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The Impact of Inflation Rate and Interest Rate on Islamic and Conventional Banking in Afghanistan

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Abstract— Since the first bank was established in 1933, Afghanistan's banking sector has seen a number of variations but hasn't been able to grow to its full potential because of the civil war. The implementation of dual banks in Afghanistan is investigated in this study in relation to the effects of inflation and interest rates. This research took data from World Bank Data (WBD) over a period of nineteen years. For the banking sector, inflation, which is the general rise in prices of goods and services over time, presents considerable difficulties. The objectives of this research are to analyze the effect of inflation and interest rates on conventional and Islamic banks in Afghanistan, identify potential differences between these two banking models, and provide insights for policymakers and practitioners. A mixed-methods approach is used in the research to analyze quantitative data and qualitatively examine the unique difficulties that banks in Afghanistan's economic atmosphere encounter. The findings contribute to the understanding of the relationship between interest rate, inflation rate, and the performance of both banking systems in Afghanistan. The paper concludes with recommendations for policymakers and banking institutions to enhance the stability and growth of the banking sector in Afghanistan. Interest is described as "a prefixed rate for use or borrowing of money" from an Islamic perspective. This "prefixed rate," known in Islamic economics as "riba," has been described as "something undesirable." Furthermore, by using the time series regression data technique on the annual data from 2003 to 2021, this research examines the effect of CPI inflation rate and interest rate of Banking in Afghanistan.

Keywords— inflation, Islamic banking, conventional banking, interest, Afghanistan, impact

I. INTRODUCTION

First of all, when the Da Afghanistan Bank (Central Bank of Afghanistan) was founded in 1933, the Bank-e-Millie Afghan (National Bank of Afghanistan), which previously controlled Afghanistan's governmental banking operations, acted as the system's cornerstone. With the establishment of the Da Afghanistan Bank (DAB) in 1940, the responsibilities for state-owned banking were transferred from Bank-e-Millie (BMA) to DAB [Da Afghanistan Bank, 2019]. Secondly, the term inflation is a critical macroeconomic factor that can have profound implications for the banking sector. Both banking systems in Afghanistan are subject to the influence of inflation, which affects their profitability, loan performance, investment activities, and customer behavior. Moreover, interest rates are another key factor influencing the performance and stability of banks, as they affect the cost of borrowing, lending, and returns. However, the effect of interest rates on both banking systems may differ due to the distinct nature of their operations.

This research aims to investigate the impact of interest rate and inflation rate changes on both types of banks in Afghanistan, taking into account the specific characteristics of each banking model. Islamic banking adheres to Sharia law's guiding principles, which include encouraging risk-sharing and asset-based lending while forbidding interest (riba). Conversely, interest-based transactions are the foundation of conventional banks' operations. Given these fundamental differences, it is crucial to explore how inflation affects these banking models differently and

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identify potential strategies for managing inflation-related risks.

According to Karim (2017: 28), the efforts of Islamic banks to increase their earnings will be somewhat hampered by high inflation, which will also divert their attention from their operations to accumulate more assets. A high rate of inflation will cause Islamic banks to own fewer assets, which will put tremendous pressure on them to acquire even more assets. This will result in the lowest possible rate of bank Sariah profit. On the other hand, Afghanistan is a country that relies heavily on imports and consistently maintains a negative trade balance. Data from the monetary policy section of Da Afghanistan Bank's external sector shows that in 2019, Afghanistan's imports totaled USD 6.776 billion, while its exports were around USD 0.863 billion. The mentioned results show a substantial goods trade deficit of USD 5.913 billion.

Bank liquid reserves are the assets that a bank holds that can be easily converted into cash. This includes cash on hand, deposits at the central bank, and short-term investments. In Afghanistan, inflation has been a major problem in recent years. The inflation rate in Afghanistan was 23.1% in 2021, according to the World Bank

II. LITERATURE REVIEW

There have been many research projects done to look at the factors affecting the banking system, some of which are briefly detailed in this Section.

Khan and Mirakhor (1989) provided a comprehensive overview of the principles of Islamic banking and its implications for monetary policy. The authors highlighted the prohibition of interest and the emphasis on risk-sharing, which distinguishes Islamic banking from conventional banking. This study serves as a foundation for understanding the unique characteristics of Islamic banking and its potential impact on the financial system.

Sarker (1999) focused on the profitability, liquidity, and risk management of Islamic banks in Bangladesh while assessing their performance. Due to their emphasis on risk- and profit-sharing agreements, the paper concluded that Islamic banks are less vulnerable to interest rate changes than traditional banks. This study offers factual proof of how interest rates affect Islamic banks.

In Malaysia, Haron and Ahmad (2000) looked into the connection between standard interest rates and the rate of profit on money deposited with Islamic banks. The scientists discovered that conventional interest rates have an impact on deposit rates at Islamic banks, indicating some degree of interconnectedness between the two banking systems. This study emphasizes the potential effects of interest rate changes on the deposit rates offered by Islamic banks and their ability to compete in the market.

Cihak and Hesse (2010) conducted an empirical analysis of the financial stability of Islamic banks compared to conventional banks. The study found that Islamic banks are generally more resilient to interest rate shocks due to their risk-sharing arrangements and asset-backed financing. This study offers insightful information about how changing interest rates may affect the stability of banking systems in Afghanistan.

In addition, high inflation can lead to a decline in profitability, an increase in non-performing loans, and erosion of capital (Perry, 1992; Athanasoglou et al., 2008). On another hand, Islamic banks may be less affected by inflation due to profit-and-loss sharing mechanisms and investment in real assets. However, high inflation can still reduce the profit rates of Islamic banks and increase costs. Empirical evidence shows that Islamic banks remain stable during moderate inflation, but their performance declines with very high inflation (Čihák & Hesse, 2010). Conventional banks are more exposed to inflation risk due to fixed interest rates on loans and deposits. When inflation rises, the real value of money and interest income declines, but costs continue to increase. This squeezes profit margins and can threaten the stability of conventional banks (Perry, 1992). Depositors may also withdraw funds if better returns are available elsewhere.

Kasim et al. (2009) conducted another study to look into how Islamic bank deposits behave. Using monthly data for the period of January 1999 to June 2006, this study investigates the effects of a monetary policy shock on the balance sheets of Malaysian Islamic banks. The assessment convincingly reveals that Islamic banks are more vulnerable to the effects of policy shocks than conventional banks and that the items on the balance sheets of Islamic banks are more vulnerable to interest rate changes than those of regular banks.

The findings from previous studies suggest that Islamic banks are generally less sensitive to interest rate changes compared to conventional banks. This research paper will build upon the existing literature by examining the impact

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of interest and inflation rates on both types of banks in Afghanistan, providing valuable insights for policymakers, financial institutions, and investors.

III. METHOD

I use annual data for the period 2003 to 2021, which is the interest rate, inflation rate and Bank liquid reserves to bank assets ratio of Afghanistan. The sources of data are the Annual Report of the Central Bank (Da Afghanistan Bank) and World Bank Data (WBD). Moreover, in the context of my study, the dependent variable is the bank liquid reserves to bank assets ratio, as I am trying to understand how this variable is affected by changes in the inflation rate and interest rate. The independent variables are the inflation rate and the interest rate, as they are the factors that I hypothesize may have an impact on the bank ratios.

Log (Banking Ratio) = $\alpha 0 + \alpha 1$ Inflation rate + $\alpha 2$ Interest rate + ε

- Dependent variable: Bank liquid reserves to bank assets ratio
- Independent variables: Inflation rate and Interest rate

The aim of this research is to examine the effect of inflation and interest rates on the bank assets ratio and the performance of both banking systems in Afghanistan. The research will use time series data analysis to track the changes in these variables over time. To explore the relationship between the bank ratios, interest and inflation rates, we can employ time series data analysis techniques. This would involve collecting historical data on these variables for the period from 2003 to 2021 in Afghanistan. Time series analysis methods such as correlation analysis, regression analysis, or co-integration analysis can help identify any patterns, trends, or potential causal relationships between the variables.

IV. METHODOLOGY

First of all, I would like to mention that both qualitative and quantitative research methodologies are used in this study. Moreover, I use time series data analysis because it is an optimal approach for examining the effect of interest and inflation rates on the banking system in Afghanistan, given the nature of the data being analyzed, which spans from 2003 to 2021. By employing this method, we can effectively identify and quantify the relationship between these key variables and their influence on the banking sector over the years. This analytical model enables us to observe patterns, trends, and seasonality within the data, facilitating the identification of significant factors affecting the banking system's performance. By conducting a comprehensive time series analysis, we can gain valuable insights into the dynamics between inflation rate, interest rates, and the banking sector in Afghanistan, aiding policymakers and financial institutions in making informed decisions and implementing effective strategies to ensure stability and growth within the industry.

V. RESULTS & DISCUSSION

The results below show that the values are stationary. This used the idea of statistical significance for the variables. Furthermore, the Time Series Analysis results, which are consistent with our chosen model, offer compelling statistical support for the coefficients' significance and demonstrate that changes in inflation rates and interest rates have an effect on banking systems in Afghanistan. In data analysis, the Augmented Dickey-Fuller (ADF) test is generally used to determine whether a time series is stationary. Many statistical models make the assumption of stationarity, and if this assumption is broken, the findings may be inaccurate or misleading. The ADF test specifically checks for a unit root in a time series, which is a common cause of non-stationarity.

Here, the dependent variable is BANKINGR (bank ratio), and the independent variables are INFLATION (the inflation rate) and IR (the interest rate).

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Table 1: Unit Root Test (BANKING)

Augmented Dickey-Fuller Unit Root Test on D(BANKINGR)

Null Hypothesis: D(BANKINGR) has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.609501	0.0001
Test critical values:	1% level	-2.708094	
	5% level	-1.962813	
	10% level	-1.606129	

The banking ratio in the Unit root test at (1st difference) is significant at 5%.

Table 2: Unit Root Test (Inflation Rates)

Augmented Dickey-Fuller Unit Root Test on INFLATION

Null Hypothesis: INFLATION has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.240928	0.0341
Test critical values:	1% level	-3.857386	
	5% level	-3.040391	
	10% level	-2.660551	

The inflation rate in the Unit Root Test at (Level) is Significant at 5%.

Table 3: Unit Root Test (Interest Rates)

Augmented Dickey-Fuller Unit Root Test on IR

Null Hypothesis: IR has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.346917	0.0277
Test critical values:	1% level	-3.857386	
	5% level	-3.040391	
	10% level	-2.660551	

Interest Rate in Unit Root Test at (Level) is Significant at 5%.

TABLE 4

DEPENDENT VARIABLE: LOG(BANKINGR)
METHOD: LEAST SQUARES
DATE: 06/11/23 TIME: 22:04
SAMPLE: 2003 2021
INCLUDED OBSERVATIONS:19

Variable	COEFFICIENT	Std. Error	t-Statistic	Prob.
C	4.158627	0.17995	23.1087	0.0000
INFLATION	-0.054791	0.02065	-2.652442	0.0168

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R-squared	0.292711	Mean dependent var	3.823561
Adjusted R-squared	0.251106	S.D. dependent var	0.645588
S.E. of regression	0.558683	Akaike info criterion	1.772833
Sum squared resid	5.306163	Schwarz criterion	1.872248
Log likelihood	-14.8419	Hannan-Quinn criter.	1.789658
F-statistic	7.035449	Durbin-Watson stat	0.686625
Prob(F-statistic)		0.016755	

As we can see the Table 4, inflation has a negative significant statistical effect on the banking ratio; therefore, a one percent (1%) increase in the inflation will decline the banking ratio by (-0.05479*100= - 5.47 percent in Afghanistan). Based on the value of R-squared, 29 % percent was interpreted by the independent variable and the rest, 71 %, was interpreted beyond the equation.

TABLE 5

Dependent Variable: LOG(BANKINGR)
Method: Least Squares
Date: 06/11/23 Time: 22:06
Sample: 2003 2021
Included observations: 19

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IR	0.290396	0.030808	9.426116	0.0000

R-squared	-5.405763	Mean dependent var	3.823561
Adjusted R-squared	-5.405763	S.D. dependent var	0.645588
S.E. of regression	1.633959	Akaike info criterion	3.871085
Sum squared resid	48.05679	Schwarz criterion	3.920792
Log likelihood	-35.77530	Hannan-Quinn criter.	3.879497
Durbin-Watson stat	1.486957		

As we can see the Table 5, the interest rate has a positive significant statistical effect on the banking ratio. Therefore, a one percent (1%) increase in the interest rate will increase the banking ratio by (0.29039*100= 29.039 percent in Afghanistan).

❖The distinctions between conventional and Islamic banking

Feature	Conventional Banking	Islamic Banking
Interest	Charged on loans	Not charged
Profit and loss sharing	Not shared	Shared with customers
Investment	Wide range of assets, including haram assets	Only halal assets
Guarantees	Often offered	Not offered
Principles	Profit maximization	Profit and risk sharing, ethical investing

VI. CONCLUSIONS

In the past ten years, the banking industry has been crucial to Afghanistan's economic growth, and Islamic banking is largely considered the segment in the Middle Eastern financial services market that is expanding the fastest. Today, finances worth billions are managed in accordance with Shariah. All Afghans are Muslims, so it is essential for them to comprehend Islamic banking and its goods and business models because it is a new concept in our country. Interest must not be used in the Islamic financial system. Additionally, Islamic banks in Afghanistan are less susceptible to changes in interest rates than conventional banks because they forbid interest and place a

greater focus on risk-sharing. With the exception of Qard Hassana, where profit and loss sharing is impractical, the idea of loans and credits for financing business, industry, and agriculture does not theoretically exist in Islam, much like interest-free loans provided by the federal government to province governments for their developmental needs.

The findings of this paper suggest that inflation and interest rates are major obstacles for both banking systems in Afghanistan. In order to mitigate the impact of interest rates and inflation rates, banks in Afghanistan need to adopt strategies that can protect their deposits, reduce their costs, and manage their risks. Moreover, inflation is a rise in the general level of prices for products, commodities, and services over a specific time period. Due to the fall in the monetary unit value calculation relative to a commodity, inflation can be viewed as a phenomenon of money. As well as inflation also has a significant impact on both Islamic banks and conventional banks in Afghanistan. It affects their profitability, loan performance, investment activities, and customer behavior.

Islamic banks in Afghanistan may face unique challenges due to their adherence to Sharia principles, which prohibit interest-based transactions. They need to employ alternative financial instruments and risk-sharing mechanisms to mitigate the impact of inflation. Conventional banks in Afghanistan are also affected by inflation, particularly in terms of interest rates, lending activities, and loan repayment dynamics. Additionally, in countries with dual banking systems, commercial banks can conduct both regular banking operations and interest-free banking, whereas Islamic banks can only conduct transactions in interest-free financial markets, which prevents them from taking advantage of arbitrage opportunities (Kaleem and Isa, 2006). Islamic banks are more vulnerable to fluctuations in interest rates than traditional banks because they operate in thin financial markets (Kassim et al., 2009). Based on their respective business models, marketing plans, and the general state of the Afghan economy, Islamic banks' and conventional banks' specific responses to inflation and interest rates may differ.

VII. RECOMMENDATIONS

Islamic banks should focus on diversifying their investment portfolios to include real assets, such as infrastructure projects and productive ventures, to safeguard against inflationary risks. Both banking systems should implement robust risk management frameworks to monitor and mitigate the impact of inflation on loan performance and credit risk.

Collaboration between both banks' systems can lead to the development of innovative financial products and services that address the challenges posed by inflation in Afghanistan. On another hand, Policymakers should implement measures to manage inflation and maintain price stability, ensuring a conducive environment for both banks' systems to operate effectively. Policymakers should develop regulations that provide a level playing field for both Islamic and conventional banks to operate in Afghanistan.

The central bank should monitor the effect of inflation and interest rate change on the stability of both banking systems and introduce appropriate measures to manage risks. Banks should offer products that are indexed to inflation. This can help to protect the purchasing power of depositors. Banks should adopt risk management practices on default on loans.

Additional study is required to explore the specific strategies and mechanisms employed by both banking systems in Afghanistan to mitigate the impact of inflation and manage inflation-related risks effectively. More investigation can explore the effect of other macroeconomic impacts, such as unemployment rate and GDP growth, on conventional banking and Islamic banking in Afghanistan.

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