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Interest Rate Sensitivity of Depositors in Non-Financial Banks: A Case of an emerging Economy

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Abstract

This study uses 62 years of data, from 1960 to 2021, including variables like deposits, interest rates, GDP, and inflation, to investigate the link between interest rates and deposit behavior in non-Islamic banks in Pakistan. The study finds that interest rates have a big influence on deposit behavior using time series analytic techniques as unit root testing, cointegration analysis, and Vector Error Correction Model (VECM). More specifically, people's decisions to deposit money in non-Islamic banks are observed to be influenced by interest rate variations. The results highlight the importance of interest rate changes in influencing deposit behavior, showing how people choose which non-Islamic institutions to deposit money with. These findings have significance for financial institutions, policymakers, and economists in general. They provide important new information about the ways in which monetary policy choices affect deposit mobilization and liquidity conditions in the banking industry. The report also proposes directions for further investigation, including the possible examination of differences in deposit behavior between demographic groupings or geographical areas. To further help understand the dynamics at work, it also suggests examining how interest rates affect deposits in various sample configurations. This research advances theoretical frameworks in the field by shedding light on the complex interactions between interest rates and deposit behavior. It also offers stakeholders practical guidance on how to deal with the effects of interest rate dynamics on deposit mobilization and banking sector liquidity.

Keywords: Interest Rate, Short Term Deposits, GDP Per Capita, Emerging Economy .

INTRODUCTION

The country's success and economic progress have a direct link with its people's saving habit. Historically, several studies on saving have been conducted from various perspectives, including the impact of fiscal and monetary policy on savings, the measurement of people's private saving behavior in specific countries, savings' determinants, and public policy and institutional profitability in relation to savings. Though, the attentions of the banks now mostly diverted towards the off balance sheet activities rather than the conventional banking, even still the conventional banking still has importance for the economy because the major sources of funds in many developing countries for the majority of the business were provided by the banking system in terms of bank loans. It is, therefore, very much important for the banks to attract more deposits so as to make loans.There have been very tough competition in the industry of the banking for before last several years was due to the financial liberalization. In the first place, there were restrictions on the availability of deposits to customers as a facility. Consequently, the product line was not as broad

as it is today, when all commercial banks have broader product lines. As a result, customers and banks were free to negotiate rates of return, minimum denominations, and maturity periods before depositing money with the bank. These changes have had a variety of effects on the commercial banking system. Second, several other non-financial institutions provided deposit facilities to clients (Butt, Sadaqat, and Shear, 2023). Monetary policy has plays an important part in developing economy. Pecuniary power maintain and vigilant the cash agglomeration. Financial and pecuniary policies have significant influence to enhance gross domestic productivity facilitate norms of survival of nation. On the other hand there were certain nations which were not progressing and developing at a optimum standard, of course there would be reasons for this. That's why organizations has important role in development of nations (Marika and Sala, 2010).

According to the study looking at inflation, interest rates would probably be raised by the Federal Reserve. For a few years, inflation won't be a major issue. It can be good or negative, depending on the specifics. Inflation's inverse relationship makes things more expensive, which reduces opportunities for saving and investing for the future. It locks in the cost for later usage. One benefit is that banks are able to discuss the recession. They evaluate the link between the user's pricing in years such as the prior and the present. It makes loans during times of deflation and borrows money during times of strong inflation (Junaidi, Anwar, Alam, Lantara, and Wicaksono, 2023). Aurangzeb and Haq (2012) conducted a study on the rising prices of goods to investigate the role of inflation in dealing with issues encountered in any economy. Because no one can deny the significane of the inflation in discussing the economic problems. This study concluded that rising prices of the goods is theriskieststage that collapses the development of financial system.

Keeping in mind the end goal to stay away from tax assessment or to purchase item, individuals at times pay more. Financial expert proposed negative affiliation or association among costs and cash esteem. High inflation fold the endeavor base additionally gravely influenced the obtaining force of specific customer. It would not influence the settled salary bunch individuals. Expansion dependably thought of high inflationuncertainity and expansion uncertainity given way or decimate monetary advancement or financial columns (Mushtaq and Siddiqui 2017). Expansion was the significant driver or boss extensive scale marker which influenced the yield level Though, the attentions of the banks now mostly diverted towards the off balance sheet activities rather than the conventional banking, even still the conventional banking still has importance for the economy because the major sources of funds in many developing countries for the majority of the business were provided by the banking system in terms of bank loans. It is, therefore, very much important for the banks to attract more deposits so as to make loans.There have been very tough competition in the industry of the banking for before last several years was due to the financial liberalization (Anum et al. 2011).

It sets the price for future usage. The positive implications include banks being able to refer to the recession. They compare the relationship of the utilizing person's pricing in prior years to the present year. It borrows during periods of strong inflation and lends during periods of deflation. When cash and profitability increase, unemployment decreases. Furthermore, unemployment increases as costs rise. Development, both financial and monetary, resulted in lower unemployment and higher inflation (Haddad, 2023). In the long run, it gives the reasons taking into account investigation to trust that the globalization's center was considered as a noteworthy reason for

"worldwide disinflation". It have been highlighted the importance of outer components to clarify the This financial liberalization has affected the commercial banking system in different ways, firstly there were no restriction on the offerings of the deposits as a facility to the customers, therefore the product line was not broader as compare to now where every commercial bank has broader product lines and due to this the negotiation process between customers and banks were now free in terms of determining the rate of returns, minimum denomination as well as before placement of the deposits to the bank the maturity periods (Guerrer 2004). Conducted a study on the rising prices of goods to investigate the role of inflation in dealing with issues encountered in any economy. Because no one can deny the significane of the inflation in discussing the economic problems. This study concluded that rising prices of the goods is the riskiest stage that collapses the development of financial system (DeGregorio 1993).

These methods were co-mix and slip rectification structure, which were led inside the vector autoregression skeleton. By applying up to date econometric methods, it has been discovered determinants, for example, rates of benefit of Islamic bank, rates of interest on deposits, base loaning rate, Kuala Lumpur composite record, customer value list, money supply and gross domestic product have distinctive effect on deposits at both Islamic and traditional account frameworks. By and large, clients of traditional framework act in congruity with the reserve funds conduct speculations. Conversely, the greater part of these hypotheses was not material to Islamic saving money clients (Motley 1998). Monetary policy has plays an important part in developing economy. Pecuniary power maintain and vigilant the cash agglomeration. Financial and pecuniary policies perform a significantly enhancing GDP i.e. gross domestic productivity as well as facilitate the norms of survival of nation. On the other hand there were certain nations which were not progressing and developing at a optimum standard, of course there would be reasons for this. That's why organizations has important role in development of nations (Abbas et al. 2011).

In Pakistan's non-Islamic banks, the relationship between interest rates and short-term deposits is a complicated but important part of the financial system. Interest rate fluctuations have a significant impact on market competition, depositor behavior, bank profitability, and regulatory compliance. Determining depositor sensitivity and its effects on banks' liquidity and profits requires an understanding of how interest rate fluctuations affect depositor choices about short-term deposits. Furthermore, examining the regulatory environment and larger market dynamics related to changes in interest rates can offer important insights for risk management and strategic planning in the banking sector. Stakeholders may enhance their capacity to handle the possibilities and difficulties brought about by changes in interest rates by exploring these interrelated aspects, which will eventually strengthen the stability and resilience of Pakistan's banking industry.

BACKGROUND, OBJECTIVES AND SIGNIFICANCE OF THE STUDY

The study's main goal was to evaluate the connection between the deposit and interest rate of This study's goal was to determine how interest rates affected Pakistan's non-Islamic banks' short-term deposits. Knowing how interest rate changes impact short-term deposits in non-Islamic banks is crucial to understanding the effectiveness of Pakistan's monetary policy transmission mechanisms. Researchers can clarify the degree to which monetary policy activities impact deposit mobilization and liquidity circumstances within the banking system by analyzing depositors' reactivity to interest rate changes. These revelations advance our knowledge of how the State Bank of

Pakistan's (SBP) monetary policy choices affect the actions of families and financial institutions, which in turn affects the dynamics of inflation and economic activity. Furthermore, there is a direct correlation between interest rates and short-term deposits as well as the robustness and stability of Pakistan's banking industry. Current studies in this field shed light on the factors that influence deposit inflows and outflows, how sensitive depositors are to interest rate fluctuations, and the consequences for bank risk-taking and liquidity management. Through the identification of factors that impact deposit behavior and the dynamics of the banking sector, these results provide guidance to regulators and policymakers on possible vulnerabilities and obstacles within the banking system. This helps to improve financial stability and reduce systemic risks. Studying how interest rates affect short-term deposits also sheds light on Pakistani consumer behavior, savings trends, and financial intermediation methods.

Through an examination of the impact of interest rate fluctuations on people's choices to deposit money in non-Islamic banks, scholars may evaluate the function of financial institutions in promoting saves and capital allocation. These results advance knowledge of the variables influencing investment choices, patterns of family savings, and the general effectiveness of financial intermediation in Pakistan's economy. The results on the effect of interest rates on short-term deposits also have significant policy ramifications for Pakistani policymakers and monetary authorities. In order to accomplish macroeconomic goals like price stability, full employment, and sustainable economic development, policymakers can customize monetary policy tools by determining the pathways via which changes in interest rates impact deposit behavior. Additionally, these findings offer direction for the possible efficacy of different policy instruments, such reserve requirements and open market operations, in affecting deposit trends and liquidity circumstances in the banking system (Haddad, 2023).

This study conducted and compiled as. Chapter Onepresented the introduction of the research study, that included the overview ofthedeposits and factors those were taken under this study, then statement of problem, objectives, and hypothesis etc. Chapter Two was devoted to literature review in which different past researches conducted on the deposits, interest rate, GDP and inflation.Moreover, the Chapter three presented the method of data collection, sampling size, sampling technique and hypotheses. In Chapter Four, analyses of the results were conducted after the data processing was finalized as well the assessment of the research hypothesis. Chapter Five described the results, conclusion discussion, implications, and future researches. References and appendix were attached after chapter five.

LITERATURE REVIEW

The body of research on interest rates and short-term deposits in Pakistan's non-Islamic banks shows a complex interaction that has important ramifications for market dynamics, depositor behavior, bank profitability, and policy concerns. Research highlights the significance of interest rates in driving deposit growth and influencing lending practices in the banking industry. It also highlights how sensitive depositors are to fluctuations in interest rates and how this affects banks' ability to manage liquidity and their overall financial performance. While empirical research sheds light on depositor behavior, bank profitability, and macroeconomic dynamics in reaction to interest rate changes, theoretical frameworks clarify the factors that influence interest rates and depositor decision-making processes. Market assessments emphasize how banks compete with one another and how changes in interest rates affect the stability

of the market and the efficacy of regulations. Within the Pakistani banking industry, policy-oriented research assesses the effectiveness of regulatory actions and monetary policy instruments in controlling interest rate volatility and fostering financial stability. Overall, combining the results of theoretical, empirical, and policy-focused research provides a thorough grasp of the intricate dynamics involving interest rates and short-term deposits in Pakistan's non-Islamic banks.

Short-term deposits and interest rates are essential elements of the financial system that have a big impact on the economy and financial intermediation in Pakistan's non-Islamic banks. Understanding interest rates' fluctuations in the Pakistani environment is crucial, as several studies have demonstrated how crucial they are in influencing depositor behavior and bank profitability. The study conducted by Butt, Sadaqat, and Shear (2023) investigated the effects of variations in interest rates on the profitability of banks in Pakistan. The study showed that interest rate variations had a major impact on banks' net interest margins and overall profitability, emphasizing how crucial interest rate risk management is for financial institutions doing business in Pakistan.

Rise in that had a definite impact on the banking sector's monetary policy on one peak and a decrease in investment and storage on another. In addition to inflation, the GDP and discount rate are other factors that influence monetary policy and are covered in this study. The discount rate is also impacted by inflation as, as was previously noted, inflation reduces buying power, which has an impact on a nation's current interest rate (Heniwati, Yantiana, and Desyana, 2021). George (2009) evaluated the impact on expansion of inflation focusing for twenty seven nations that have embraced inflation focusing on the administration of. He utilized the examination of intercession as a part of the Harvey basic time arrangement model for breaking down the impact on inflation of expansion focusing by the assistance of quarterly appraisal. On expansion, the underlying impact of usage of the focusing on system for inflation was sure for just two nations, for example, Chile and Indonesia while negative for others and proposed that the focusing on methodology for inflation has succeeded.

Basse and Reddemann (2011) did a study that will help the country by work towards a more efficient payment system mechanism to forge closer very profitable purposes of the person who are really responsible for the society and the purpose is to exchange the ideas and cognitive skills. It will promote the study on profitability and monetary growth for the both parties of the countries. It fixes the price for the future use. Positive effects includes that banks can refer towards the recession. They compare the relationship of prices of the using person in the years like previous one and the current one year. It borrows money during high inflation periods and lend during deflation periods.

Vivek and Shrikant (2011) inspected the ramifications of the rising costs of sustenance for the money related strategy in India and same as in the blink of an eye rising economies. The scientific contentions were utilized from the pertinent confirmation and macroeconomic writing from the information generally 1960s for looking at the 1979s stagflation. Financial expert proposed negative affiliation or association among costs and cash esteem. A high rate of inflation also negatively impacted the endeavor base and the acquiring power of a particular client. The personnel with fixed salaries would remain unaffected. According to Haddad (2023), expansion is always associated with significant inflation uncertainty and expansion uncertainty might hinder financial progress or lead to financial crises.

Studies with a focus on policy have highlighted how interest rates affect Pakistan's currency rates, monetary policy transmission mechanisms, and inflation (Khan & Qayyum, 2017). Furthermore, academic research has focused on the regulatory frameworks controlling interest rate risk management and liquidity management in non-Islamic banks. Specifically, scholars have investigated how well regulatory measures protect banks from the negative consequences of interest rate volatility (Shah et al., 2019).

Understanding the Relationship Between Interest Rates and Short-Term Deposits

In order to comprehend the correlation between interest rates and short-term deposits in Pakistan's non-Islamic banks, one must possess a solid understanding of the fundamental theoretical principles and frameworks that underlie the dynamics of interest rate movements and depositor behavior. According to conventional economic theory, the financial market's supply and demand for loanable money interact to set interest rates. Interest rate fluctuations impact the distribution of funds between savings and consumption because they change the opportunity cost of retaining money versus investing in interest-bearing assets (Hidayat, Sakti, and Al-Balushi, 2021). Expanding upon this fundamental idea, Keynes's (1936) liquidity preference theory highlights the part liquidity preferences play in shaping the money demand. This hypothesis states that people keep money on hand for transactional needs in addition to preventive and speculative ones. Interest rate fluctuations affect the holding cost of money, which affects demand for money and interest-sensitive assets like short-term deposits.

Mallik and Bhar (2011) built up a relationship in the middle of loan fees and expansion instability for 5 inflation focusing on nations. rate of interest in the banks of Pakistan has been rising since many years. Rise in that decreasing the investment and storing on one peak and which clearly effect on the monetary policy of the banking sector on the other peak. By that it would concernwith the supply and demand function which can be inversely related for the interest spread and the industrialist has the better influences on the rating power fighters in this environment can have the complicated implications to get the good result for the interest which fluctuating result on the asset and liabilities and paying the less payment to the consumers of the function. The interest policies has many changing's in the record which effect on the shape and size of rates (Alam, Islam, and Runy, 2021).

The possibility that monetary policy has an impact on the inflation of home prices was the subject of a research. This research employed quarterly data and covered the period from 1976 to 2005. The findings indicated a negative correlation between monetary policy and housing price inflation. Stated differently, monetarism has a detrimental impact on the inflation of housing prices (Ledhem and Mekidiche, 2020). It is imperative to outlaw unfairness in international banking transactions and provide banks with protection against new and diverse dynamics in money supply policies that may impact pricing strategies (Alkhazaleh, 2017).The market concentration factor was the one under examination because of its significant impact on South Asian banks. The market concentration showed fewer margins to high interest rate rather than Market shareholders have high interest margins and create dominance to Market concentration. Interest rate was looked by two ways Lenders point of view and borrowers' point of view. If was borrow money the cost you pay for it was your interest rate (Borrower's Point of view). If you lend money the fees charged on it was your interest rate (Lender's point of view). In an inefficient market there were not many people who were able to make an extremely well profit because the conditions here

in an inefficient market were not good. There were only a few people who were able to invest. So it was understood that inefficient market have a very low share price because of the situations in the market (Alharbi, 2017). The study that examines about the inflation was the Federal Reserve would likely raise interest rates. Inflation won't be much of a threat for a couple years, can either be positive or negative, relying on simple circumstances inverse relation of inflation causes the cost to increase and which would be less in the saving opportunity and invest for the betterment (Masood, Ghauri, and Aktan, 2016). It fixes the price for the future use. Other determinants of monetary policy are GDP and discount rate that are also discussed in this research along with inflation. Positive effects includes that banks can refer towards the recession. They compare the relationship of prices of the using person in the years like previous one and the current one year. It borrows money during high inflation periods and lend during deflation periods.

In the context of banking operations, theoretical frameworks such as the net interest margin model provide insights into the relationship between interest rates, bank profitability, and risk management. The net interest margin model posits that banks generate revenue primarily from the spread between interest earned on loans and interest paid on deposits, with net interest margin serving as a key determinant of profitability (Berger & Hannan, 1989). Synthesizing these theoretical perspectives provides a comprehensive understanding of the intricate relationship between interest rates and short-term deposits in non-Islamic banks of Pakistan. By integrating insights from classical economic theory, liquidity preference theory, behavioral economics, and banking literature, researchers can develop nuanced models and frameworks to analyze depositor behavior, bank profitability, and regulatory implications in response to interest rate movements.

Investigating Depositor Behavior and Bank Performance in Response to Interest Rate Changes in Pakistan

Empirical studies have extensively explored depositor behavior and bank performance in response to interest rate changes within the context of non-Islamic banks in Pakistan. These studies provide valuable insights into the dynamics of short-term deposits and their implications for banking operations and financial stability. Research by Khan et al. (2019) examined the impact of interest rate fluctuations on depositor behavior in Pakistan's non-Islamic banks. The study utilized econometric analysis to assess the responsiveness of depositors to changes in interest rates and found evidence of significant sensitivity, particularly among retail depositors. The findings suggested that depositors adjust their deposit allocations in response to changes in interest rates, with implications for banks' liquidity management and funding costs.

Similarly, Abdallah, and Bahloul (2021) conducted a comprehensive analysis of the relationship between interest rate movements and bank profitability in Pakistan. Using panel data techniques, the study explored the effects of interest rate changes on banks' net interest margins, return on assets, and overall financial performance. The results indicated that fluctuations in interest rates exerted a significant impact on bank profitability, highlighting the importance of effective interest rate risk management strategies for banks operating in Pakistan. Furthermore, empirical studies have investigated the transmission mechanisms through which changes in interest rates affect the broader economy and financial markets in Pakistan. Haddad, (2023) analyzed the relationship between interest rates, inflation, and monetary policy transmission channels, highlighting the role of interest rates in influencing aggregate

demand, investment, and price levels. The findings underscored the importance of monetary policy effectiveness in managing inflationary pressures and stabilizing the economy amidst interest rate fluctuations. Leonardo (2010) utilized the contention expansion way to deal with highlight the essentialness of worldwide outside components to clarify the inflation. A hypothetical system was anticipatedwhere a supply-side relationship was inferred first and in secondly, it consolidates with the James Meade's examination which determined the adjustment between a salary's steady appropriation and connection amongst outside and inside equalization separately. With regards to little open economy that concentrate at first uncovered pertinent tradeoffs among three essential targets – inside equalization, outside parity, and goal parity of specialists or firms. At that point it isolated the component of alteration that gave insights about how a troublesome installments' equalization stuns may at long last come about to the breakdown of clashing cases of inflation and harmony.

Research has shown a negative correlation between the rate of inflation, monetary development, and spending plan flaws (Hidayat, Sakti, and Al-Balushi, 2021). It was likewise descries that the macro-economic hypotheses (rate of expansion, equalization deficiency) and with the nation's financial development. As indicated by the investigation of 1993, expansion rate causes in the diminishment in the development, profitability and ventures of the nation while open shortfalls causes in declining in both amassing of capital and expansions in the efficiency of the nation (Fischer 1993). Empirical study has looked at depositor behavior, bank profitability, and the effects of interest rate changes on market competitiveness and regulatory policies in the banking industry in Pakistan. Research has evaluated how changes in interest rates affect competitive dynamics, bank concentration, and market structure. This has provided insight into the effects on consumer welfare and market efficiency. Additionally, regulatory studies have examined how well supervisory and prudential frameworks function to reduce the risks brought on by interest rate volatility and maintain financial stability.

Assessing Competitive Dynamics and Market Stability in Response to Interest Rate Movements

Non-Islamic banks in Pakistan react differently to changes in interest rates due in large part to market dynamics and policy consequences. An analysis of the body of research provides information on the banking industry's competitive environment, market stability, and the policy ramifications of interest rate swings. Research by Ledhem and Mekidiche (2020) examined the competitive dynamics among non-Islamic banks in Pakistan in response to changes in interest rates. The study analyzed market concentration, pricing strategies, and product differentiation to assess the impact of interest rate movements on market competition. The findings indicated that interest rate changes influenced banks' lending and deposit rates, leading to adjustments in market shares and competitive positioning among banks. According to Barajas, Steiner, and Salazar (1999), rate of interest in the banks of Pakistan has been rising since many years. Rise in that decreasing the investment and storing on one peak and which clearly effect on the monetary policy of the banking sector on the other peak. By that it would concernwith the supply and demand function which can be inversely related for the interest spread and the industrialist has the better influences on the rating power fighters in this environment can have the complicated implications to get the good result for the interest which fluctuating result on the asset and liabilities and paying the less payment to the consumers of the function.

According to Heniwati, Yantiana, and Desyana (2021) there have been several changes in interest policies that have an impact on the magnitude and form of rates. A study was conducted to investigate that the house prices inflation was effected by the monetary policy. This study encompassed the data set starting from1976-2005 in which the quarterly data was used. The results suggested that there is negative relationship of monetary policy with inflation of house prices. In other words, monertary policy had negative effect on the house price inflation (Ledhem, and Mekidiche, 2020).

It has been analyzed; that the economic growth of a country was measurable depended on two factors that were Stock exchange and Interest Rate. The impact of these two was on Government policy, risk management and monitory policy. Interest rate was looked by two ways Lenders point of view and borrowers' point of view. If was borrow money the cost you pay for it was your interest rate (Borrower's Point of view). If you lend money the fees charged on it was your interest rate (Lender's point of view). In an inefficient market there were not many people who were able to make an extremely well profit because the conditions here in an inefficient market were not good. There were only a few people who were able to invest. So it was understood that inefficient market have a very low share price because of the situations in the market. The random walk model was used in this study. When the test ran the result it showed was that none of the 15 developing and undeveloped countries have efficient market all were inefficient (Muhammad and McGowan 2010).

Another research was conducted by Román, Cristóbal, and Gloria (2010), in which they investigated at industry level the impact of interest rate risk on the firms in the Spain. The research method which was adopted by them was two-index regression model. Exposure model of traditional interest rate was enriched so as to assess the asymmetric behavior and a non-linear exposure component. The exposure of the interest rate was not identical for all of industries in the Spain such banking, constructions, and other. The results showed that the traditional linear exposure were prevalent over the asymmetric pattern and non-linear.

The transmission mechanism of the monetary policy depends or focuses on relationship between two things i.e. money supply and level of real income. Many aspects were here through which changes in supply of money effects the output. There were many mediums through which monetary policy was operated at the same time not just one. Therefore it was also called Black Box, because it was difficult to understand it. In spite of this there were some dominant mediums like interest rate, exchange rate, or asset price channel. (Bernanke and Blinder 1992). Furthermore, research on regulatory matters has looked at how changes in interest rates affect Pakistan's non-Islamic banks' prudential rules and supervisory systems. Ahmed and Qayyum (2020) evaluated how well capital adequacy criteria, interest rate risk management recommendations, and stress test frameworks perform as regulatory tools to reduce the risks brought on by interest rate volatility. The study emphasized the necessity of strong regulatory frameworks to protect financial stability and strengthen bank resilience in the face of interest rate volatility.

HYPOTHESES

H_1 : There is a positive impact of short term interest rate on deposit.

RESEARCH METHODOLOGY

Data Collection

This researchwas asically designed and the data collection method based on the secondary sources of the data for which the historic data of deposits amount of non-Islamic banks, the interest rate,per capita gross domestic product (GDP), and inflation data were collected from State Bank and World Bank for Last 62 years from 1960 to 2021.

Sampling Techniques

The sampling techniques which adopted in this research were convenience sampling and the time-series data was used. 62 years data of all the variables of this study such as; deposits of non-Islamic banks, interest rate, per capita GDP and rate of inflation were collected from the reliable medium of State Bank of Pakistan's centre of data managementand economical data of the country and the World Bank portal.

Sample Size

In this study the sample of 62 years data of the study variables were gathered for the time peried of 1960-2021. All the data were gathered from the SBP (State Bank of Pakistan) data management centre and portal of World Bank.

Research Model Developed

In the present studty the model constructed was to test relationship between the dependent variable which was deposits of non-Islamic banks and predictors .i.e GDP per capita, interest rate, as well as inflationinflation.The model developed was a near model and its specifications were provided below:

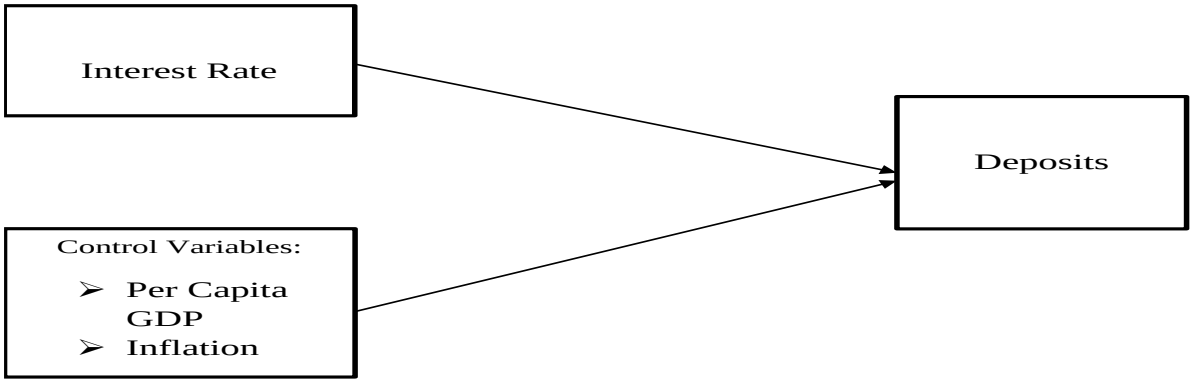

Figure 1.
Model Framework

Variables Description

- ***Deposits***

The study variable of this study was deposits which were actually the shorter deposits of the non-Islamic banks.

- ***Interest Rate***

Interest rate in the country

- ***Per Capita Gross Domestic Product (GDP)***

The GDP under this study was the Per capitaGDPof the country.

- ***Inflation Rate***

Inflation rate was the annual inflation rate of the country.

- **Statistical Technique**

In this study the time series data have been used therefore the Augmented Dickey-Fuller (ADF) has been used to test the stationarity (unit root) in the data. After that the co-integration test, and the Vector Error Correction Estimates (VECM) were used to test the hypothesis of the impact of interest rate on the deposits.The data was entered into the software named EVIEW (Econometric Views) so as to be analyzed and interpreted.

RESULTS

This chapter would give an analysis of data. Data analysis would be conducted in order to examine the impact of interest rate on the short term deposits of non-Islamic banks.

FINDINGS

Stationary Test (Unit Root)

The motivation behind this test was to examine the steps included in time arrangement/series analysis. Time arrangement/series has numerous applications, numerous dissection mistakenly utilizes structure of Linear Regression (OLS) models to anticipate change about whether Statisticians and examiners working with time arrangement information revealed a genuine issue with standard examination procedures connected to time arrangement. Estimation of parameters of the Ordinary Least Square Regression (OLS) model created measurably critical comes about between time arrangement/series that hold a pattern and were overall irregular. This discovering prompted impressive take a shot at how to figure out what properties a period arrangement must have if econometric strategies were to be utilized. The stationarity test would use the Augmented Dickey-Fuller (ADF) technique. Following was the hypothesis for testing the Stationarity

H_o. Non-stationary

H_A. Stationary

The results of the ADF test showed that at the 1st difference the ADF test statistics of all the variables under this study had greater p-value than the sig-value of 0.05.And the ADF statistics of all the four variables were greater than the critical value that rejected the null hypothesis of the unit root and showed that all the variables were stationary at 1st difference.

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Table 4.1:
Results of Augmented Dicky Fuller (ADF)
Stationary Tests at First Difference

Variable	ADF Statistics	Critical Value	Durbin Watson	Prob.	Lag	Inference

D(LNDEP)	-5.779308	-3.544063	1.700162	0.0000	0	I(0)
D(INT)	-9.198415	-3.544063	2.017787	0.0000	0	I(0)
D(LNINF)	-9.923908	-3.544063	2.070801	0.0000	0	I(0)
D(GDP)	-9.286737	-3.548208	2.077283	0.0000	0	I(0)

Co-integration Test

When an unit root has been affirmed for an information arrangement, there emerges an inquiry whether there was any plausibility for the presence of a long-run balance relationship among a given set of variables. The testing speculation was the invalid of non-co-joining against the option that was the presence of co-mix relationship. To direct co-mix test, this study utilizes the strategy created by Johansen.

Table 4.2
Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.510490	74.61343	54.07904	0.0003
At most 1	0.271410	32.46677	35.19275	0.0956
At most 2	0.172234	13.78477	20.26184	0.3045
At most 3	0.043634	2.632284	9.164546	0.6514

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Table 4.3
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.510490	42.14666	28.58808	0.0005
At most 1	0.271410	18.68200	22.29962	0.1484
At most 2	0.172234	11.15249	15.89210	0.2407
At most 3	0.043634	2.632284	9.164546	0.6514

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

The results of the Johansen's co-integration test as shown in the Table 4.2 and Table 4.3.,above uses two test statistics namely the trace statistics and the maximum Eigen-value. Firstly, the trace statistic tests the null hypothesis that the number of characteristic roots (i.e. the testing hypothesis) was less than or equal to r, (where r was 0, 1 or 2) against the general alternativehypothesis. The results of co-integration test were given in table 4.2 and Table 4.3. Results clearly reveal that both trace test and maximum Egen-value test both statistically significant toreject the null hypothesis of no co-integration at significance level of 5%. Thus there was one long-term co-movement between interest rate and deposit in other words; there is one long-run co-integration relationship between interest rate and deposits.

Vector Error Correction Estimates (VECM)

The above co-integration test showed that there had no con-integration among the variables, therefore theVector Error Correction Estimates technique was utilized herein.

Table 4.

Vector Error Correction Estimates Sample (adjusted): 1964 2021 Included observations: 58 after adjustments

Cointegrating Eq:	**CointEq1**			
LNDEP(-1)	1.000000			
INT(-1)	-3.409116 (1.42935) [-2.38507]			
GDP(-1)	5.155680 (2.03447) [2.53417]			
LNINF(-1)	27.28733 (5.62914) [4.84752]			
C	-48.48414			
Error Correction:	D(LNDEP)	D(INT)	D(GDP)	D(LNINF)
CointEq1	-0.006811 (0.00648) [-1.05087]	0.043767 (0.01854) [2.36012]	-0.026772 (0.02283) [-1.17249]	-0.022551 (0.00781) [-2.88683]
D(LNDEP(-1))	0.064250 (0.16265) [0.39502]	0.106057 (0.46535) [0.22791]	0.435650 (0.57297) [0.76033]	0.041836 (0.19602) [0.21342]
D(LNDEP(-2))	0.036266 (0.16737) [0.21668]	0.059331 (0.47886) [0.12390]	0.796840 (0.58961) [1.35147]	0.128934 (0.20171) [0.63919]
D(INT(-1))	-0.067847 (0.04810) [-1.41045]	-0.228862 (0.13763) [-1.66292]	-0.384722 (0.16946) [-2.27034]	0.009452 (0.05797) [0.16304]
D(INT(-2))	0.057894 (0.05811) [0.99629]	-0.137971 (0.16626) [-0.82987]	0.149106 (0.20471) [0.72839]	-0.030130 (0.07003) [-0.43022]
D(GDP(-1))	-0.029899 (0.03489) [-0.85703]	-0.129248 (0.09982) [-1.29487]	-0.561332 (0.12290) [-4.56740]	0.099010 (0.04205) [2.35481]
D(GDP(-2))	-0.066889 (0.03317) [-2.01642]	-0.102758 (0.09491) [-1.08270]	-0.329629 (0.11686) [-2.82076]	0.047702 (0.03998) [1.19318]
D(LNINF(-1))	0.186183 (0.15700) [1.18591]	-0.566360 (0.44918) [-1.26088]	0.667137 (0.55306) [1.20626]	0.079005 (0.18921) [0.41755]
D(LNINF(-2))	0.139980	-0.341646	-1.184082	0.070721

	(0.13746)	(0.39327)	(0.48422)	(0.16566)
	[1.01837]	[-0.86873]	[-2.44533]	[0.42691]
C	0.108016	0.166988	-0.209664	0.027026
	(0.08240)	(0.23574)	(0.29026)	(0.09930)
	[1.31093]	[0.70835]	[-0.72233]	[0.27216]
R-squared	0.198567	0.165983	0.583220	0.263853
Adj. R-squared	0.048298	0.009605	0.505074	0.125826
Sum sq. resids	17.17499	140.5903	213.1396	24.94636
S.E. equation	0.598174	1.711422	2.107228	0.720913
F-statistic	1.321412	1.061420	7.463191	1.911600
Log likelihood	-47.00577	-107.9752	-120.0421	-57.83069
Akaike AIC	1.965716	4.068111	4.484209	2.338989
Schwarz SC	2.320965	4.423360	4.839458	2.694238
Mean dependent	0.143279	0.118793	-0.034789	0.032284
S.D. dependent	0.613165	1.719700	2.995307	0.771053

The above VAR estimates Table 4.4 showed that the adjusted R^2 value was 4.82%. the model of the VAR showed that the interest rate had statistical significant impact on the short term deposits of the non-Islamic banks.

$DEP_{t-1} = 48.48414 + 3.409116\ INT_{t-1} - 27.28733\ INF_{t-1} - 5.155680\ GDP_{t-1}$

HYPOTHESES ASSESSMENT SUMMARY

S. No.	Hypothesis Developed	B	Empirical Conclusion
H_1	There was a positive impact of short term interest rate on deposit	3.409116	Accepted

DISCUSSIONS

Monetary policy can be defined as a policy in which money supply of a country was controlled by its monetary authority which usually focuses on the promotion and encouragement of economic stability by targeting Interest rate. GDP includes private consumption, gross investment, and government spending and trading. Stronger these factors were better the GDP of an economy is. Rise in that decreasing the investment and storing on one peak and which clearly effect on the monetary policy of the banking sector on the other peak. This ultimately affects monetary policy.

CONCLUSION

The study was conducted to assess the relationship between rate of interest and the short term deposits of the non-Islamic banks. In this study inflation and per capita GDP factors have also been encompassed so as to better analyze the impact. The results findings showed that the there was a significant positive impact of the interest rate on the short term deposits of the non-Islamic banks and the hypothesis was not accepted. In conclusion, recent research on "The Impact of Interest Rate on Short Term Deposits of Non-Islamic Banks of Pakistan" contributes significantly to the broader literature on monetary policy and banking by deepening our understanding of monetary transmission mechanisms, banking sector dynamics, consumer behavior, and policy implications in the context of Pakistan's economy. These insights are instrumental in informing evidence-based policymaking aimed at promoting financial

stability, fostering economic development, and enhancing the effectiveness of monetary policy in Pakistan.

POLICY IMPLICATIONS

If a country wants to grow and stabilize its economy than it should control its monetary policy. Inflation was a factor that really affects monetary policy so before taking step of printing and supplying money in the market a country should think that it can lead to inflation. This study would definitely enhance the knowledge and would extend the understanding of the researchers and bankers to encompass more factors with different structure of the data. Beyond its implications for policymakers and financial institutions, the relationship between interest rates and deposits also shapes consumer behavior and financial planning strategies. Interest rates influence individuals' decisions regarding saving, borrowing, and investing. Higher interest rates on deposits may incentivize individuals to save more, while lower rates might prompt them to explore alternative investment avenues or increase borrowing. Consequently, economists and financial institutions leverage insights into these behavioral patterns to design products and services that cater to consumers' evolving needs and preferences, fostering financial inclusivity and empowerment.

FUTURE RECOMMENDATIONS

This study has opened new areas of research such as the future researches can be carried on the basis ofa cross-nationalespecially in developing countries.Historical studies as well as this study provided enoughdata keeping in mind the end goal to comprehend the outcomes or impacts of these monetary pointers as entirety. Further, there were a few different perspectives, for example, bigger size of data set; longer-time range and so on, in light of these future explores can be carried out.

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REFERENCES

Abbas, Q., Akbar, S., Nasir, A. S., Ullah. H. A., & Naseem, M. A., (2011). Impact of Foreign Direct Investment on Gross Domestic Product. *Global Journals Inc. (USA), 11* (8), 35-39.

Alam, M.K., Islam, F.T. and Runy, M.K. (2021), "Why does Shariah governance framework important for Islamic banks?", *Asian Journal of Economics and Banking*, 5 (2), 158-172.

Aleıa B., & Jaromír, H. (2009), " Inflation convergence in the euro area: just another gimmick?. *Journal Financial Economic Policy*, Vol. 1 Iss: 4 pp. 355 – 369.

Alharbi, A.T. (2017), "Determinants of Islamic banks' profitability: international evidence", *International Journal of Islamic and Middle Eastern Finance and Management*. 3(2), 231-248
Alkhazaleh, A.M.K. (2017), "Does banking sector performance promote economic growth?", Case study of Jordanian commercial banks", *Problems and Perspectives in Management*, 15(2), 55-66.
Anum, A., Khalil, A., Sami, U., Bedi,Z., & Muhammad, T. R., (2011). the Relationship between Inflation and InflationUncertainty. *International Research Journal of Finance and Economics*, (66), 86-98.
Aurangzeb., & Haq, A., (2012). Determinants of Inflation in, Pakistan. Universal *Journal of Management and Social Sciences*, 2 (4),89-96.
Baghestani, H., & Foul, B. A., (2010),"Factors influencing Federal Reserve forecasts of inflation", Journal of Economic Studies, Vol. 37 Iss: 2 pp. 196 – 207.
Barajas, A., R. Steiner, & N. Salazar (1999) Interest Rate Spreads in Banking in Colombia, 1974–96. *IMF Staff* Papers 46, 196–224.
Basse, T., & Reddemann, S., (2011),"Inflation and the dividend policy of US firms", Managerial Finance, Vol. 37 Iss: 1 pp. 34 – 46.
Ben Abdallah, M. and Bahloul, S. (2021), "Disclosure, Shariah governance and financial performance in Islamic banks", *Asian Journal of Economics and Banking*, 5 (3), 234-254.
Bernanke, B.S. & Blinder, A.S., (1992). The Federal Fund Rate and the Channels of Monetary Transmission. *American Economic Review.82(4)*.901-921
Butt, H.A., Sadaqat, M. and Shear, F. (2023), "Does Islamic financial development foster economic growth? International evidence", *Journal of Islamic Accounting and Business Research*, 14(6), 1013-1029.
DeGregorio. J., (1993) "Inflation, taxation and long-run growth". Journal of Monetary Economics, 31(3) June, pp.271-298.
Evangelia, P., (2001),"Bivariate and multivariate tests of the inflation-productivity Granger-temporal causal relationship: evidence from Greece", Journal of Economic Studies, Vol. 28 Iss: 3 pp. 213 – 226.
Fischer, S., (1993) The role of macroeconomic factors in growth. NBER Working Paper, No: 4565.
George B. T., (2009),"Testing the impact of inflation targeting on inflation", Journal of Economic Studies, Vol. 36 Iss: 4 pp. 326 – 342.
Guerrer, O.F., (2004) "Does inflation cause poor long-term growth performance?" Japan and the World Economy, Vol. 18(1), 72-89.
Haddad, A. (2023), "Does the country's religion affect the financial performance of conventional and Islamic banks? Comparative study in the international framework", *Journal of Islamic Marketing*, 14(2), 410-434.
Haddad, A. (2023), "Effect of board quality on the financial performance of conventional and Islamic banks: international comparative study after the Subprime crisis", *Journal of Accounting in Emerging Economies*, 13(2), 399-449.
Heniwati, E., Yantiana, N. and Desyana, G. (2021), "Financial health of Syariah and non-Syariah banks: a comparative analysis", *Journal of Islamic Accounting and Business Research*, 12(4), 473-487.
Hidayat, S.E., Sakti, M.R.P. and Al-Balushi, R.A.A. (2021), "Risk, efficiency and financial performance in the GCC banking industry: Islamic versus conventional banks", *Journal of Islamic Accounting and Business Research*, 12 (4), 564-592.
Junaidi, J., Anwar, S.M., Alam, R., Lantara, N.F. and Wicaksono, R. (2023), "Determinants to adopt conventional and Islamic banking: evidence from Indonesia", *Journal of Islamic Marketing*, 14 (3), 892-909.
Ledhem, M.A. and Mekidiche, M. (2020), "Economic growth and financial performance of Islamic banks: a CAMELS approach", *Islamic Economic Studies*, 28 (1), 47-62.
Leonardo, V., (2010),"Conflict inflation: an open economy approach", Journal of Economic Studies, Vol. 37. Iss: 6 pp. 597 - 615
Mallik, G., & Bhar, R., (2011),"Has the link between inflation uncertainty and interest rates changed after inflation targeting?", Journal of Economic Studies, Vol. 38 Iss: 6 pp. 620 – 636.

Mallik, G., & Chowdhury, A., (2011),"Effect of inflation uncertainty, output uncertainty and oil price on inflation and growth in Australia", Journal of Economic Studies, Vol. 38 Iss: 4 pp. 414 – 429.

Marika,K.& Sala, H, (2010). "Productivity growth and the Phillips curve: a reassessment of the us experience" Bulletin of Economic Research: 0307-3378.

Masood, O., Ghauri, S.M.K. and Aktan, B. (2016), "Predicting Islamic banks performance through CAMELS rating model", *Banks and Bank Systems*, 11(3), 37-43.

Moon, K. K., & Ravi, S., (2006),"Inflation and bond-stock characteristics of international security returns", International Journal of Managerial Finance, Vol. 2 Iss: 3 pp. 241 – 251.

Motley, B., (1998) Growth and inflation: a cross-country study. Federal Reserve Bank of San Francisco Economic Review, 1, pp 15-28.

Muhammad, J., & McGowan C. B. (2010). Long Run Co integration between the Kuala Lumpur Inter-Bank Offer Rate and the Islamic Overnight Interbank Market Rate. *proceedings of south western finance conference*. 1-21.

Mushtaq, S., & Siddiqui, a. D., (2017).Effect of interest rate on bank deposits: Evidences from Islamic and non-Islamic economies, *Future Business Journal*,Vol. 3 1 iss:1 pp.1-8.

Perera, S., Skully, M., & Wickramanayake J. (2010). Bank market concentration and interest spreads: South Asian evidence. *International Journal of Emerging Markets, 5* (*1*), 23 – 37.

Rangan, G., & Alain, K., (2010),"The effect of monetary policy on house price inflation: A factor augmented vector autoregression (FAVAR) approach", Journal of Economic Studies, Vol. 37 Iss: 6 pp. 616 – 626.

Román, F., Cristóbal, G., & Gloria, M. S., (2010).Linear and nonlinear interest rate exposure in Spain. *Managerial Finance*, *36*(5), 431-451.

Sajjadur, R., & Apostolos, S., (2009),"The effects of inflation uncertainty: some international evidence", Journal of Economic Studies, Vol. 36 Iss: 5 pp. 541 – 550.

Sudin, H. & Wan, N.W. A., (2008). Determinants of Islamic and conventional deposits in the Malaysian banking system. *Managerial Finance*, 34(9), 618 – 643.

Vivek, M., & Shrikant, K., (2011),"Rising food inflation and India's monetary policy", *Indian Growth and Development Review*, 4(1), 73 – 94.