



## **An Empirical Assessment of the Determinants of Financial Performance of Commercial Banks in Afghanistan**

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### **ABSTRACT**

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The primary aim of the current paper is to gauge the impact of bank-specific/internal, and macroeconomic/external factors on the financial performance of Afghanistan's commercial banks. For this purpose, data from 16 commercial banks was employed ranging from a time series from 2007 – 2016. The study is limited by the availability of recent data. This study employs the random effects model. This model is chosen using the Hausman test, which rendered random effects as the optimal technique for this study. Banking performance is gauged using return on assets (ROA) and net interest margin (NIM) assumed to be the functions of salient internal and external factors. This paper finds that capital adequacy and asset quality positively influence NIM, while inflation and GDP exert negative impacts on it. Likewise, ROA is positively influenced by capital adequacy, asset quality, liquidity management, & GDP. Conversely, management efficiency negatively affects ROA. These findings indicate that banks can greatly enhance their profits by improving management and decreasing the credit/asset ratio. This indicates a strong influence of internal factors on Afghanistan's commercial banks.



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## **1. Introduction**

Financial systems encompass several participants, including borrowers, lenders, and a variety of institutions such as banks, stock exchanges, and insurance companies, who play an active role in facilitating the flow of funds and assets (Johnson., 2023). The financial system facilitates the accumulation of money and assets for investors, hence making a significant contribution to economic advancement. Furthermore, it facilitates the process of borrowing and lending as necessary, thereby enabling the redistribution of funds among various sectors of an economy (Johnson., 2023; Juneja, 2015).

The financial system provides a highly convenient means of payment for items/goods and services, exemplified by the check system and credit card systems. Broadly speaking, the financial system encompasses a collection of institutions, including banks, insurance firms, and stock exchanges, which facilitate the transfer of monetary resources. Financial systems are present at several levels, including within individual firms, across specific regions, and on a global scale. The exchange of current cash between borrowers, lenders, and investors serves as a means to finance various initiatives, which can be categorized as either consumption or productive investments, with the aim of generating a financial return on their assets. The financial system encompasses a framework of regulations and conventions employed by borrowers and lenders to determine the allocation of funding for various projects, the selection of project financiers, and the conditions governing financial agreements (Kerpel, 2019).

The financial system performs various roles, which encompass but are not limited to, enabling the process of payments, mobilizing savings, and distributing resources. The overarching aim of a proficient financial system is fulfilling various essential activities, such as supporting the smooth flow of payments, mobilizing savings from individuals and institutions, and effectively allocating capital resources. A major function of the insurance and derivatives markets in the financial system is to reduce risk, which is a necessary component of both individual and business endeavors. The financial system serves as an efficient mediator, enabling the transfer of savings.

During the designated time frame, the banking sector in Afghanistan experienced substantial reforms aimed at enhancing the regulatory framework. The aforementioned reforms encompassed various initiatives aimed at bolstering the central bank's supervisory and regulatory capabilities, enhancing risk management protocols, and implementing further regulations to combat money laundering and terrorist funding. The main objective of these changes was to establish and maintain the stability as well as the integrity of the banking industry, safeguard the rights of depositors, and foster investor trust in the financial system. Consequently, the banking industry in Afghanistan saw enhanced resilience and improved capacity to endure external shocks and crises (LAILA, 2008; Pavlovic & Charap, 2009; Sopiko, 2014).

Notwithstanding the considerable reforms implemented in Afghanistan's banking system, there remain unresolved concerns that necessitate attention. One of the primary obstacles lies in the absence of financial inclusion, as a significant segment of the populace remains without access to banking services. Furthermore, the security situation within the country continues to be delicate, hence presenting a potential threat to the overall stability of the financial sector. Nevertheless, it is vital to acknowledge that there exist future possibilities, wherein additional reforms could be implemented to augment financial inclusion and stimulate economic growth. In general, the implemented changes in Afghanistan's banking sector have been regarded as a constructive measure in the pursuit of establishing a more robust and successful economy (Pavlovic & Charap, 2009; Pernia, Bell, & Maimbo, 2005; Rostom, 2018; Sopiko, 2014).

The primary purpose of the Modernizing Afghan State-Owned Banks Project is enhancing the banking industry in Afghanistan through the implementation of measures aimed at enhancing corporate governance and operational efficiency within state-owned banks. The objective of the initiative is to enhance the financial performance of banks, expand their reach to underserved areas, and strengthen their ability to facilitate private sector development (Rostom, 2018).

The evaluation of banking performance is typically categorized into two primary components: bank-specific/internal and macroeconomic/external. These factors exert a substantial influence on the overall performance of financial institutions (Hassan Al-Tamimi, 2010). Some of the important internal factors include variables such as an internal oversight board, internal control unit, and internal decisions of the senior management. External influences encompass both sectoral and countrywide elements that go beyond the purview of bank

managers and are beyond their control. Both sets of factors can potentially influence financial institutions, commercial banks, and their performance (Gul, Irshad, & Zaman, 2011).

To gauge the performance of commercial banks, several variables/indicators are used. Some of these include the net income margin (NIM), return on assets (ROA), & capital adequacy (Bassey, Asinya, & Elizabeth, 2014). Numerous studies have assessed the significance of various internal/bank-specific and external/economy-wide elements in influencing the performance of banks (Angbazo, 1997; Berger, Herring, & Szegö, 1995; Goddard, Molyneux, & Wilson, 2004; Guru, Staunton, & Balashanmugam, 2002; Hassan & Bashir, 2003; Kosmidou, Tanna, & Pasiouras, 2005; Mamatzakis & Remoundos, 2003; Smith, Staikouras, & Wood, 2003). Among the relevant studies, Gul et al. (2011) found that both internal/bank-specific and external/macro variables exert a considerable impact on banking performance. However, these findings vary across countries. On the other hand, Alkassim (2005) found that it is the internal factors that primarily affect a bank's profitability. Notwithstanding, Demirgüç-Kunt and Huizinga (1999) studied external factors and found that one important external factor, i.e. inflation, has a direct bearing on ROA.

It is essential to note that regardless of their respective significance, both internal and external influences have a potent role in influencing the performance of a bank. The interconnection between micro and macro elements is facilitated through a wide array of channels. The examination of these links is conducted comprehensively over a diverse array of both industrialized and developing nations. Nevertheless, it is pertinent to note that, to the best of the authors' knowledge, there is a lack of empirical research undertaken thus far to examine the various aspects that influence the performance of commercial banks in Afghanistan. The overarching goal of this paper is to address this research gap by undertaking an assessment of the impact of internal and external factors on the banking performance in Afghanistan.

This paper begins with a set of salient questions. Specifically, it asked whether internal factors affect the return on assets, conceptualized as banking performance. Likewise, it asks whether external factors also influence the financial performance of Afghanistan's commercial banks. Answering these questions helps understand the determinants of the financial performance of Afghan banks. This will be useful in designing policies to enhance banks' performance and consequently enhance banking performance in the country under study.

The primary aim of this study is to evaluate the potential impact of bank-specific/internal and external/macro factors on the performance of Afghan commercial banks. The key contribution of this paper is providing empirical evidence from a war-torn country like Afghanistan on which a scant number of empirical studies currently exist in the relevant literature. Although a vast literature exists on the banking sector profitability in developed/advanced countries, little work is done on the factors determining banking performance in conflict-affected developing economies (Akhavain, Berger, & Humphrey, 1997). This is particularly valid in the case of Afghanistan where few empirical studies exist on the banks of Afghanistan. Thus, this study provides much-needed empirical evidence on a country that is the flash point in terms of conflict, humanitarian efforts, and aid, as well as an influx of financial assistance from all over the world. Another contribution of the study is a comprehensive analytical plan. This is to say that it not only assesses the salience of internal but external factors of banking performance as well. Thus, it provides useful insights into Afghanistan's banking sector to financial analysts, foreign donors, and policymakers. Moreover, instead of one, this study undertakes the case of three types of banks. These include private, public, and foreign banks. This help provides a detailed insight into the banking industry of the country. Finally, the study also serves as an important piece of scholarly work and useful information for bank managers at large.

## **2. Literature Review**

A bank's extent of profitability is assessed using a diverse range of factors which are generally categorized into internal or bank-specific and external or macroeconomic factors. Bank-specific/internal factors are sometimes also called micro drivers or determinants of banks' profitability that relates to the bank themselves. External or macro factors of profitability are not concerned with the banks' internal management practices but with the broader economic environment and legal or political scenario which considerably impacts the performance and working of banks as well as financial institutions/organizations. The effect of both categories of factors has extensively been studied across countries.

Some influential studies on factors determining bank profitability include (Bikker & Hu, 2002; Bourke, 1989; Demirgüç-Kunt & Huizinga, 1999; Goddard et al., 2004; Haslem, 1968; Short, 1979). These studies predominantly focus on the relationship between business cycles and banking profits. Another strand predominantly studies the US banking system or market economics broadly (Barajas, Steiner, & Salazar, 1999; Berger, Hanweck, & Humphrey, 1987; Neely & Wheelock, 1997). These studies tests the salience of both internal and external factors. They find that among internal factors, liquidity management, capital, and effective management are crucial factors to banking performance. Likewise, they find the size of the economy, and economies/diseconomies of scale in the market are important external factors in determining banking performance. Across similar lines, Demirgüç-Kunt and Maksimovic (1998) argued that a mix of legal, economic, and administrative factors like corruption and firm size are consequential in determining bank profitability. Size is an important factor that can be detrimental in determining the bank capital's adequacy since larger banks tend to acquire capital that is less expensive. During uncertain periods, financial institutions choose to diversify their business portfolios to minimize risks. Likewise, they divide risk into two points namely credit and liquidity risk (Haidary & Abbey, 2018).

The present study gauged the drivers of financial performance in the commercial banking sector of Afghanistan. Findings indicate that, barring the liquidity variable, internal factors of banks exert a considerable influence on their profitability. Furthermore, it was observed that external economic factors had minimal impact on financial performance, with a confidence level of 5%. Similarly, Mohammady (2019) also conducted a study on the financial performance of public and private banks in Afghanistan and found that private banks perform comparatively superior than public banks in Afghanistan. Ahmed, Majeed, Thalassinou, and Thalassinou (2021) study also examined the specific and macroeconomic factors affecting banks and reached a conclusion that operational efficiency, bank size, and return on assets (ROA) had a substantial negative effect on non-performing loans (NPLs). Conversely, credit growth, net interest margin, loan loss provision, and bank diversification have a large positive influence on NPLs. Moreover, non-performing loans (NPLs) exhibit a notable positive correlation with elevated interest rates, currency rates, and political risk, while demonstrating an inverse relationship with GDP growth. In a study conducted by Al Zaidanin (2020), an analysis was undertaken to assess the financial performance of commercial banks operating in Jordan. The empirical evidence supports the conclusion that noninterest income to total assets and net interest income to total loans and advances have a statistically significant positive influence on both metrics of bank profitability.

The association between the profitability of banks and the factors that can influence it exhibits variation across different research projects. One example of a study conducted by Molyneux and Thornton (1992) reveals a statistically significant inverse correlation between liquidity and profitability. Nevertheless, Bourke (1989) presents findings that indicate a detrimental influence of credit risk on profitability. This phenomenon arises as a result of the direct correlation between the risk exposure of economic institutions and the increase of outstanding loans. This suggests that the occurrence of these credit losses has led to diminished returns for a significant number of investors in commercial banks. The concept of profitability is

intricately related to the notion of successful management. Bank charges play a crucial role in enhancing profitability. A considerable number of studies have been undertaken on the premise that the inclusion of an expenditure variable is essential in the cost component of a conventional microeconomic production function. For instance, the study conducted by Bourke (1989) and Molyneux and Thornton (1992) examines the correlation between bank profitability and enhanced management quality, revealing a favorable association between the two variables. Similarly, exogenous control factors such as interest rates and inflation, which serve as indicators of market conditions, can exert a considerable influence over the profitability of a bank.

The drivers of bank profitability have been studied across several countries. For instance, Guru et al. (2002) examined the factors predicting the profitability of 17 Malaysian commercial banks using data from 1986 till the year 1995. The presumed profitability drivers were categorized into bank-specific/internal and macro/external factors. Liquidity, solvency, and expense management are included in the bank-specific factors. Likewise, the exchange rate, GDP, and inflation were included as external factors. The study finds that managing or administering the expenditure proficiently contributes towards enhanced bank profits. Among the external/macroeconomic factors, higher interest rates were detrimental to bank profits. Moreover, it is worth noting that inflation had a distinct influence on the performance of banks. In a separate paper, Chantapong (2005) conducted an investigation with the objective of identifying the factors influencing the performance of international and domestic banks operating in Thailand over the period from 1995 to 2000. The study reveals that in times of crisis, there was a consistent decrease in credit exposure across all banks. Moreover, subsequent to the resolution of the crisis, there was a subsequent progression towards enhancing the profitability of banks. Upon conducting a comparative analysis of the profitability of domestic as well as foreign banks, it was seen that the profitability of foreign banks surpassed the average profitability exhibited by banks of domestic nature. Nevertheless, during the years following the crisis, there was no discernible disparity in the profitability between these two categories of banks. Similarly, the performance of Chinese banks during the period from 1999 to 2006 was examined by Heffernan and Fu (2008).

The researchers identified net interest rates as a significant factor influencing the profitability of banks. A study was undertaken by Ben Naceur and Goaid (2008) on the Tunisian case study spanning the years 1980 to 2000. The researchers evaluated the influence of the bank's financial structure and macroeconomic variables on its profitability and interest margins. The study revealed a positive correlation between the level of capital held by banks and their interest margins and profitability. On the other hand, there exists a negative correlation between the size of a bank and its profitability. The research additionally discovered that enhancements in stock markets have a good impact on the profitability of banks. Similarly, the study conducted found that private banks exhibit higher levels of efficiency in comparison to government banks. Ultimately, the study observed that there was no discernible influence of macroeconomic conditions on the profitability of banks in Tunisia. Naceur and Omran (2011) conducted a study examining the impact of bank regulation, concentration, and institutional development on the intermediation margin and profitability of commercial banks in the Middle East and North Africa region. The investigation encompassed the time frame spanning from 1989 to 2005. The researchers have identified a positive correlation between the capitalization levels of banks and credit risk, as well as the resulting effects on intermediation margin, cost efficiency, and overall bank profitability. The study also revealed that there was no observable impact of financial development and macroeconomic variables on the bank's performance.

Numerous other researchers have also conducted investigations on the determinants influencing the success of commercial banks. The study conducted by Flamini, McDonald, and Schumacher (2009) revealed that the profitability of commercial banks is highly influenced by the return on assets and the net interest margin. Similarly, the study conducted by Zaman (2011) revealed that capital and deposits exerted a substantial impact on the profitability of banking institutions. The findings presented in this study were further validated by the research

conducted by Ben Naceur and Goaid (2008), as well as by the studies conducted by Barajas et al. (1999); Ben Naceur and Goaid (2008); Berger et al. (1987); Berger et al. (1995); Demirgüç-Kunt and Huizinga (1999). In their study, Guru et al. (2002) analyzed the dataset of 17 banks to investigate the factors influencing the performance of commercial banks during the period from 1986 to 1995. The researchers discovered that the efficient control of expenses is the primary factor influencing profitability.

The aforementioned studies provide a comprehensive overview of a wide array of scholarly works. Although this research extensively covers numerous studies, it notably overlooks Afghanistan as a result of little empirical investigations conducted in the country. In order to address this deficiency, the present study seeks to objectively assess the factors that influence the financial performance of banks in Afghanistan.

### **3. Methodology**

#### **3.1. The Data**

In this study, relevant data pertaining to the needed variables is obtained from the balance sheets and income statements of all the banks under consideration. Similarly, the financial position statement was sourced from the official websites of the respective banks and the publication of the Central Bank of Afghanistan, namely DA Afghanistan Bank (DAB). This dataset consists of secondary data obtained from 16 commercial banks over a span of 10 years, specifically from 2007 to 2016. The period refers to the temporal range throughout which the data is accessible. Therefore, the scope of this investigation is constrained by the unavailability and lack of authenticity of recent data. During the designated study period, it was observed that there were a total of 16 commercial banks functioning within the borders of Afghanistan. These banks can be classified into three distinct categories, namely private, public, and foreign banks.

##### **3.1.1. Theoretical Framework**

Recent studies have shown that there are various determinants of banks' profitability. Le and Ngo (2020) found that competition increases bank profitability. Another study Hasan, Manurung, and Usman (2020) used ROA and ROE as a bank's profitability indicators and found that assets act as significant variable. Horobet, Radulescu, Belascu, and Dita (2021) studies the bank profitability in central and eastern European countries and the negative impact of inflation, unemployment, loan rates that non perform, capitalization, and concentration rates. Elekdag, Malik, and Mitra (2020) in their study found nonperforming loan as a big hurdle in bank profitability in the Europe. Even for low-income countries like Uganda, nonperforming loans were found significant in affecting bank profitability adding with liquidity ratio and market sensitivity risk (Katusiime, 2021). For Iraqi banks, Jadah, Alghanimi, Al-Dahaan, and Al-Husainy (2020) assessed the internal and external profitability factors. They concluded that bank profitability is increased with Growth in GDP, the effectiveness of the government, size of the bank, ratios of equity to total assets, and total loans to total assets. While it decreases with inflation, risk of credit, rate of interest, political instability, and unemployment. But Derbali (2021) concluded no effect of inflation on banks' profitability in Morocco. It shows that researchers are not agree as to specific variables for bank profitability but various researchers have used different variables for measuring bank profitability. Hence, this research will pick the most suitable for Afghanistan with the surety of its availability.

#### **3.2. The Model**

The study aims to identify the ternalnd external factors that influence the performance of commercial banks in Afghanistan. The financial performance is conceptualized in terms of NIM and ROA. For this purpose, the following regression model is specified.

$$\pi_{it} = \alpha_0 + \alpha_1 CA_{it} + \alpha_2 AQ_{it} + \alpha_3 ME_{it} + \alpha_4 LM_{it} + \alpha_5 GDP_{it} + \alpha_6 INF_{it} + \varepsilon_{it} \quad (1)$$

where  $\pi_{it}$  is the Performance of the bank  $i$ th times  $t$ , expressed by ROA and the NIM. Likewise,  $\alpha_0$  is the intercept,  $CA_{it}$  is the Capital adequacy of  $i$ th bank times  $t$ ,  $AQ_{it}$  represents the asset quality of  $i$ th bank at time  $t$ ,  $ME_{it}$  is the efficiency of banking administration in time period  $t$ ,  $LM_{it}$  is the liquidity ratio of the  $i$ th bank at time  $t$ ,  $GDP_{it}$  denotes the gross domestic product (GDP) at time  $t$ ,  $INF_{it}$  represents the average annual inflation in  $t$  time period,  $\alpha_1$  to  $\alpha_5$  are coefficient parameters,  $\varepsilon_{it}$  denotes the error/stochastic term,  $i$  is the cross-section and  $t$  is the time identifier.

It is pertinent to mention that the dependent variable of the current study is banking performance, which is measured using ROA and NIM. Return on investment (shortly ROA) is simply defined as the profit prior to tax deductions divided by the total assets owned or possessed (Malik, 2011). Several scholars argue that return on assets (ROA) can act as a key indicator of the operational efficiency and performance of commercial banks as well as other financial institutions (Petersen & Schoeman, 2008). On the other hand, the net interest margin or NIM is a measure that assesses the difference between the interest income earned by banks as well as other financial institutions via lending and the amount of interest that banks or financial institutions are required to pay to their lenders (Suu, Luu, Pho, & McAleer, 2020). Several studies find that the net interest margin (NIM) plays an important role in a bank's profitability. Specifically, it is considered to be positively contributing to banks' profit – the higher the rate of interest, the higher would be the profits of banks or financial institutions as a result Puspitasari, Sudiyatno, Hartoto, and WIDATI (2021).

### 3.3. Econometric Techniques

To achieve the study's objectives, the fixed effect technique is used. To arrive at this choice, the Hausman test was used to decide the optimal choice between the fixed and random effect models.

#### 3.3.1. The Random Effects Model

A random effects model is also called a variance components model. Under this specification, it is expected that the desired variation in NIM and ROA is influenced by bank-specific attributes and outside factors. Under this situation, the Random effect model (RE) is utilized instead of the fixed effect model (FE). A particular advantage of the random effects model is its ability to include time-invariant variables. An alternative name for the random effects model is the error component model.

#### 3.3.2. The Fixed Effects Model

A fixed effects model is a specification where the parameters of the model are non-random or fixed. A key advantage of this model is its ability to adjust all fixed sources of heterogeneity between the subjects which might bias the results of the model if not controlled for properly.

#### 3.3.3. The Hausman Test

To compare and choose between the two specifications, the Hausman test is utilized. The Hausman test is often employed in such cases given its underlying simplicity (Amini, Delgado, Henderson, & Parmeter, 2012; Zeb, Nawaz, & Waqar, 2022).

The study hypothesizes that the random effects model yields efficient and consistent estimates (null hypothesis). If this hypothesis is rejected, the study will use the fixed effects model, and vice versa.

When dealing with panel data, we have to choose between the fixed and random effect models. However, prior to this, we need to solve for the time-variant heterogeneity. This stems from time-invariant factors such as culture, district-specific conditions, attitudes toward, geography and location, etc. If these factors do not alter over time, then the fixed effects model will yield consistent results.

If the p values are less than 0.05, then the null hypothesis stands rejected. If this happens, fixed effects will be rendered as the optimal model and vice versa.

After the necessary computations, the study could not reject the null hypothesis. Hence, the random effects model is utilized for data analysis, in order to meet the study objectives and answer the research questions.

## 4. Results

### 4.1. Regression Results for the Baseline Model (Random Effects)

The results are reported in Table 1. Dependent Variables are NIM and ROA.

**Table 1**  
**Regression Results for the Baseline Model (Random Effects)**

	Explanatory variables	NIM	ROA
Internal Variables	CA	0.0025*** (2.77)	4.3876** (2.42)
	AQ	0.0006** (2.44)	2.8052** (2.09)
	LM	0.0018 (0.34)	47.034* (1.82)
	ME	-0.005 (-0.59)	-1.233*** (-4.18)
External Variables	INF	-0.0204* (-1.18)	0.1554 (0.45)
	GDP	-0.0118*** (-3.68)	12.563*** (25.38)
	Constant	0.5750*** (3.15)	-25.052** (12.65)
	No.of.obs	160	160
	R-squared	0.2327	0.8357
	Prob	0.0000	0.0000

Note: Parentheses in above table depict standard errors. A single asterisk depicts statistical significance at ten percent. Two asterisks depict statistical significance at five percent. Three asterisks depict statistical significance at a one percent level.

Table 1 shows the econometric output of a random effect model. To account for the differential impact, the model under analysis has inducted variables of both nomenclatures, i.e., the variables of internal and external nature. Table 1 demonstrates that a major share of the bank-related (internal) factors exerts a significant as well as a statistically significant positive effect on NIM and ROA relating the Afghan banks. Specifically, it depicts that all of the bank-specific variables, i.e., capital or asset adequacy, assets quality and liquidity management have statistically significant positive relationships with the indicators of bank performance namely NIM and ROA. Conversely, management efficiency, inflation, and GDP negatively affect banking efficiency.



Table 1 further points to the positive and statistically significant impact of capital adequacy (CA) on the outcome variable of the study. This implies that increasing capital encourages banks to invest in safer assets such as securities or loans carrying relatively lower levels of risks (low risk profile). Consequently, it can potentially boost banking performance. Specifically, enhancing capital adequacy by one unit is likely to increase the NIM by 0.0025 and ROA by 4.3876 times, holding other things constant. Likewise, asset quality (AQ) also positively affects the dependent variables, namely NIM and ROA. This implies that good asset quality or low outstanding loans are related to the good performance of the bank. Our results confirm Hasan et al. (2020) outcomes that asset increases ROA of banks.

Loans constitute the largest proportion of assets which produces revenue for further investment (capital). Specifically, the results indicate that increasing asset quality (AQ) by one unit is likely to increase NIM by 0.0006 times and ROA by 2.8052 times. Another explanatory variable is liquidity management (LM), which has a null effect on NIM. Conversely, increasing LM by one unit is likely to increase ROA by 47.034 times. Liquidity management was also a significant factor in previous studies by Barajas et al. (1999); Berger et al. (1987); Neely and Wheelock (1997). So a bank can earn more profit if it is able to manage its liquidity well. On the other hand having liquidity was a negative predictor of profitability in the study by Molyneux and Thornton (1992). Hence our study does not support this.

Another explanatory variable is the efficiency in management (ME), which has a null effect on NIM. On the other hand, increasing ME by one unit is likely to reduce ROA by 1.233 times. It may be due to the fact that liquidity management is related more to the fulfillment of depositors' obligations (provided by depositors) than to investors. Our results are in contradiction with Bourke (1989); Molyneux and Thornton (1992), who detected that efficiency management and profitability exhibit a positive association between them.

Furthermore, the relationship between the dependent variable, GDP, and inflation is found out to be of mixed nature. Specifically, inflation has a null relationship with ROA but is negatively related to NIM. A one-unit increase in inflation is likely to reduce NIM by 0.0204 times. A nearly similar pattern of relationship is observed for the Gross Domestic Product (GDP) as well. Specifically, if the GDP is raised by one-unit, it is likely that it will translate into a reduction in the NIM by 0.0118 times. Conversely, a one-unit increase in GDP is likely to increase ROA by 12.563 times. These findings support the notion that GDP growth may not necessarily relate positively to the efficiency of the banks (Flamini et al., 2009). Likewise, the peculiar relationship of inflation indicates that it is likely that inflation affects the price-quality ratio, purchasing ability or capacity of the individuals/masses, and the real rate of interest that is received/charged by the banks. This finding about inflation relates to Athanasoglou, Brissimis, and Delis (2008), who made a similar observation after studying the bank, industry, and macroeconomic factors determining or contributing to bank profitability. Our results confirm recent studies by Horobet et al. (2021) and Jadah et al. (2020) for inflation however Jadah et al. (2020) finds that for the Iraqi case study, GDP and bank profitability exhibit a relationship that is positive in nature. For Morocco, no effect on inflation was found by Derbali (2021).

## **5. Discussion**

This study strives to pinpoint the variables contributing to the fashion in which the Afghan banks perform in terms of their profitability. This study finds that capital adequacy and the quality of assets significantly contribute to banking performance in Afghanistan. Our results confirm the outcomes of Hasan et al. (2020) who also emphasize on the quality of assets for elevating banks' profitability. Hence it can be asserted that it is not just the existence of assets that is important for the profitability of the banks but the quality of these assets.

Conversely, the nature of this association tends to get relatively weaker when it comes to liquidity and efficacy in terms of management. Liquidity management was also a significant factor in previous studies by Barajas et al. (1999); Berger et al. (1987); Neely and Wheelock (1997). Hence this research proves the previous studies but the strength of association in the case of Afghanistan is relatively weak. Hence, a country effected by war and internal conflicts, liquidity management has a role to play for bank's returns on assets.

Furthermore, the study detects that banking performance, capital adequacy, and the quality of assets exhibit a positive association among them. Conversely, the nature of this association is negative with management effectiveness. Our results are in contradiction with Bourke (1989); Molyneux and Thornton (1992), hence it is concluded that management efficiency does not increase bank's profitability in case of Afghanistan. The study also concludes that low overdue loans and a greater level of quality of assets are profitable more than other items. There are two recent studies by Horobet et al. (2021) and Elekdag et al. (2020) which confirms our findings that low performing loans effects banks profitability negatively. Hence loans need to be managed well as Jadah et al. (2020) finds in Iraqi case that bank management increases its profitability.

One important takeaway inferred from the study postulates that liquidity management lacks a meaningful association with banking performance, conceptualized through NIM but exhibits an association with ROA that is positive and statistically significant at the same time. This indicates that better banking performance cannot always stem from maintaining more of liquid assets. Rather it is about the superiority of the assets, the adequacy of capital, and efficiency, among others. This means that the liquidity status of the banks generally works towards efficiency. This also implies that the effect of liquidity on the effectiveness of banking performance is minor, as found by the paper under discussion.

From the macroeconomic perspective, the inflation was found to decrease commercial bank's profitability. It was as found that the GDP increase does not necessarily show the profitability of the commercial banks. In fact bank's profitability decreases with an increase in GDP which confirm Flamini et al. (2009) for GDP and ROA relationship. These results confirm the outcomes of Horobet et al. (2021) and contradicts Jadah et al. (2020) for Iraq in which GDP and bank profitability exhibit a relationship that is positive in nature. For Morocco, no effect on inflation was found by Derbali (2021). Although Iraq and Afghanistan are both war-hit, the present scenarios are altogether different and it may be due to management efficiency that the inflation has elevating effects on ROA.

## **6. Conclusion**

Our study arrives at very important conclusions. First of all, the liquidity management and quality of assets has a strong positive effect on the profitability of banks in Afghanistan. Hence these needs special attention. There is negative association between inflation and bank's profitably and GDP and bank's profitability. Hence, mangers can only focus on the quality of the assets they retain and the bank's liquidity as they have no control over macroeconomic variables. in the currency case, management efficiency proved negative on bank's efficiency, hence banks in Afghanistan needs to train its mangers for efficiency and follow theory of efficiency. Credit adequacy and asset quality proved positive on NIM and ROA but as management efficiency exerts negative effect, all the other variables can be mishandled. Hence this study stress on capacity building of the management.

### **6.1. Policy Recommendations**

The study concludes that bank managers can improve efficiency by investing their liquid assets to generate income. The overall macroeconomic situation must also be kept in mind while

devising strategies for enhancing banking performance. Specifically, bank managers need to be wary of inflation, since it exerts a negative influence on the operation of Afghan banks. Generally, the external variables outside the control of the bank managers exert a potent effect on fashion in which the Afghan banks operate and perform. These findings, to a larger extent, aligns with the theory of efficiency structure, where the improvement in management efficiency leads to higher productivity.

### Authors Contribution

Khalilullah: conceptualized the idea and wrote the introduction and literature review

Fahim Nawaz: wrote the discussion part

Ali Zeb: do the analysis and interpretation

Noor Jehan: proof read the paper and finalized it

### Conflict of Interests/Disclosures

The authors declared no potential conflicts of interest w.r.t the research, authorship and/or publication of this article.

### References

- Ahmed, S., Majeed, M. E., Thalassinou, E., & Thalassinou, Y. (2021). The impact of bank specific and macro-economic factors on non-performing loans in the banking sector: evidence from an emerging economy. *Journal of Risk and Financial Management*, 14(5), 217. doi:<https://doi.org/10.3390/jrfm14050217>
- Akhavain, J. D., Berger, A. N., & Humphrey, D. B. (1997). The effects of megamergers on efficiency and prices: Evidence from a bank profit function. *Review of Industrial Organization*, 12(2), 95-139. doi:<https://doi.org/10.1023/A:1007760924829>
- Al Zaidanin, J. (2020). A study on financial performance of the Jordanian commercial banks using the CAMEL model and panel data approach. *International Journal of Finance & Banking Studies (2147-4486)*, 9(4), 111-130. doi:<https://doi.org/10.20525/ijfbs.v9i4.978>
- Alkassim, F. A. (2005). The profitability of Islamic and conventional banking in the GCC countries: A comparative study. *13(1)*, 5-30.
- Amini, S., Delgado, M. S., Henderson, D. J., & Parmeter, C. F. (2012). Fixed vs random: The Hausman test four decades later. In *Essays in honor of Jerry Hausman* (Vol. 29, pp. 479-513): Emerald Group Publishing Limited.
- Angbazo, L. (1997). Commercial bank net interest margins, default risk, interest-rate risk, and off-balance sheet banking. *Journal of Banking & Finance*, 21(1), 55-87. doi:[https://doi.org/10.1016/S0378-4266\(96\)00025-8](https://doi.org/10.1016/S0378-4266(96)00025-8)
- Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *Journal of International Financial Markets, Institutions and Money*, 18(2), 121-136. doi:<https://doi.org/10.1016/j.intfin.2006.07.001>
- Barajas, A., Steiner, R., & Salazar, N. (1999). Interest spreads in banking in Colombia, 1974-96. *IMF staff papers*, 46(2), 196-224. doi:<https://doi.org/10.2307/3867667>
- Bassey, N. E., Asinya, F. A., & Elizabeth, A. (2014). Determinants of dividend payout of financial institutions in Nigeria: A study of selected commercial banks. *Research Journal of Finance and Accounting*, 5(7), 74-79.
- Ben Naceur, S., & Goaid, M. (2008). The determinants of commercial bank interest margin and profitability: evidence from Tunisia. *Frontiers in finance and economics*, 5(1), 106-130.
- Berger, A. N., Hanweck, G. A., & Humphrey, D. B. (1987). Competitive viability in banking: Scale, scope, and product mix economies. *Journal of monetary economics*, 20(3), 501-520. doi:[https://doi.org/10.1016/0304-3932\(87\)90039-0](https://doi.org/10.1016/0304-3932(87)90039-0)
- Berger, A. N., Herring, R. J., & Szegö, G. P. (1995). The role of capital in financial institutions. *Journal of Banking & Finance*, 19(3-4), 393-430. doi:[https://doi.org/10.1016/0378-4266\(95\)00002-X](https://doi.org/10.1016/0378-4266(95)00002-X)

- Bikker, J. A., & Hu, H. (2002). Cyclical patterns in profits, provisioning and lending of banks and procyclicality of the new Basel capital requirements. *PSL Quarterly Review*, 55(221), . doi:<https://doi.org/10.13133/2037-3643/9907>
- Bourke, P. (1989). Concentration and other determinants of bank profitability in Europe, North America and Australia. *Journal of Banking & Finance*, 13(1), 65-79. doi:[https://doi.org/10.1016/0378-4266\(89\)90020-4](https://doi.org/10.1016/0378-4266(89)90020-4)
- Chantapong, S. (2005). Comparative study of domestic and foreign bank performance in Thailand: The regression analysis. *Economic Change and Restructuring*, 38(1), 63-83. doi:<https://doi.org/10.1007/s10644-005-4523-5>
- Demirgüç-Kunt, A., & Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability: some international evidence. *The World Bank Economic Review*, 13(2), 379-408. doi:<https://doi.org/10.1093/wber/13.2.379>
- Demirgüç-Kunt, A., & Maksimovic, V. (1998). Law, finance, and firm growth. *The journal of finance*, 53(6), 2107-2137. doi:<https://doi.org/10.1111/0022-1082.00084>
- Derbali, A. (2021). Determinants of the performance of Moroccan banks. *Journal of Business and Socio-economic Development*, 1(1), 102-117. doi:<https://doi.org/10.1108/JBSED-01-2021-0003>
- Elekdag, S., Malik, S., & Mitra, S. (2020). Breaking the bank? A probabilistic assessment of Euro area bank profitability. *Journal of Banking & Finance*, 120(11), 105949. doi:<https://doi.org/10.1016/j.jbankfin.2020.105949>
- Flamini, V., McDonald, C. A., & Schumacher, L. B. (2009). The determinants of commercial bank profitability in Sub-Saharan Africa. (1).
- Goddard, J., Molyneux, P., & Wilson, J. O. (2004). The profitability of European banks: a cross-sectional and dynamic panel analysis. *The Manchester School*, 72(3), 363-381. doi:<https://doi.org/10.1111/j.1467-9957.2004.00397.x>
- Gul, S., Irshad, F., & Zaman, K. (2011). Factors Affecting Bank Profitability in Pakistan. *Romanian Economic Journal*, 14(39).
- Guru, B. K., Staunton, J., & Balashanmugam, B. (2002). Determinants of commercial bank profitability in Malaysia. *Journal of Money, Credit, and Banking*, 17(1), 69-82.
- Haidary, Q., & Abbey, B. (2018). Financial performance of commercial banks in Afghanistan. *International Journal of Economics and Financial Issues*, 8(1), 242.
- Hasan, M. S. A., Manurung, A. H., & Usman, B. (2020). Determinants of bank profitability with size as moderating variable. *Journal of applied finance and banking*, 10(3), 153-166.
- Haslem, J. A. (1968). A statistical analysis of the relative profitability of commercial banks. *The journal of finance*, 23(1), 167-176. doi:<https://doi.org/10.2307/2325316>
- Hassan Al-Tamimi, H. A. (2010). Factors influencing performance of the UAE Islamic and conventional national banks. *Global Journal of Business Research*, 4(2), 1-9.
- Hassan, M. K., & Bashir, A.-H. M. (2003). *Determinants of Islamic banking profitability*. Paper presented at the 10th ERF annual conference, Morocco.
- Heffernan, S., & Fu, M. (2008). The determinants of bank performance in China. Available at SSRN 1247713(8), 28. doi:<https://doi.org/10.2139/ssrn.1247713>
- Horobet, A., Radulescu, M., Belascu, L., & Dita, S. M. (2021). Determinants of bank profitability in CEE countries: Evidence from GMM panel data estimates. *Journal of Risk and Financial Management*, 14(7), 307. doi:<https://doi.org/10.3390/jrfm14070307>
- Jadah, H. M., Alghanimi, M. H. A., Al-Dahaan, N. S. H., & Al-Husainy, N. H. M. (2020). Internal and external determinants of Iraqi bank profitability. *Banks and Bank Systems*, 15(2), 79-93. doi:[http://dx.doi.org/10.21511/bbs.15\(2\).2020.08](http://dx.doi.org/10.21511/bbs.15(2).2020.08)
- Johnson., P. (2023). Financial system.
- Juneja, P. (2015). Organizing Function of Management. In: Consulted.
- Katusiime, L. (2021). COVID 19 and bank profitability in low income countries: the case of Uganda. *Journal of Risk and Financial Management*, 14(12), 588. doi:<https://doi.org/10.3390/jrfm14120588>
- Kerpel, K. (2019). *Financial System: Definition, Types, and Market Components*. Retrieved from <https://www.investopedia.com/terms/f/financial-system.asp>

- Kosmidou, K., Tanna, S., & Pasiouras, F. (2005). *Determinants of profitability of domestic UK commercial banks: panel evidence from the period 1995-2002*. Paper presented at the Money Macro and Finance (MMF) Research Group Conference.
- LAILA, K. (2008). *Reform of financial system in Afghanistan*. KDI School,
- Le, T. D., & Ngo, T. (2020). The determinants of bank profitability: A cross-country analysis. *Central Bank Review*, 20(2), 65-73. doi:<https://doi.org/10.1016/j.cbrev.2020.04.001>
- Malik, H. (2011). Determinants of insurance companies profitability: an analysis of insurance sector of Pakistan. *Academic research international*, 1(3), 315.
- Mamatzakis, E., & Remoundos, P. C. (2003). Determinants of Greek commercial banks profitability, 1989-2000. *Spoudai*, 53(1), 84-94.
- Mohammady, E. (2019). A Study on Financial Performance of Private and Public Banks in Afghanistan (2014–2017). *Asian Journal of Research in Banking and Finance*, 9(4), 8-30. doi: <https://doi.org/10.5958/2249-7323.2019.0005.1>
- Molyneux, P., & Thornton, J. (1992). Determinants of European bank profitability: A note. *Journal of Banking & Finance*, 16(6), 1173-1178. doi:[https://doi.org/10.1016/0378-4266\(92\)90065-8](https://doi.org/10.1016/0378-4266(92)90065-8)
- Naceur, S. B., & Omran, M. (2011). The effects of bank regulations, competition, and financial reforms on banks' performance. *Emerging markets review*, 12(1), 1-20. doi:<https://doi.org/10.1016/j.ememar.2010.08.002>
- Neely, M. C., & Wheelock, D. C. (1997). Why does bank performance vary across states? *Federal Reserve Bank of St. Louis Review*(Mar), 27-40.
- Pavlovic, J., & Charap, J. (2009). Development of the Commercial Banking System in Afghanistan: Risks and Rewards. (8), 29.
- Pernia, J., Bell, S., & Maimbo, S. (2005). The financial sector in Afghanistan: Managing the postconflict reform process. Finance and private sector. *South Asia Region", The World Bank*.
- Petersen, M. A., & Schoeman, I. (2008). *Modeling of banking profit via return-on-assets and return-on-equity*. Paper presented at the Proceedings of the World Congress on Engineering.
- Puspitasari, E., Sudiyatno, B., Hartoto, W. E., & WIDATI, L. W. (2021). Net interest margin and return on assets: A Case Study in Indonesia. *The Journal of Asian Finance, Economics and Business*, 8(4), 727-734.
- Rostom, A. M. T. (2018). *Afghanistan-Modernizing Afghan State-Owned Banks Project*. Retrieved from
- Short, B. K. (1979). The relation between commercial bank profit rates and banking concentration in Canada, Western Europe, and Japan. *Journal of Banking & Finance*, 3(3), 209-219. doi:[https://doi.org/10.1016/0378-4266\(79\)90016-5](https://doi.org/10.1016/0378-4266(79)90016-5)
- Smith, R., Staikouras, C., & Wood, G. (2003). Non-interest income and total income stability. (4), 40. doi:<https://doi.org/10.2139/ssrn.530687>
- Sopiko, J. F. (2014). Afghanistan's Banking Sector: The Central Bank's Capacity to Regulate Commercial Banks Remains Weak. *By Special Inspector General for Afghanistan Reconstruction SIGAR*, 14-16.
- Suu, N. D., Luu, T.-Q., Pho, K.-H., & McAleer, M. (2020). Net interest margin of commercial banks in Vietnam. *Advances in Decision Sciences*, 24(1), 1-27.
- Zaman, S. J. J. A. K. (2011). Determinants of bank profitability in Pakistan: Internal factor analysis. *Yaşar Üniversitesi E-Dergisi*, 6(23), 3794.
- Zeb, A., Nawaz, F., & Waqar, H. (2022). Does Inflation and Economic Growth Affect Unemployment? Evidence From SAARC Countries. *Journal of Contemporary Macroeconomic Issues*, 3(2), 44-56.