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Study of the relationship between management efficiency and liquidity of banks in Afghanistan using CAMEL model

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Abstract:
This study evaluates the relationship between management efficiency and liquidity in banks operating in Afghanistan over the period 2010–2024, using the CAMEL model as the primary analytical framework. The research is motivated by the need to better understand how managerial effectiveness influences liquidity management within a dynamic and evolving financial environment. An applied and correlational research design was adopted, relying exclusively on secondary data obtained from the published financial statements of 6 banks operating in Afghanistan. Management efficiency, treated as the independent variable, and liquidity, treated as the dependent variable, were measured using ratio-based indicators such as operating income to total assets and the loans-to-deposits ratio. Data analysis was conducted using IBM SPSS version 26 and Microsoft Excel, employing descriptive statistics, financial ratio analysis, normality tests, and Pearson correlation analysis. The descriptive results indicate that management efficiency experienced a notable decline in 2022, followed by gradual improvement through 2024. Liquidity showed a downward trend over the study period, reflecting cautious lending practices and more consistent deposit management approaches. The correlation analysis revealed a significant strong positive relationship ($r = 0.667$, $p < 0.05$) between management efficiency and liquidity. This finding suggests that improvements in managerial practices such as effective asset utilization, prudent cost control, and enhanced operational oversight can contribute positively to banks' liquidity positions. Overall, the study highlights the importance of management efficiency in supporting sound liquidity management and maintaining financial stability. The findings suggest that strengthening managerial efficiency can assist banks in sustaining adequate liquidity levels and managing financial risks more effectively over time.

Keywords: Management Efficiency, Liquidity, CAMEL Model, Afghan Banks, Correlation Analysis

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Introduction

The banking sector plays a vital role in economic development by facilitating financial intermediation, mobilizing savings, allocating financial resources efficiently, and supporting entrepreneurship as well as infrastructure development. In developing economies, banks constitute the backbone of the financial system, and their financial soundness and operational efficiency have a direct influence on economic growth and overall financial stability. Over the past two decades, Afghanistan's banking sector has experienced notable development, with the establishment of a modern banking framework under the supervision of Da Afghanistan Bank (DAB). These developments have contributed to improving financial intermediation and strengthening institutional structures within the sector. Despite these advancements, the banking sector continues to operate in a complex and evolving economic environment, where maintaining financial stability, liquidity balance, and efficient management remains essential. Studies such as the World Bank (2021) emphasize the importance of sound banking practices to enhance resilience and ensure sustainable performance, particularly in developing and transition economies. (World Bank, 2021)

The CAMEL framework comprising Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, and Liquidity is a widely recognized tool for assessing banks' financial health and operational performance. Among these components, management efficiency and liquidity hold particular significance due to their close interdependence and their influence on overall bank performance. Effective management plays a central role in optimizing resource utilization, controlling costs, and ensuring adequate liquidity to meet obligations and support lending activities.

In Afghanistan, differences in performance between public and private banks highlight the relevance of management efficiency and liquidity management, especially during periods of economic adjustment. Recent liquidity-related developments have further emphasized the need to understand how managerial efficiency contributes to maintaining liquidity and supporting financial stability. Accordingly, this study applies the CAMEL framework to examine the relationship between management efficiency and liquidity in Afghanistan banks.

Problem Statement:

The banking sector plays a pivotal role in promoting economic growth, financial stability, and efficient resource allocation in developing economies. Banks are essential institutions for mobilizing savings, extending credit, supporting entrepreneurship, and facilitating investment in productive and infrastructure sectors. In Afghanistan, the banking system has experienced notable transformation over the past two decades, gradually developing into a structured and regulated financial sector under the supervision of Da Afghanistan Bank (DAB). These developments have strengthened institutional frameworks and enhanced the role of banks in supporting economic activities. However, as highlighted by the International Monetary Fund (IMF, 2022), Afghan banks continue to operate within a dynamic economic environment that presents operational and managerial complexities affecting their performance and contribution to sustainable economic development. (International Monetary Fund (IMF), 2022)

Among the key operational considerations for Afghan banks is effective liquidity management. Liquidity is essential for ensuring that banks can meet short-term obligations while efficiently allocating funds to income-generating activities. Maintaining an appropriate liquidity balance is critical, as insufficient liquidity may limit lending activities and operational flexibility, whereas excessive liquidity can reduce profitability and efficient asset utilization. Recent economic developments have further emphasized the importance of prudent liquidity management, as banks have had to adapt to changes in customer behavior, cash flow patterns, and external financial conditions. These circumstances highlight the importance of strong internal management efficiency and sound banking practices to sustain liquidity positions, support financial stability, and enhance overall bank performance in Afghanistan. (Da Afghanistan Bank [DAB], 2022)

Alongside liquidity, management efficiency is widely recognized as a key determinant of bank performance. Management efficiency refers to the ability of bank management to make sound strategic decisions, allocate resources effectively, control operational costs, and enhance profitability while maintaining prudent risk management. Empirical studies conducted in different banking environments

indicate that institutions with higher levels of management efficiency tend to achieve better performance outcomes, including improved asset utilization, lower operating expenses, and more stable earnings. As such, management efficiency plays a central role in strengthening banks' financial soundness and operational sustainability.

Despite the acknowledged importance of both management efficiency and liquidity, empirical evidence on the interaction between these two factors within Banks of Afghanistan remains limited. Existing research has often focused on individual dimensions of bank performance, leaving a gap in understanding how internal management practices influence liquidity positions within the Afghan banking context. Given the country's distinct institutional, economic, and regulatory environment, it is important to examine this relationship in a systematic manner to identify effective management practices that support liquidity maintenance, operational efficiency, and financial stability.

Understanding the relationship between management efficiency and liquidity is particularly relevant in the current operating environment, where banks are required to manage resources carefully, adapt to evolving regulatory frameworks, and operate efficiently within existing financial conditions. Insights from this research are expected to support informed decision-making by bank management, strengthen internal risk management practices, and assist policymakers and regulators in promoting a resilient and well-functioning banking sector. Accordingly, this study addresses the identified research gap by applying the CAMEL framework, with a specific focus on the relationship between management efficiency and liquidity. By doing so, the research aims to provide empirical evidence on how effective management practices influence banks' liquidity positions and contribute to their overall stability and sustainable performance.

Research Main Objective

To identify the relationship between management efficiency and liquidity of banks in Afghanistan

Research Main Question

1- What is the relationship between management efficiency and liquidity of banks in Afghanistan?

Research Hypothesis

1- It seems that there is a significant relationship between management efficiency and liquidity of banks in Afghanistan

Significance of the Study

The study provides empirical evidence on the relationship between management efficiency and liquidity in Banks of Afghanistan, extending the application of the CAMEL framework to a fragile state context. Findings can guide bank management and regulators in improving operational practices, liquidity management, and risk mitigation strategies.

Insights from the study can help banks optimize resource allocation, maintain adequate liquidity, and improve overall financial performance and stability.

The research offers recommendations for effective management strategies during periods of financial stress, supporting sustainable banking sector development.

Scope of the Study:

This study is confined to banks operating within Afghanistan and is based on financial data covering the period from 2010 to 2024. This timeframe allows for an in-depth examination of banking performance across different phases of sectorial development and operational conditions. While the research primarily concentrates on management efficiency and liquidity, it does not attempt to provide a full evaluation of all components of the CAMEL framework. Nevertheless, other dimensions such as capital adequacy, asset quality, and earnings quality are recognized as integral elements of overall bank performance and are considered within the broader analytical context of the study.

The research specifically focuses on analyzing the relationship between management efficiency and liquidity in Afghan banks using the CAMEL framework. Key indicators of management efficiency examined in this study include operational cost ratios, asset utilization measures, and earnings growth, while liquidity is assessed through indicators such as liquid asset ratios, loan-to-deposit ratios, and cash

position measures. The analysis aims to identify patterns and relationships between these variables to better understand how internal management practices are associated with liquidity outcomes.

The scope of the study is further limited to a quantitative research approach, relying on secondary data obtained from available financial statements and published reports of banks. By employing financial ratios and statistical analysis, the study provides empirical evidence on the link between management efficiency and liquidity, as well as their implications for overall bank performance. The findings are primarily applicable to banks operating in Afghanistan; however, the results may also offer useful insights for banking institutions in other economies with similar structural or transitional characteristics.

Theoretical Framework:

The theoretical framework provides a structured basis for examining the relationship between management efficiency and liquidity in banks. This study is grounded in the CAMEL model, a widely accepted and internationally recognized framework used to assess banking performance through five key dimensions: Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, and Liquidity. The CAMEL model offers a comprehensive perspective for evaluating the financial soundness and operational effectiveness of banking institutions. Within this framework, management efficiency and liquidity are of particular importance, as effective managerial practices play a central role in shaping a bank's liquidity position, operational outcomes, and overall financial stability. This framework explains how internal management decisions—such as efficient resource allocation, prudent cost management, and earnings optimization—contribute to sound liquidity management, including maintaining adequate levels of liquid assets and ensuring a balanced relationship between short-term obligations and income-generating activities. By adopting the CAMEL model as the guiding theoretical foundation, the study applies a systematic approach to empirically analyze how management efficiency influences liquidity in Afghan banks. This approach supports a clearer understanding of how effective management practices can enhance liquidity conditions and contribute to stronger resilience, stability, and sustainable performance within the banking sector of Afghanistan.

Liquidity Preference Theory:

Liquidity Preference Theory, originally developed by Keynes, asserts that economic agents prefer to hold more liquid assets—such as cash or cash-equivalent securities—because of uncertainty about the future and price risk. In this framework, liquidity serves as a form of protection, and individuals demand compensation (in the form of higher interest rates) when they relinquish liquidity for less liquid, higher-yielding assets (Culham, 2020).

From a banking perspective, this theory highlights a fundamental trade-off: banks must balance holding liquid assets to satisfy depositors and mitigate withdrawal risk, while also deploying funds into earning assets (e.g., loans) to generate profit. Excessive liquidity can dampen profitability by locking up capital in low-yielding assets, whereas insufficient liquidity can lead to solvency and confidence risks (Gitari, K & Musau, F , 2023).

Empirical banking studies continue to apply Liquidity Preference Theory to understand liquidity–profitability dynamics. For instance, research on Banks in Kenya reveals a positive and significant effect of high liquidity holdings on return on equity, but also warns that over-holding liquid assets reduces profitability because these assets typically generate lower returns (Gambere, J & Maina, P, 2024). Similarly, a study in Nigeria uses liquidity ratios (like the cash-to-current-asset ratio) in line with the transactional and precautionary motives of Liquidity Preference Theory to show how depositors' preference for liquidity shapes banks' liquidity strategies and deposit mobilization (Karimi, 2024).

In the context of Banks of Afghanistan, Liquidity Preference Theory provides a valuable lens to analyze how bank management's decisions about liquidity reflect not only regulatory and risk management imperatives, but also underlying demand for liquidity by depositors and other stakeholders. Through efficient management practices, banks can optimize their liquid asset holdings to satisfy liquidity needs while preserving profitability and stability under conditions of uncertainty and constrained access to external financing.

Agency Theory:

Agency Theory explains the relationship between principals (owners or shareholders) and agents (managers) in an organization, highlighting potential conflicts of interest when agents prioritize personal goals over organizational objectives. In the banking context, this theory emphasizes that managers' decisions—such as resource allocation, operational cost control, and liquidity management—can significantly influence the financial health and performance of the bank. Efficient management practices are crucial to align the interests of bank managers with those of shareholders, ensuring that liquidity and profitability objectives are met without compromising financial stability (Bashir, A & Zhang, T, 2022). In Banks, agency problems may arise when managers take excessive risks, underinvest in liquidity reserves, or fail to optimize operational efficiency, potentially affecting both short-term liquidity and long-term profitability. By applying Agency Theory, researchers can assess how managerial decisions impact liquidity management and overall financial performance, and identify mechanisms such as monitoring, incentives, and governance structures that reduce agency costs (Al-Homaidi, A, Al-Saleh, N, & Khan, F, 2023).

Empirical studies demonstrate that higher management efficiency—achieved through transparent governance, performance-based incentives, and effective monitoring—reduces agency conflicts and improves liquidity management in banks. For instance, a study on Middle Eastern banks found that well-aligned managerial incentives and rigorous monitoring enhanced liquidity positions and minimized financial risk, supporting the predictive value of Agency Theory in banking operations (Al-Abdullah, S & Kayed, R, 2024).

In the context of Banks of Afghanistan, Agency Theory provides a framework for understanding how management efficiency affects liquidity. Proper alignment of managerial actions with shareholders' and regulatory objectives can help banks maintain adequate liquidity while optimizing asset utilization and profitability. This theoretical lens supports the study's focus on how internal management practices shape liquidity outcomes, operational efficiency, and financial stability under challenging economic conditions (Rahimi, S & Noori, H, 2023).

Contingency Theory:

Contingency Theory posits that there is no one-size-fits-all approach to organizational management; instead, the effectiveness of managerial practices depends on the alignment between internal organizational structures and external environmental conditions (Fiedler, F. E, 2021). In the banking sector, this theory emphasizes that management efficiency and liquidity strategies must be adapted to contextual factors such as regulatory requirements, market conditions, economic volatility, and institutional constraints. Banks that tailor their internal processes to these contingencies tend to achieve superior financial performance and stability (Ofori, S & Mensah, K, 2022).

In practice, Contingency Theory implies that Banks of Afghanistan must adjust liquidity management and operational decisions in response to unique post-2021 challenges, such as cash shortages, limited access to international financial systems, and regulatory uncertainties. Effective management efficiency is thus contingent upon understanding and responding to these environmental variables, ensuring that liquidity levels are maintained without compromising profitability (Shah, R & Siddiqui, Z, 2023).

Empirical research supports the application of Contingency Theory in banking. For instance, studies in emerging markets show that banks adopting flexible management strategies—tailored to changing economic and regulatory conditions—achieve higher operational efficiency, better liquidity management, and improved resilience during crises (Kinyua, P & Gathenya, J, 2024). Similarly, in Southeast Asian banking contexts, contingency-aligned decision-making was found to enhance both risk mitigation and profitability under volatile market conditions (Nguyen, T & Tran, P, 2023).

In the context of Banks of Afghanistan, Contingency Theory provides a valuable perspective for analyzing how management efficiency interacts with liquidity. It underscores that there is no universal strategy for optimal liquidity management; instead, effective practices must consider the dynamic economic, regulatory, and institutional environment. By applying this theoretical lens, the study highlights how banks can achieve sustainable performance by aligning managerial decisions with

contextual demands, ultimately balancing liquidity needs and operational efficiency under conditions of uncertainty (Rahman, M & Haq, S, 2023).

Justification for using CAMEL Model:

The CAMEL model is one of the most widely accepted and empirically validated frameworks for evaluating the performance and stability of Banks. It assesses banks across five core dimensions—Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, and Liquidity—offering a comprehensive and structured approach to performance analysis. For this study, the CAMEL model is particularly suitable because it integrates both management efficiency and liquidity within a unified framework, enabling a systematic examination of how managerial decisions influence liquidity outcomes. Numerous scholars emphasize that CAMEL's multidimensional assessment offers a more robust and reliable evaluation of bank performance compared to single-ratio or single-factor approaches (Srinivas, K & Rao, P, 2021).

The model is also well-suited for banking sectors operating in volatile or constrained environments, such as Afghanistan's post-2021 financial landscape. CAMEL allows researchers to capture the effects of external pressures—like liquidity shortages, reduced access to international markets, and regulatory limitations—through its distinct yet interconnected components. Studies highlight that the CAMEL framework performs strongly in environments marked by economic uncertainty, as it helps isolate weaknesses and strengths across operational and financial indicators (Hashem, H & Abu-Zaid, A, 2022). For Banks of Afghanistan, this holistic perspective is crucial for understanding how management efficiency interacts with liquidity under evolving economic conditions.

Overview of Banks of in Afghanistan:

Afghanistan's banking sector has experienced notable development over the past two decades, gradually evolving from a primarily state-led system into a more diversified financial sector that includes both private and state-owned banks. This transformation has been supported by the regulatory and supervisory role of Da Afghanistan Bank (DAB), which has provided an institutional framework aimed at promoting sound banking practices, enhancing transparency, and strengthening compliance with regulatory standards. These developments have contributed to the gradual modernization of banking operations and improved confidence in the financial system.

The entry and expansion of private banks, alongside reforms and restructuring efforts within state-owned banks, have helped broaden the range of financial services available to individuals and businesses. As a result, banks have played an increasingly important role in financial inclusion, service delivery, and domestic financial intermediation. Improved access to banking services has supported savings mobilization, facilitated payment systems, and contributed to economic activity across different sectors. As noted by Ahmadi and Wasiq (2021), these developments reflect ongoing efforts within the banking sector to enhance operational efficiency and responsiveness to the needs of the Afghan economy. (Ahmadi, A & Wasiq, M, 2021).

Overview of CAMEL model:

The CAMEL model is a comprehensive supervisory and analytical framework widely used by central banks and regulatory authorities to assess the performance, stability, and overall soundness of financial institutions. The acronym represents five critical components of banking evaluation—Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, and Liquidity—each offering insight into different dimensions of a bank's financial health. Capital Adequacy evaluates the bank's ability to absorb risk; Asset Quality assesses credit risk and loan portfolio health; Management Efficiency focuses on operational effectiveness and governance; Earnings Quality measures profitability and sustainability; and Liquidity examines the bank's capacity to meet short-term obligations. Together, these indicators provide a multidimensional understanding of a bank's strengths and vulnerabilities, allowing regulators to identify areas requiring improvement and ensure financial system stability (Siddiqui, M & Malik, A, 2022).

Management Efficiency:
Management Efficiency within the CAMEL framework evaluates how effectively a bank's leadership utilizes its resources, controls operational costs, manages risks, and ensures sound strategic and administrative practices. It reflects the bank's ability to generate optimal returns from available assets while maintaining operational stability and regulatory compliance. Key indicators commonly used to assess management efficiency include the cost-to-income ratio, operating expenses to total assets, and net profit per employee, all of which help determine how well management converts inputs into financial performance. Efficient management plays a critical role in shaping liquidity outcomes, as prudent decision-making regarding asset allocation, risk oversight, and operational controls directly affects the bank's capacity to meet short-term obligations without compromising profitability. In emerging and volatile banking environments such as Afghanistan, strong management efficiency is essential for maintaining resilience, enhancing financial performance, and navigating external economic pressures (Karim, M & Rahman, S, 2023).

Liquidity:
Liquidity, as a core component of the CAMEL model, measures a bank's ability to meet its short-term financial obligations without disrupting its operations or incurring significant losses. It reflects the availability of cash, cash-equivalent assets, and liquid financial instruments that can be quickly mobilized to satisfy withdrawal demands and operational needs. Key liquidity indicators include the liquid assets to total assets ratio, customer deposits to total assets, and loan-to-deposit ratio, which collectively assess the bank's capacity to balance liquidity with profitability. Maintaining adequate liquidity is critical for safeguarding depositor confidence and ensuring financial stability, particularly in environments marked by uncertainty and restricted access to external funding. For Banks of Afghanistan, liquidity management has become even more essential in the post-2021 context, where cash shortages, reduced international banking channels, and heightened withdrawal pressures demand prudent and proactive liquidity strategies to ensure operational continuity and risk mitigation (Yousufi, A & Hakimi, F, 2023).

Literature Review:
(Karim, M & Rahman, S, 2023) studied the relationship between management efficiency and liquidity in private Banks in a developing country context. Their research demonstrated a strong positive association between effective managerial practices—such as cost control, asset allocation, and operational oversight—and the bank's ability to maintain sufficient liquidity. The study further highlighted that banks with higher management efficiency were better positioned to navigate market volatility, mitigate liquidity risk, and sustain profitability over time. This empirical evidence reinforced the importance of evaluating management efficiency as a key component in liquidity management strategies.

(Hashem, H & Abu-Zaid, A, 2022) investigated the application of the CAMEL model in emerging and volatile banking environments. Their study revealed that banks operating under conditions of economic uncertainty or regulatory constraints benefit from a multidimensional approach to performance evaluation. Specifically, they found that well-managed banks with efficient governance structures were more capable of balancing liquidity needs with profitability, while poorly managed banks faced higher risks of liquidity shortages and operational inefficiencies. The study underscored the relevance of CAMEL for assessing bank stability under challenging macroeconomic conditions. In which country this research has been done

(Srinivas, K & Rao, P, 2021) conducted a study on the performance evaluation of Banks using the CAMEL framework in South Asia. Their research highlighted that management efficiency and liquidity are critical determinants of overall bank stability and profitability. The study found that banks with higher operational efficiency—reflected in lower cost-to-income ratios and effective resource utilization—were better able to maintain adequate liquidity levels, which in turn strengthened depositor confidence and enhanced financial resilience. The authors emphasized that integrating both management efficiency and liquidity indicators provides a more holistic assessment compared to traditional single-ratio analysis.

(Onyinye, E & Wachukwu, S, 2019) explored the impact of management efficiency on the liquidity of Nigerian commercial banks. Their research found that banks maintaining management efficiency — generally achieved better performance in terms of liquidity and operational stability. Although the focus was not solely on "management efficiency," the study underscored the importance of efficient liquidity management and stable liquidity buffers in safeguarding bank performance amid market fluctuations. This highlights how liquidity, tied to prudent internal management and governance, serves as a backbone for bank stability in emerging-market contexts.

This study from (Sidhu, A. V & Abraham, R, 2021) examined how liquidity (measured via the liquidity coverage ratio) affects bank efficiency in India over 2010–2019, using DEA (Data Envelopment Analysis) and panel regression. The authors found that higher liquidity initially improves technical efficiency — though after a certain point the relationship can become non-linear. This evidence suggests that liquidity and efficiency are interrelated in banking operations, albeit with nuances depending on the liquidity level.

Using data from 11 Iraqi banks over a multi-year period, this study from (Al Salih, M. A, Ali, R, & Hameed, S, 2020) explored how banks' liquidity ratios influence profitability and performance measures (e.g., ROA, ROE, NIM). Results indicated that liquidity levels significantly affect bank financial performance, emphasizing that liquidity management is essential for sustaining bank performance and risk control.

Conceptual Model:

The conceptual model for this study is designed to illustrate the relationship between management efficiency and liquidity within the context of Banks of Afghanistan, using the CAMEL model as the guiding analytical structure. Grounded in prior empirical studies, the framework emphasizes how managerial practices—such as cost control, resource utilization, governance quality, and strategic decision-making—directly influence a bank's ability to maintain adequate liquidity levels, especially in volatile financial environments.

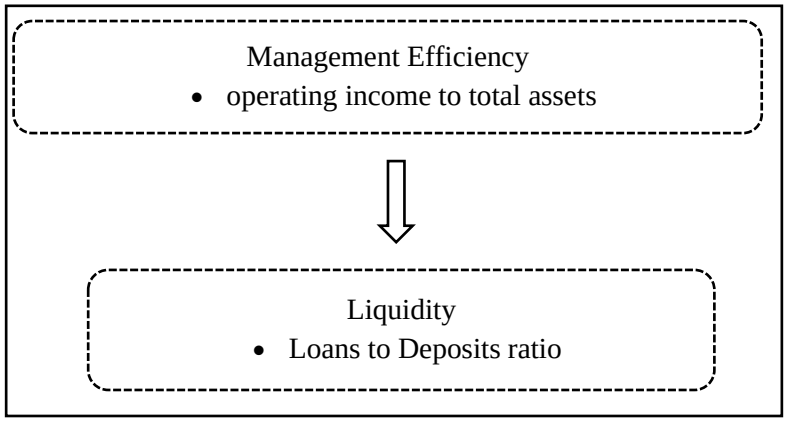


Figure 1. Conceptual model describing the relationship between the variables.

Research Methodology:

This section outlines the methodological framework employed to study the relationship between management efficiency and liquidity in Banks of Afghanistan using the CAMEL model structure. The study relies exclusively on secondary data, extracted from the published financial statements of 6 Banks in Afghanistan over the period 2010–2024, a timeframe marked by significant economic and liquidity challenges. In terms of purpose, the research is classified as applied, as it aims to provide practical insights into bank performance and managerial effectiveness within the Afghanistan financial sector. Methodologically, the study is categorized as correlational research, focusing on assessing the strength and direction of the relationship between management efficiency (independent variable) and liquidity (dependent variable).

The data will be processed using IBM SPSS 26 and Microsoft Excel, enabling accurate computation and interpretation of financial indicators. A combination of analytical tools—including descriptive

statistics, financial ratio analysis, and correlation analysis—is used to evaluate the patterns and associations between the two variables. This methodological approach ensures a systematic and empirically grounded assessment of how managerial practices influence liquidity conditions in banks of Afghanistan.

Study Population and Sample size:
The study population consists of all banks operating in Afghanistan during the 2010–2024 period. From this population, a sample of 6 banks was selected based on the availability and completeness of their published financial statements.

Sampling Method:
A purposive sampling method was employed, allowing the researcher to intentionally select banks with complete, accessible, and consistent financial data for the period 2010–2024.

Data Collection Method:
This section explains the procedures used to gather the data required for the study. The research relies entirely on secondary data extracted from the published financial statements of 6 Banks in Afghanistan for the years 2010-2024.

Measurement of variables
The indicators applied in this study are derived from the CAMEL model. Each variable is assessed using ratio-based measurements calculated through the formulas. To enhance clarity, the variables are grouped into major categories corresponding to their respective components within the framework:

Table: 1

Independent Variables	Abbreviations	Measure
Management Efficiency	ME	Operating Income ÷ Total Assets
Dependent Variable		
Liquidity	L	Total Loans ÷ Total Deposits

Method of Analysis:
The collected financial data will be analyzed using IBM SPSS 26 and Microsoft Excel to compute relevant ratios and statistical outputs. Descriptive statistics, financial ratio calculations, and correlation analysis will be applied to examine patterns and measure the relationship between management efficiency and liquidity.

Data Analysis and Findings:
This section presents the results derived from the analysis of financial data collected from 6 banks in Afghanistan for the period 2010–2024. Using IBM SPSS 26 and Microsoft Excel, the study computes key financial ratios and applies descriptive statistics and correlation analysis to evaluate patterns in management efficiency and liquidity. The findings outlined in this section offer an empirical assessment of the relationship between the two variables.

Descriptive Statistics:
This section provides a summary of the key characteristics and distribution of the study variables—management efficiency and liquidity—across the 6 selected banks from 2010 to 2024.

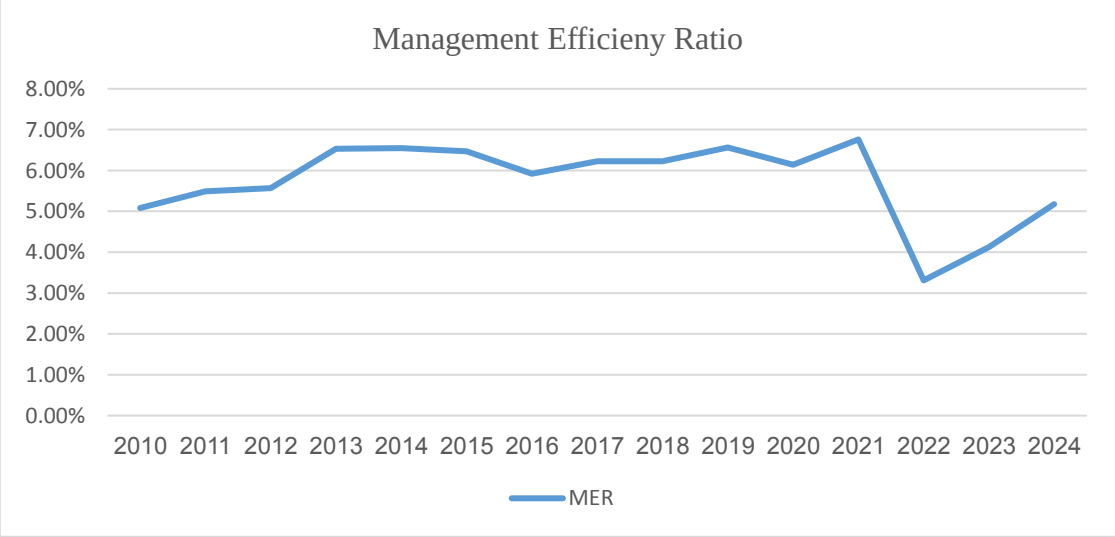
Management Efficiency of Afghanistan Banks

The data on management efficiency ratios of Afghan banks from 2010 to 2024 indicate an overall upward trend in efficiency during the first decade, with the mean ratio increasing from 5.08% in 2010 to a peak of 6.76% in 2021. This period reflects gradual improvements in operational effectiveness, resource utilization, and cost management across the banking sector. However, 2022 shows a sharp decline in mean management efficiency to 3.31%, representing the lowest level in the entire period, followed by a gradual recovery to 5.18% by 2024. The fluctuations observed, particularly the dip in 2022, highlight periods of adjustment in managerial practices, while the post-2022 recovery indicates that Afghanistan banks have been steadily improving management efficiency toward more stable and consistent performance.

Table 2:

Banks Management Efficiency Ratio from 2010 to 2024							
		Mean	Median	Standard Deviation	Minimum	Maximum	Range
Valid	2010	5.08%	4.41%	0.017563194	3.55%	8.08%	4.53%
	2011	5.49%	5.23%	0.023609464	2.35%	9.25%	6.90%
	2012	5.57%	5.46%	0.022461248	3.24%	9.47%	6.23%
	2013	6.53%	6.10%	0.028561383	4.08%	11.84%	7.76%
	2014	6.55%	5.91%	0.029868174	3.48%	11.99%	8.50%
	2015	6.47%	6.56%	0.035101071	2.52%	12.09%	9.57%
	2016	5.92%	5.94%	0.032070697	2.36%	11.63%	9.27%
	2017	6.23%	5.66%	0.030066518	3.45%	11.58%	8.13%
	2018	6.23%	6.02%	0.030940129	3.38%	11.82%	8.44%
	2019	6.56%	5.30%	0.032303111	4.23%	12.91%	8.68%
	2020	6.14%	5.62%	0.026005417	3.62%	10.80%	7.18%
	2021	6.76%	7.24%	0.027473942	2.46%	9.71%	7.25%
	2022	3.31%	4.21%	0.028869934	-1.59%	5.87%	7.46%
	2023	4.13%	5.35%	0.026532287	-0.02%	6.69%	6.71%
	2024	5.18%	5.12%	0.009799481	3.78%	6.48%	2.71%

Figure 2:



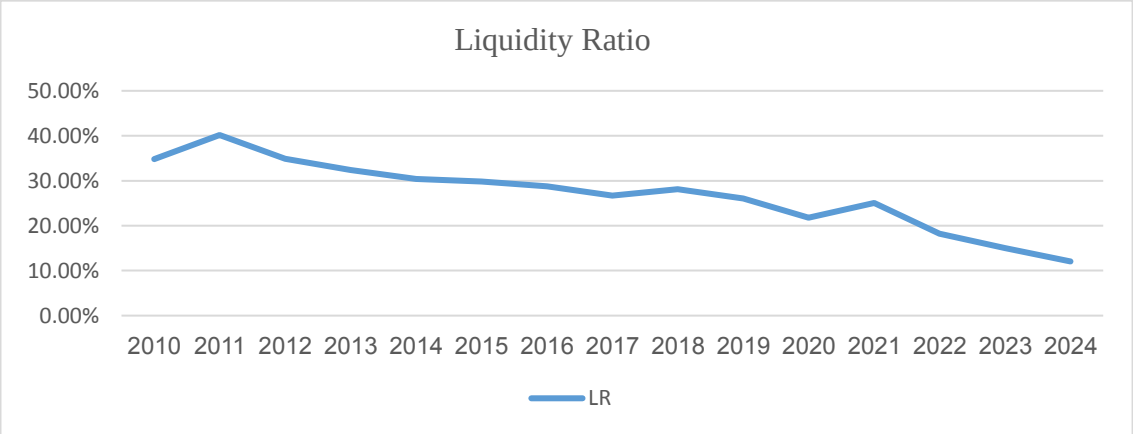
Liquidity of Afghanistan Banks

The liquidity ratios of Afghan banks from 2010 to 2024 show a general declining trend over the period. The mean liquidity ratio started at 34.78% in 2010, fluctuated slightly during the next decade, and gradually decreased to 12.05% by 2024. The standard deviations and range values suggest considerable variation among banks in the earlier years, particularly between 2012 and 2015, with some institutions maintaining very high liquidity while others operated at much lower levels. From 2022 onwards, both the mean and median liquidity ratios, as well as variability among banks, decreased significantly, highlighting a more uniform approach to liquidity management across the sector.

Table 3:

Banks Liquidity Ratio from 2010 to 2024							
		Mean	Median	Standard Deviation	Minimum	Maximum	Range
Valid	2010	34.78%	39.88%	0.213933638	0.00%	57.06%	57.06%
	2011	40.17%	46.10%	0.217245289	11.46%	65.10%	53.65%
	2012	34.86%	33.86%	0.241925323	9.92%	74.16%	64.24%
	2013	32.38%	22.39%	0.266774625	9.32%	76.96%	67.65%
	2014	30.42%	25.03%	0.269338376	5.46%	80.01%	74.54%
	2015	29.80%	24.77%	0.267018118	5.96%	76.04%	70.08%
	2016	28.73%	23.65%	0.260552282	5.32%	75.30%	69.98%
	2017	26.67%	21.10%	0.245295897	5.20%	68.51%	63.31%
	2018	28.13%	20.92%	0.270578305	4.30%	76.52%	72.22%
	2019	26.03%	18.56%	0.268636028	4.85%	74.69%	69.84%
	2020	21.77%	17.64%	0.213047029	3.40%	55.27%	51.87%
	2021	25.04%	22.48%	0.201592417	2.59%	55.78%	53.20%
	2022	18.25%	18.68%	0.101776849	1.46%	31.90%	30.44%
	2023	14.99%	15.96%	0.090779226	0.64%	25.85%	25.21%
	2024	12.05%	13.70%	0.074235024	0.36%	19.78%	19.42%

Figure 3



Inferential statistics:
This section presents the statistical tests used to examine the relationship between management efficiency and liquidity among Banks of Afghanistan. Using correlation analysis, the study evaluates the strength and direction of the association between the two variables over the 2010–2024 period. These inferential results help determine whether changes in management efficiency are significantly linked to variations in bank liquidity.

Kolmogorov-Smirnov Test
The Tests of Normality table shows the results of two key tests—the Kolmogorov-Smirnov and Shapiro-Wilk—used to check if the financial variables follow a normal distribution based on the sample of four observations. For both the variables—Management Efficiency and Liquidity—the p-values were above 0.05. This means that the data is normally distributed, suggesting that the financial data for each variable fits the normal distribution well.

Table 4:

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Management Efficieny	0.307	90	0,368*	0.813	90	0.729
Liquidity	0.136	90	.0.834*	0.972	90	0.885
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

Correlation analysis
The Pearson correlation test was used to examine whether a linear relationship exists between management efficiency and liquidity. As presented in the table, the correlation coefficient between the two variables is 0.667, indicating a strong positive relationship. This means that as management efficiency improves, liquidity levels also increase, and the association between the two is considerably strong. The significance value of 0.001 ($p < 0.05$) confirms that this relationship is statistically significant, implying that the observed correlation is not due to random chance. Overall, the results demonstrate a clear and meaningful connection between managerial efficiency and liquidity in Afghan banks during the study period, highlighting the important role of effective management in maintaining adequate liquidity.

Table 5:

Correlations			
		MER	LR
MER	Pearson Correlation	1	0.667
	Sig. (2-tailed)		0.001
LR	Pearson Correlation	0.667	1
	Sig. (2-tailed)	0.001	

Hypothesis Testing Summary
As per the above calculations and findings we summarize our hypothesis testing as follows:

Table 6:

Hypothesis	Association	Result
It seems that there is a significant relationship between management efficiency and liquidity of banks in Afghanistan	Strong positive	Accepted (Significant)

Conclusion:

This study examined the relationship between management efficiency and liquidity in Banks of Afghanistan for the period 2010–2024 using the CAMEL framework. The analysis indicated that management efficiency showed some fluctuations during the study period, with a temporary dip in 2022, followed by gradual improvement through 2024. Liquidity levels displayed a steady trend, reflecting careful management of deposits and lending activities. Normality tests confirmed that the financial data were suitable for parametric analysis, while the Pearson correlation coefficient revealed a statistically significant positive relationship ($r = 0.667$, $p < 0.05$) between management efficiency and liquidity. These results suggest that enhanced managerial practices—such as effective asset utilization, operational oversight, and cost management—can positively influence liquidity positions, alongside other contributing factors.

Based on these findings, it is recommended that Banks of Afghanistan continue to strengthen management efficiency by focusing on optimizing asset utilization, controlling operational costs, and maintaining robust operational oversight. Improved management practices can help banks sustain adequate liquidity, reduce financial risks, and enhance overall stability. By prioritizing these measures, banks can strengthen resilience, support depositor confidence, and contribute to the continued development of a stable and efficient banking sector. The study also highlights the practical relevance of the CAMEL framework as a tool for assessing bank performance and guiding strategic management decisions.

Discussion:

The findings of this study indicate a weak but statistically significant positive relationship between management efficiency and liquidity in Banks of Afghanistan during the period 2010–2024. This suggests that banks with effective management practices—such as optimized asset utilization, prudent cost control, and strong operational oversight—tend to maintain healthier liquidity positions, even under challenging economic conditions. These results are consistent with (Karim, M & Rahman, S, 2023), who found that in developing economies, efficient managerial practices enhance a bank's capacity to manage liquidity, mitigate financial risks, and sustain profitability over time.

The study also aligns with the conclusions of (Hashem, H & Abu-Zaid, A, 2022), who emphasized that banks with strong governance and operational efficiency are better equipped to balance liquidity requirements with profitability in volatile or uncertain environments. In the Afghan context, where banks operate within a complex and evolving financial landscape, effective management plays a central role in maintaining liquidity and supporting operational resilience.

Furthermore, the findings support (Srinivas, K & Rao, P, 2021), highlighting that combining management efficiency and liquidity indicators provides a more comprehensive understanding of bank stability than relying on single-ratio assessments. The observed improvement in management efficiency from 2023 to 2024 suggests that Afghan banks are increasingly adopting consistent and structured managerial practices, which may positively influence liquidity management in the long term. Overall, the discussion underscores that strengthening management efficiency is a key strategy for sustaining liquidity and enhancing financial stability, demonstrating the practical relevance of the CAMEL framework as a tool for evaluating and monitoring bank performance.

Suggestions for future studies:

1. Future research could broaden the scope by including a larger sample of Afghan banks or extending the study period beyond 2024 to capture longer-term trends in management efficiency and liquidity.
2. Researchers may consider incorporating additional variables, such as capital adequacy, earnings quality, or relevant external economic factors, to examine their combined influence on bank liquidity and overall stability.
3. Qualitative approaches, such as interviews with bank managers or case studies, could complement quantitative analyses and provide deeper insights into the practical strategies and challenges involved in effective liquidity management.

4. Future studies may also investigate the role of technological adoption, digital banking practices, and innovations in risk management, and how these factors impact both management efficiency and liquidity performance.

Limitations of the Study:

Conducting research on the performance of Banks of Afghanistan involved certain practical constraints. Access to comprehensive and consistently reported financial data was limited, as not all banks publish detailed information for every period. Additionally, the study relied exclusively on secondary data, which restricted the opportunity to capture qualitative perspectives from bank managers or other stakeholders. Despite these limitations, the research provides valuable empirical insights into the relationship between management efficiency and liquidity in Afghan banks during the 2010–2024 period, offering a foundation for future studies and practical applications in the banking sector.

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