis shows that illegal lending caused Kabul Bank to lose a substantial sum of money. The financial system was severely strained by the Kabul bank crisis. Customers of the bank "Run on Bank" after they learned that their savings had been taken. Customers withdrew \$500 million in deposits as a result in a matter of days. The bank faces a liquidity risk as a result of this illicit financing. In order to avert another failure and the financial system's collapse after the Kabul bank collapse, the Afghan government contributed \$825 million from the central bank reserve. In 2011, the bank underwent a restructuring and rebranding, adopting the name New Kabul Bank, under new government ownership. In addition to resulting in financial losses, the Kabul Bank crisis damaged customers' confidence in the banking industry and had a detrimental social impact (Kabul A., 2012). However, the banks are unable to win over depositors' trust so that they can conduct business with them via the banks.

Kurnia et al. (2020) stated that financial ratios have an effect on firm value, while Husna and Satria. (2019) stated that Return on Asset (ROA) has an effect firm value, while Debt to Asset Ratio (DAR) and Current Ratio (CR) does not affect firm value.

Jihadi, M. et al. (2021) carried out a research to explore how the firm value was affected by liquidity, activity, leverage, and profitability, and the presence of corporate social responsibility (CSR) disclosures drove their results. This was because the results of the study showed that the liquidity, activity, leverage, and profitability ratios are significant contributors to firm value which was reflected in the initial hypothesis of the study. Moreover, the study also has value on the role of CSR disclosures in firm value and how it can be further used to increase the value of a firm in the market because of the presence of clear and open disclosure of corporate social responsibility.

Maria et al. (2020), The paper aimed to analyze the determinants of profitability and bank efficiency in the Iberian Peninsula. In a bid to attain the envisaged goal, the sample size used in the study comprised a sample of 66 Portuguese and Spanish banks. The findings show that the performance of the bank in terms of profitability and efficiency is sensitivity not only to the internal management variables but to external macroeconomic factors as well. Another important finding that can be added to the literature on Iberian banking sector refers to the non-linear association between the performance and the size of the bank. More particularly, the study finds out that there exists a positive non-linear relationship between bank size and profitability whilst negative non-linear relationship exists between bank size and efficiency. This implies that as banks continue to

expand, the more likely that the profitability of the banks could increase but efficiency could go down in banking sector where there were complex linkages between the size and performance. Dahiyat et al. (2021), The study aimed to examine the impact of liquidity and solvency management on the financial performance of Jordanian manufacturing companies listed on the Amman Stock Exchange. The statistical analysis of the study demonstrates that the effect of the independent variable and control one, namely, liquidity management, solvency management, and company size, are statistically significant and have an effect on financial performance. But in the inspection of the detailed outcomes of the hypotheses, it was discovered that the liquidity management possesses minor negative impact on the financial output. This implies that liquidity is a key issue but its connection with the financial performance could be not as clear and significant as it is assumed originally, and it might depend on other variables or differ in various situations. Research conducted by Sujan et al. (2020) aimed to investigate the effect of banks' liquidity on its profitability.

Sharif Hassan (2021) has conducted a comparative analysis on the financial performance of 1st, 2nd and 3rd generation banks of Bangladesh from 2008 to 2019. The implications of the hypothesis indicate that all the three generations of banks are financially healthy as shown in the results in as far as profitability ratios, liquidity ratios and capital adequacy ratios are concerned. This implies that the banks are doing an excellent job in terms of how they handle their finances and this is portrayed through excellent overall performance. Muriithi and Muigai (2017) examined how the operational risk influenced the profitability of commercial banks in Kenya. They used cost-income ratio as a measure of the operational risk and the profitability as a measure of the return on equity (ROE). The findings pointed out that there is a negative relationship between the cost-income ratio and bank profitability in a short run and in a long run. This implies that an increase in the cost of operation in comparison to revenue is likely to reduce the level of profitability.

In a similar study, Ekinici, R., and Poyraz, G. (2019) observed a correlation between credit risk and financial performance where authors used Return on Assets (ROA), Return on Equity (ROE) as the proxies of financial performance indicators and the Non-Performing Loans (NPLs) as the indicator of credit risk. They uncovered that there is a negative association between credit risk and ROA as well as the ROE. This means that an increment of non-performing loans has a tendency of reducing the returns on assets as well as equity returns which explains the negative impact of the credit risk on the economic performance of banks.

Research Methodology

In order to achieve the main objectives and answer the questions of the study the research data were collected which are based on secondary data, obtained from the annual reports of sample banks and other information have been collected from the websites of the different articles and papers. The descriptive analytical method was used, which is commensurate with the nature of this study. Collecting, describing and analyzing data of the financial statements of the sample banks were applied and then using the appropriate statistical method to analyze the data based on a program SPSS. The study sample was selected from the commercial Afghan banks which are 10 banks for the period 2016 to 2022. The descriptive analytical method and a set of statistical tools and financial indicators were used to test the validity of its hypotheses, as well as simple regression, correlation analysis and ANOVA were used to test the influence of independent variables on the dependent variables and determine the most influential variable.

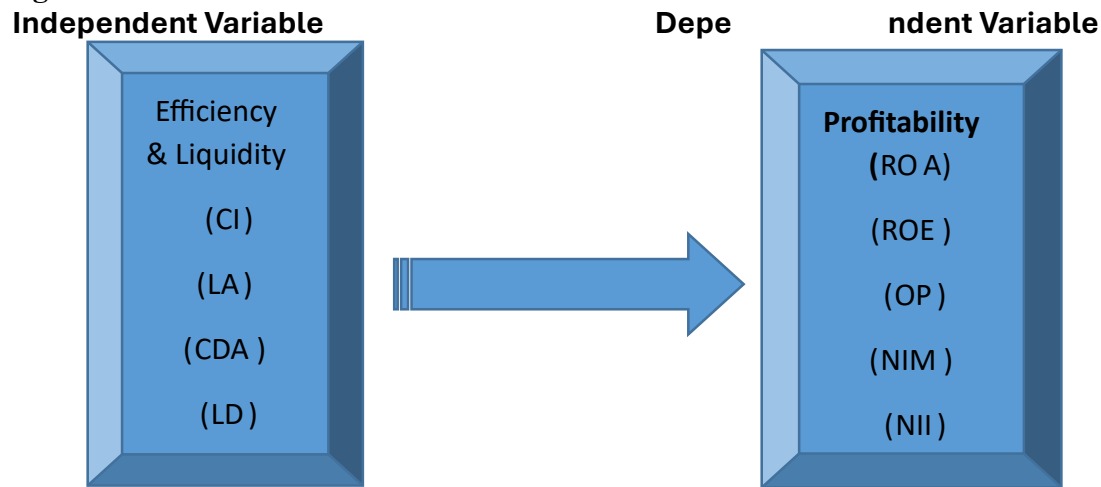
Table 1: The Afghanistan Banking Sector

Name of the Bank	Year of establishment
State Owned Bank	
Kabul Bank (New Kabul Bank)	2004 (Restructure, 2011)
Pashtany Bank	1954
Bank Millie Afghan	2003
Private Sector Banks	
Afghanistan International Bank	2004
The First Micro Finance Bank	2004
Azizi Bank	2006
Afghan United Bank	2007
Maiwand Bank	2008
Ghazanfar Bank	2009
Bakhtar Bank (IBA	2009

Source: https://en.wikipedia.org/wiki/Category:Banks_of_Afghanistan

The following conceptual framework was formulated to show the study variables:

Figure.1



Based on the previous literatures, the following four models are formulated and presented here:

$$ROA = \beta_0 + \beta_1 CE/NI + \beta_2 LA/TA + \beta_3 CD/TA + \beta_4 LA/CD + \varepsilon \dots \dots \dots (1)$$

$$ROE = \beta_0 + \beta_1 CE/NI + \beta_2 LA/TA + \beta_3 CD/TA + \beta_4 LA/CD + \varepsilon \dots \dots \dots (2)$$

$$OP = \beta_0 + \beta_1 CE/NI + \beta_2 LA/TA + \beta_3 CD/TA + \beta_4 LA/CD + \varepsilon \dots \dots \dots (3)$$

$$NIM = \beta_0 + \beta_1 CE/NI + \beta_2 LA/TA + \beta_3 CD/TA + \beta_4 LA/CD + \varepsilon \dots \dots \dots (4)$$

$$NII = \beta_0 + \beta_1 CE/NI + \beta_2 LA/TA + \beta_3 CD/TA + \beta_4 LA/CD + \varepsilon \dots \dots \dots (5)$$

(5) Where, α , is constant, $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 are coefficients of variables, ε , is error term.

The following hypothesis were developed with alignment to main objectives of the study:

Major Hypothesis:

- **HO:** Efficiency and liquidity has insignificant affect on the profitability of commercial banks in Afghanistan.

Sub-hypotheses:

- **HO1:** The cost-to-income ratio does not significantly affect the profitability of commercial banks in Afghanistan.
- **HO2:** The ratio of loans to total assets does not significantly affect the profitability of commercial banks in Afghanistan.
- **HO3:** The ratio of total customer deposits to total assets does not significantly affect the profitability of commercial banks in Afghanistan.
- **HO4:** The ratio of loans to deposits does not significantly affect the profitability of commercial banks in Afghanistan.

These hypotheses are structured to evaluate the impact of various efficiency and liquidity metrics on the financial performance (profitability) of Afghan commercial banks, considering different facets of liquidity and operational efficiency

Results and Findings

Descriptive Analysis

All of the variables that are contained in this research are descriptively analyzed, in the table 1, based on a sample of 84 observations. The profitability ratios that are expressed as Return on Assets (ROA), Return on Equity (ROE), Operating Profit (OP), Net Interest Margin (NIM), and Net Interest Income (NII) depict different levels of profitability amid the banks to be studied. ROA, ROE, OP, NIM, and NII have the average value of 0.017, 0.112, 0.036, 0.028 and 2.46 respectively. The standard deviations of these variables mean that there will be comparatively low variations in profitability with the values of standard deviation being 0.0106, 0.57, 0.009, 0.018, and 7.70 in ROA, ROE, OP, NIM, and NII respectively. These statistics show that overall, the banks under research in Afghanistan are characterized by low values of profitability, except NII, which could not be ignored, because it has a much higher average.

Besides, the statistics indicate that the dispersion of most profitability ratios across the research period is minimal around the mean. As an example, ROA minimum and maximum were set at -0.0208 and 0.752, with a rather limited band of performance. Likewise, in the case of ROE, OP, NIM, and NII, the range of the minimum and the maximum value is also focused with ROE between -0.0821 and 0.276, OP between 0.00239 and 0.054, NIM between 0.01644 and 0.186, and NII between -4.39702 and 70.82. It is important to note that the NII variable has the greatest variation that is significantly higher than the remaining measures of profitability.

The statistical average of the Cost-to-Income ratio (CI) is 1.00 with standard deviation of 3.06 which is very big. This shows that there was no change in CI over the study period as the value of CI was maintained at 1.00. Nevertheless, the data demonstrates a rather low range of the CI values the largest one was 23.39 and the smallest 0.038. It means that despite the fact that the average CI value did not change significantly, there was still some time during the experiment when fluctuations were rather significant.

In the Liquidity ratio of Loans to Total Assets (LA), the average value was observed to be 0.538, and standard deviation was involving 0.188. The statistics also indicate that the difference near this mean was low with the highest figure being 0.707 and the lowest being 0.024 in the duration in question.

By the same token, there was a mean value of 0.74 and a comparatively low standard deviation of 0.096 in the ratio Customer Deposits to Total Assets (CDA). It means that the CDA ratio was rather consistent over the years and varied between 0.025-0.83.

Finally, Loans to Deposits ratio (LD) also had an average of 0.73 and a standard deviation of 0.23. The outcomes also indicate a low fluctuation around the mean, as the LD ratio ranges between the lowest value of 0.11 and the highest range of 1.03 during the research duration.

On the whole, the descriptive statistics allow concluding that the profitability, efficiency, and liquidity ratios have certain variability, yet the patterns seen are not drastic, as well as the performance of commercial banks in Afghanistan remains relatively stable. However, there are big outliers especially in NII which arises concerns which may require more research to be conducted.

Table 1: Descriptive Statistics

Descriptive Statistics										
	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error	
ROA	84	.09603	-.02083	.07521	.0169789	.01064652	1.020	.263	12.304	.520
ROE	84	.35840	-.08210	.27630	.1119249	.05740737	-.366	.263	1.951	.520
OP	84	.05231	.00239	.05471	.0356605	.00862597	-1.138	.263	2.821	.520
NIM	84	.17048	.01644	.18692	.0284972	.01814659	8.200	.263	72.139	.520
NII	84	75.21340	-4.39702	70.81638	2.4601240	7.70019179	8.636	.263	77.344	.520
CI	84	23.35766	.03824	23.39589	1.0013918	3.05652470	6.197	.263	40.620	.520
LA	84	.68341	.02365	.70706	.5384062	.18843500	-1.549	.263	.896	.520
CDA	84	.80692	.02528	.83220	.7372166	.09582866	-5.208	.263	36.898	.520
LD	84	.91408	.11309	1.02717	.7327392	.23486381	-1.717	.263	1.546	.520
Valid N (listwise)	84									

Correlation Analysis

The correlation coefficient's values ranges between -1.0 which indicates a strong negative correlation and +1.0 which indicates a strong positive correlation. The values range nearly or close to zero indicates weak or no linear relationship. The linear correlations among the independent variables which is represented by (CI), (LA), (CDA) and (LD) and dependent variables which are represented by (ROA), (ROE), (OP), NIM) and (NII) are measured as below:

Table (2)

		Pearson Correlations								
	ROA	ROE	OP	NIM	NII	CI	LA	CDA	LD	
ROA	Pearson Correlation	1								
	Sig. (2-tailed)									
ROE	Pearson Correlation	.677**	1							
	Sig. (2-tailed)	.000								
OP	Pearson Correlation	-.002	.130	1						
	Sig. (2-tailed)	.982	.237							
NIM	Pearson Correlation	-.032	.013	.066	1					
	Sig. (2-tailed)	.774	.906	.550						
NII	Pearson Correlation	-.175	-.228*	-.007	.001	1				
	Sig. (2-tailed)	.111	.037	.948	.996					
CI	Pearson Correlation	-.282**	-.367**	-.021	-.008	.837**	1			
	Sig. (2-tailed)	.009	.001	.846	.942	.000				
LA	Pearson Correlation	-.148	-.070	-.202	-.056	.036	-.048	1		
	Sig. (2-tailed)	.180	.525	.065	.610	.748	.665			
CDA	Pearson Correlation	-.234*	.398**	.059	.080	-.005	-.159	.355**	1	
	Sig. (2-tailed)	.032	.000	.593	.470	.964	.148	.001		
LD	Pearson Correlation	.016	-.213	-.249*	-.093	.043	.002	.898**	-.080	1
	Sig. (2-tailed)	.886	.052	.022	.398	.698	.986	.000	.469	
	N	84	84	84	84	84	84	84	84	84

** . Correlation is significant at the 0.01 level (2-tailed). * . Correlation is significant at the 0.05 level (2-tailed).

As it is analyzed, the effect of the inter-correlation values between the variables of efficiency, liquidity and profitability in the selected variables reflects a mixed type of pattern with one being positive and with the other negative. The values of the correlation coefficient ('r') between profitability measured as Return on Assets (ROA), and the variables of efficiency and liquidity are significantly different. In particular, the ROA correlations with the variables liquidity and efficiency, as the Cost-to-Income (CI), Loan Assets (LA), and Credit Deposit Ratio (CDA), are negative and statistically significant, being -0.282** and -0.145 and -0.234*, correspondingly. Conversely, the association between ROA and the liquidity and effort metric that was captured through Loan Deposit Ratio (LD) was established to be positive (0.016) and significant.

Moreover, correlations of efficiency and liquidity variable with Return on Equity (ROE) as the variable of profitability are not substantial, and tend to be negative, except in the case of CDA. To be more precise, correlations between ROE and CI (-0.367**), LA (-0.070), and LD (-0.213) were negative, whereas CDA was significantly positively correlated (0.398**).

In the case of the Operating Profit (OP), the correlation with CI (-0.021) was negative and insignificant, the same was similar in the case of LA (-0.202), and LD (-0.249*), but on the other hand, the correlation with CDA (0.059) was found to be positive and significant. Lastly, the Net Interest Margin (NIM) which is another profitability measure had a negative relationship with the efficiency and liquidity variables CI (-0.008), LA (-0.056) and LD (-0.093), and a positive relationship with CDA (0.080). NII another profitability variable showed positive relationship with efficiency and liquidity ratios CI (.837**) LA (.036) LD (.043) but showed negative correlation with CDA (-.005). It is apparent from the table that the correlation values were found to be

statistically insignificant between all the independent and dependent variables individually used in the study

Model Estimation

Table (3)

Model	Model Summary ^b									
	R	R Square	Adjusted R Square	Std. Error of Estimate	R Square Change	F Change	Change Statistics df1	df2	Sig. F Change	Durbin-Watson
ROA	.706 ^a	.499	.473	.00772546	.499	19.658	4	79	.000	1.371
ROE	.660 ^a	.436	.407	.04419126	.436	15.267	4	79	.000	1.407
OP	.257 ^a	.066	.019	.00854437	.066	1.398	4	79	.242	1.570
NIM	.125 ^a	.016	-.034	.01845515	.016	.312	4	79	.869	1.955
NII	.870 ^a	.757	.745	3.88775845	.757	61.650	4	79	.000	1.825

a. Predictors: (Constant), LD, CI, CDA, LA

b. Dependent Variable: ROA, ROE, OP, NIM, NII

Analysis outcomes reveal that the influence of efficiency and liquidity on the profitability of Afghan banks, which is indicated by the Return on Assets (ROA), is statistically significant. The model specification in five predictor variables shows the predictive capability of the model as far as profitability is concerned. The values of R-squared of five predictors are 0.499, 0.436, 0.066, 0.016, and 0.757, respectively. The value of 0.499 on R squared shows that 49.9 percent of the variances observed in ROA could be explained based on the independent variables that have been added to the model. The other 50.1 percent variance of ROA is explained by the factors that are not apprehended by the model. It can hence be concluded that efficiency ratios and liquidity ratios have high implications on ROA.

The statistical analysis shows that both efficiency and liquidity positively influence the profitability and the better asset turnover is associated with the higher efficiency and liquidity. This in its turn, positively impacts profitability based on ROA. In the same way, the value of R-squared of Return on Equity (ROE) is 0.436, which means that the independent variables have described 43.6 percent of the variability in Return on Equity (ROE). The rest of the 56.4 percent variances are attributed to other factors. In the case of Operating Profit (OP) and Net Interest Income (NII), R-squared values stand between 0.066 and 0.757, which implies that the independent variables will explain only a minor part of variability in OP (6.6%) and a higher part of the variability in NII (75.7%). According to the results, efficiency and liquidity positively influence ROE, OP, and NII, and the greatest influence was shown on NII. They, however, have a relatively reduced effect on Net Interest Margin (NIM).

These findings are in line with those of Saleem and Rehman (2011) who also established that there were important correlations between efficiency, liquidity and profitability. These results are also supported by the model summary wherein adjusted R- squared values of the model are a few points less than the R- squared of each independent variable: 0.473, 0.407, 0.019, -0.034 and 0.745,

respectively. Testing the model summary and ANOVA (F-value) agrees with the fact that the model can explain the best combination of predicting variables that contributed to the relationship between predicting and the dependent variables. An overall significance of the model is evaluated with a help of the F-statistic.

As well, Durbin-Watson statistic is used to test on autocorrelation in the model. Its values are almost equal to 2, implying that the model is not subjected to autocorrelation. The combined effect of the coefficients is determined to be significant, which means that overall efficiency and liquidity has a significant influence on profitability of Afghan banks. Thus, the hypothesis of the research is accepted with the significance level of 5%. Thus, it allows the results of a study to be considered more accurately and substantiated.

ANOVA ^a						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1-ROA	Regression	.005	4	.001	19.658	.000 ^b
	Residual	.005	79	.000		
	Total	.009	83			
2-ROE	Regression	.119	4	.030	15.267	.000 ^b
	Residual	.154	79	.002		
	Total	.274	83			
3-OP	Regression	.000	4	.000	1.398	.242 ^b
	Residual	.006	79	.000		
	Total	.006	83			
4-NIM	Regression	.000	4	.000	.312	.869 ^b
	Residual	.027	79	.000		
	Total	.027	83			
5-NII	Regression	3727.257	4	931.814	61.650	.000 ^b
	Residual	1194.059	79	15.115		
	Total	4921.315	83			
a. Dependent Variable: : ROA, ROE, OP, NIM, NII						
b. Predictors: (Constant), LD, CI, CDA, LA						

Testing Hypotheses

Table 4 presents the results of the one-way ANOVA analysis for the study variables. The null hypothesis (H0) will be evaluated through the F-test, which is employed to assess the overall significance of the model. The significance level (α) used for this test is 5% (0.05). The decision rule for the F-test involves comparing the confidence level with the p-value of the parameter estimates to determine whether to reject the null hypothesis.

According to Gujarati & Potter (2009) as cited in Ajayi, Ajayi, Enimola & Orugun (2019), if the p-value is less than the confidence level, the null hypothesis is rejected. The p-value for the first hypothesis is 0.000, which is less than the significance level of $\alpha = 0.05$, leading to the rejection of the first hypothesis. Similarly, the p-value for the second hypothesis is also 0.000, which is

below 0.05, resulting in the rejection of the second hypothesis. For the third hypothesis, the p-value is 0.242, which is greater than 0.05, meaning the third hypothesis is accepted while the alternative hypothesis is rejected. The p-value for the fourth hypothesis is 0.869, which is also greater than 0.05, so the fourth hypothesis is accepted and the alternative hypothesis is rejected. Finally, the p-value for the fifth hypothesis is 0.000, which is below 0.05, leading to the rejection of the fifth hypothesis. According to Table 4, the calculated F-value is significant, indicating that the overall model fit has been successfully achieved.

Table (5) Coefficients

Model	B	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
			Std. Error			
1- ROA (Constant)	-1.78		.031		-5.746	.000
	CI	-0.001	.000	-.211	-2.567	.012
	LA	-.344	.047	-6.086	-7.312	.000
	CDA	.261	.041	2.348	6.357	.000
	LD	.257	.035	5.672	7.266	.000
2- ROE (Constant)	-.782		.177		-4.415	.000
	CI	-.004	.002	-.236	-2.704	.008
	LA	-1.230	.269	-4.036	-4.571	.000
	CDA	1.246	.235	2.080	5.310	.000
	LD	.875	.202	3.580	4.323	.000
3- OP (Constant)	.055		.034		1.599	.114
	CI	-6.998E-5	.000	-.025	-.221	.826
	LA	.023	.052	.508	.447	.656
	CDA	-.016	.045	-.183	-.363	.718
	LD	-.026	.039	-.720	-.676	.501
4- NIM (Constant)	-61.286		15.573		-3.935	.000
	CI	2.260	.144	.897	15.678	.000
	LA	-81.840	23.666	-2.003	-3.458	.001
	CDA	80.584	20.647	1.003	3.903	.000
	LD	62.967	17.807	1.921	3.536	.001
5- NII (Constant)	-61.286		15.573		-3.935	.000
	CI	2.260	.144	.897	15.678	.000
	LA	-81.840	23.666	-2.003	-3.458	.001
	CDA	80.584	20.647	1.003	3.903	.000
	LD	62.967	17.807	1.921	3.536	.001
a. Dependent Variable: ROA, ROE, OP, NIM, NI I						

The regression coefficients for all independent variables, with the exception of OP, were negative, indicating a negative correlation between the profitability measure and the explanatory variables, which include efficiency and liquidity measures such as LD, CI, CDA, and LA, in the context of commercial banks in Afghanistan.

Conclusion and Recommendation

The effect of efficiency and liquidity on the profitability of the commercial banks in Afghanistan was the study's primary question, which was resolved. Commercial banks rely heavily on

efficiency, liquidity, and profitability; any one of these three pillars failing will cause the bank's financial position to deteriorate and its depositors' faith to evaporate. Because they are essential to the growth of most economic sectors and the finance industry, commercial banks in Afghanistan have a big influence on these areas.

Therefore, the researchers recommend the following

- To prevent going into deficit, Afghanistan's commercial banks should strike a balance between profitability and liquidity.
- While aiming for profitability, Afghanistan's commercial banks must abide by the necessary regulations to effectively manage their liquidity.
- Additional studies and larger-scale research are needed to cover all bank operations in Afghanistan

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