Exploring the Impacts of Inflation, Interest Rates, and their Uncertainty on Deposits and Advances of Conventional and Islamic Banks of Pakistan

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ABSTRACT

This paper examines the effects of inflation, the nominal interest rate, and their uncertainty on deposits and advances of conventional and Islamic banks of Pakistan. The main aim of the paper is to examine whether the effects of both types of uncertainty differ for conventional and Islamic banks. To carry out the empirical analysis, annual data covering the period 2008-2015 for a sample of 25 banks are used. To overcome the problem of heteroskedasticity in the dataset, the generalized least square (GLS) estimation method is applied. We find that the capital adequacy ratio, bank size, the inflation rate, inflation rate uncertainty, and interest rate uncertainty have significant impacts on conventional banks' deposits. We also find that although unexpected variations in the inflation rate have positive impacts, unexpected variations in the interest rate adversely affect conventional banks' deposits. In the case of Islamic banks, only the capital adequacy ratio, bank size, and the inflation rate have a significant impact on deposit growth. The results also reveal that the capital adequacy ratio, credit risk, bank size, the inflation rate, the interest rate, and its uncertainty have significant impacts on conventional banks' advances. Yet, we show that unexpected variations in the interest rate positively affect conventional banks' advances. Regarding Islamic banks, the capital adequacy ratio, credit risk, bank size, the rate of inflation, and the interest rate all have significant impacts on advances.

ملخص

تناقش هذه الورقة البحثية آثار التضخم وسعر الفائدة الإسمي وأوجه عدم اليقين التي تفرضها على الإيداعات والقروض المصرفية في باكستان على مستوى البنوك التقليدية

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والإسلامية على حد سواء. ويتمثل الهدف الرئيسي لهذه الورقة البحثية في دراسة ما إذا كانت
تأثيرات كلا وجهي عدم اليقين تختلف على صعيد البنوك التقليدية والإسلامية. ولأغراض
التحليل العملي، تم الاعتماد على بيانات سنوية تغطي فترة 2008-2015 لعينة تغطي 25 بنكا.
ولتجاوز مشكلة اختلاف التباين في مجموعة البيانات، يتم تطبيق طريقة مقدّر المربعات الدنيا
المعممة (GLS، وتوصلنا إلى أن العوامل المتمثلة في نسبة متانة رأس المال، وحجم البنوك،
ومعدل التضخم، وأوجه عدم اليقين المتعلقة بالتضخم، وأوجه عدم اليقين المتعلقة بأسعار
الفائدة لها آثار كبيرة على إيداعات البنوك التقليدية. كما توصلنا أيضا إلى أنه رغم كون بعض
المتغيرات غير المتوقعة في معدل التضخم لها آثار إيجابية، إلا أن المتغيرات غير المتوقعة على
مستوى أسعار الفائدة تؤثر سلبا على إيداعات البنوك التقليدية. أما في حالة البنوك
الإسلامية، فإن نسبة متانة رأس المال وحجم البنوك ومعدل التضخم فقط هي العوامل التي
لها تأثير كبير على نمو الإيداعات. وتشير النتائج أيضا إلى أن العوامل المتمثلة في نسبة متانة
رأس المال، والمخاطر الائتمانية، وحجم البنوك، وأسعار الفائدة وأوجه عدم اليقين المرتبطة
بها لها آثار كبيرة على قروض البنوك التقليدية. لكن نسجل أيضا أن المتغيرات غير المتوقعة على
مستوى أسعار الفائدة تؤثر إيجابا على قروض البنوك التقليدية. أما بخصوص البنوك
الإسلامية، فإن العوامل المتمثلة في نسبة متانة رأس المال، والمخاطر الائتمانية، وحجم البنوك،
ومعدل التضخم، وأسعار الفائدة كلها لها آثار كبيرة على القروض.

ABSTRAITE

Ce document examine les effets de l'inflation, du taux d'intérêt nominal et de
leur incertitude sur les dépôts et les avances des banques conventionnelles et
islamiques du Pakistan. L'objectif principal de ce document est d'examiner si les
effets des deux types d'incertitude diffèrent pour les banques conventionnelles
et islamiques. Pour effectuer l'analyse empirique, des données annuelles
couvrant la période 2008-2015 pour un échantillon de 25 banques sont utilisées.
Pour surmonter le problème de l'hétéroscédasticité de l'ensemble de données, la
méthode d'estimation des moindres carrés généralisés (GLS) est appliquée. Nous
constatons que le ratio d'adéquation des fonds propres, la taille des banques, le
taux d'inflation, l'incertitude du taux d'inflation et l'incertitude des taux d'intérêt
ont des répercussions importantes sur les dépôts des banques conventionnelles.
Nous constatons également que si les variations inattendues du taux d'inflation
ont des effets positifs, les variations inattendues du taux d'intérêt ont un effet

négatif sur les dépôts des banques conventionnelles. Dans le cas des banques islamiques, seuls le ratio d'adéquation des fonds propres, la taille de la banque et le taux d'inflation ont un impact significatif sur la croissance des dépôts. Les résultats révèlent également que le ratio d'adéquation des fonds propres, le risque de crédit, la taille de la banque, le taux d'inflation, le taux d'intérêt et son incertitude ont des répercussions importantes sur les avances des banques conventionnelles. Pourtant, nous montrons que les variations inattendues du taux d'intérêt ont un effet positif sur les avances des banques conventionnelles. En ce qui concerne les banques islamiques, le ratio d'adéquation des fonds propres, le risque de crédit, la taille de la banque, le taux d'inflation et le taux d'intérêt ont tous des répercussions importantes sur les avances.

Keywords: Bank Deposits, Bank Advances, Inflation Uncertainty, Interest Rate Uncertainty, Capital Adequacy Ratio, Islamic and Conventional Banks

JEL Classification: G20, G21

1. Introduction

Banks serve as financial intermediaries between depositors and lenders, collecting capital from depositors and lending it to end-users. Similarly, banks also facilitate business activities of corporations by crediting them and providing money in the form of advances. Deposits are the major source of funds for commercial banks. Thus, a bank's lending and investment decisions generally depend on the amount of deposits deposited to the bank. Usually, banks offer three types of deposits viz. demand deposits, saving deposits, and time deposits. These deposits fulfill the requirements of customers like saving purpose, earning income, and from an investment point of view, respectively (Haron & Azmi, 2006). In general, factors like the deposit interest rate, bank capital, bank size, and bank investment are considered major determinants of commercial banks' deposits. Likewise, macroeconomic factors such as interest rates, inflation, exchange rates, money supply, and the rate of economic growth are expected to have significant effects on bank deposit growth.

In principle, high-interest rates favorably affect bank deposits. People keep deposits with banks and banks pay a certain amount of interest or markup to their depositors. Generally, the time value of money concept

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suggests that the main motive of customers to maintain deposits with conventional banks is to seek profits. However, Islamic banks (ISBs) follow the guidance of Shariah, and in Islam, interest or riba is prohibited. Therefore, ISBs do not practice any such activity that is based on interest. Therefore, ISBs take deposits in line with the principle of profit and loss sharing (PLS). Besides, ISBs do not restraint their clients to transfer their capital from ISBs to conventional banks (COBs) to gain high-profit rates on their deposits. Thus, to maintain the deposit level, ISBs manage the profit equalization reserve (PER) account. A certain portion of banks' total income is kept as a reserve in this account to facilitate depositors with a certain level of rate of return (Kasri & Kassim, 2009). Most of the empirical studies suggested that increased inflation adversely affects bank deposits. Higher inflation increases consumer expenditures and costs of living. To maintain their standard of living, people either take out money from banks or stop depositing money in banks. However, if the inflation rate is anticipated then banks adjust deposit rates to maintain the volume of deposits and consequently, they may reduce cash withdrawals (Siaw & Lawer, 2015).

Lending is the important function of commercial banks as banks provide advances to their customers, both individuals and business organizations, to carry out investment opportunities. Besides, banks also provide credits to the government to facilitate it to commence different development projects that may positively contribute to the growth of the economy (Olokoyo, 2011). Banks' capacity of providing loans depends on many factors like bank deposits, cash reserves, bank profitability, risk-taking behaviors, and lending rates. Macroeconomic factors such as inflation, GDP growth, and central bank policy rates may also have significant impacts on banks' loan decisions. Banks charge a certain amount of interest or markup on their loans and advances. Feldstein (1998) claimed that rising interest rates made it impossible for borrowers to repay the amount of outstanding loans that may lead to bank insolvencies. On the other hand, bank loans and advances are also affected by increased inflation. There is a general expectation that if the inflation rate increases more than the interest rate, then it may increase the demand for bank credits by compensating the effect of the increase in the nominal interest rate. Therefore, we can say that bank advances are directly associated with inflation rates.

Banks' role as a financial intermediary between depositors and debtors is an essential element of economic growth and development. Therefore, banks are considered as an important sector in a well-operating financial system. As an integral component of an economic system, the influence of macroeconomic conditions and their uncertainty on the banking system cannot be ignored. Macroeconomic uncertainty mainly affects the lending and investment decisions of banks, as due to uncertainties in inflation and interest rates, the returns on banks' investments and lending cannot accurately be predicted.

During periods of stable economic conditions, there exists information symmetry in banks, which helps them in making their decisions regarding investment, and thus, it is expected that their investment should be diversified. However, macroeconomic uncertainty adversely influences banks' investment and lending because inaccurate predictions on returns create difficulty for bank managers to make investment decisions (Baum *et al.,* 2009). Price instability worsens banks' lending strategies because it induces depositors to withdraw their funds. Withdrawals of deposits result in capital shortages and adversely impact banks' lending. Owing to uncertainties, banks generally hesitate to offer financing despite the prevailing of high-interest rates in the economy. For commercial banks, the key source of earnings is the income they generate through interest. Thus, high-interest rates or unpredictable, sudden, and huge variations in interest rates render banks' credit decisions and investment choices, adversary affecting the overall profitability of the banking industry.

In Pakistan, the banking industry comprises of two types of banking systems, conventional and Islamic banking. Conventional banking (CB) is interest-based banking, whereas, Islamic banking (IB) follows the principals of Shariah and is based on the mechanism of profit and loss sharing. IB in Pakistan is originated as a reaction to both spiritual and financial requirements. In Pakistan, there is an important role of the State Bank of Pakistan in the development and promotion of IB with the guidelines of Shariah and the authoritative framework. IB as of June 2016, the Islamic banking business observed the growth of 7.4% as its assets boost up to Rs.1,745 billion. Similarly, deposits of the IB industry raised by 9.3% with a share of Rs.1,461 billion. The overall profit achieved by the IB industry is Rs.6 billion by the end of June 2016 (Islamic Banking

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Bulletin, June 2016)[3]. In Pakistan, given COBs' dominant position, the contribution of ISBs in the country's overall growth cannot be ignored. ISBs have proved their credibility and expanded their share of Pakistan's overall banking market. The latest estimates indicate the rise of IB in Pakistan's banking sector by about 12%.

Giving the growth prospects and emerging trends of IB, there is a need that the deposit growth and financing activities of ISBs vis-à-vis COBs would be investigated by considering the impact of macroeconomic indicators. The banking sector around the globe is facing a rapidly changing and competitive environment at the domestic and international levels. Deposits and lending decisions of banks are also influenced by the uncertain and unstable macroeconomic environment and market conditions of the country. In the existing literature, some studies have also been conducted to examine the determinants of deposits and advances of commercial banks. However, as per our knowledge, there is no study on the impact of inflation, real interest rates, and their uncertainty on the deposits and advances of COBs and ISBs of Pakistan. Therefore, in this paper, we examine the effects of the rate of inflation, the nominal interest rate, and their uncertainties on deposits and advances of COBs and ISBs of Pakistan. We also test the joint effect of both types of uncertainty on the underlying dependent variables. To carry out the empirical analysis, we use an unbalanced panel dataset for a sample of 25 banks including both COBs and ISBs operating in Pakistan during the period 2008-2015.

The contribution of the paper to the existing literature is twofold. First, most of the previous studies have focused on exploring the effects of inflation and interest rates on either bank deposits or bank loans and advances. However, departing from these studies, the main aim of the paper in hand is to investigate the effects of unexpected variations (volatility of) in the inflation rate and interest rates. Any empirical

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[3] *Islamic Banking Bulletin June 2016.* Islamic Banking Department, the State Bank of Pakistan.

https://webcache.googleusercontent.com/search?q=cache:8J26e3KF-okJ:https://ceif.iba.edu.pk/pdf/islamic-banking-bulleting-jun2016.pdf+&cd=1&hl=en&ct=clnk&gl=pk

examination of whether, when, and how banks take into consideration the uncertainty associated with both of these variables would be of great importance for enhancing our understanding on the empirical determinants of bank deposits and advances. Second, most of prior empirical investigations have examined the inflation and interest effects for the case of conventional commercial banks. Nevertheless, this paper expands the literature by investigating the effects of both types of uncertainty for Islamic *versus* conventional banks. Islamic banking is growing day-by-day and banking practices are carried out in dual banking system in most of Muslim and even in several non-Muslim countries. Given all this, it would be of great importance if the theoretically established and by default differential responses of both Islamic and conventional banks to any internal and external shocks is supported by empirical evidence.

The rest of the paper is structured as follows. The following section presents the literature review. The date and econometric methodology applied in the analysis are discussed in Section 3. The empirical results are displayed in Section 4 and some concluding remarks are given in Section 5.

2. Literature Review

2.1 Evidence on Bank Deposits

Deposits are considered as the principal origin of funds for the banking sector. The ability of banks to provide financing to the businesses to fulfill their capital requirements is mostly highly dependent on the amount of deposits, which the banks attract. In the past, many studies have been conducted to determine private saving behavior for a single country and cross-country comparison. Cardenas and Escobar (1998) examined the saving conducts in Colombia and determined that high administration expenses decrease national savings. The study also found a perfect correlation between savings and investment. Loayza and Shankar (2000) investigated the expansion of the private saving rate in India over the period 1960-1995. By applying the cointegration approach, the study found that saving rates are significantly affected by factors like the real interest rate, per capita income, the share of agriculture in GDP, inflation, the dependency ratio, and financial development.

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Athukorala and Sen (2003) also investigated the factors of individual savings behavior in India during financial development, over the period 1954-1998. They considered income growth (IG), the rate of growth of population (GPOP), the real interest rate (RIR), real wealth, per capita income (PCI), inflation (INF), terms of trade (TOT), public saving to GDP rate (PS), bank density (BD), and remittances (REM) as determinants of private saving in India. The findings of their study revealed that IG, PCI, RIR, INF, TOT, PS, REM, and BD significantly affect savings.

Hondroyiannis (2004) analyzed individual saving behavior in Greece using data over the period 1961-2000 and found that fertility choice, the old-age dependency ratio, RIR, liquidity constraint, and public finances considerably affect the long-term saving behavior. Haron and Azmi (2006) investigated the structural determinants of commercial banks' deposits in Malaysia. Their study employed cointegration techniques on the data of both financial and economic factors like rates of profit of Islamic banks, deposits rates, lending rates, Kuala Lumpur composite index, money supply (MS), CPI, and GDP. They concluded that NIF and RIR both have adverse effects on bank deposits, whereas, the composite index and MS positively, significantly influence bank deposits.

Kasri and Kassim (2009) determined the factors of saving in Indonesian Islamic banks during 2000-2007. The results indicated the conventional interest rate as an important factor of savings in ISBs. Moreover, high rates of return and low-interest rates have a significant effect on the deposit growth of ISBs. The study also discovered that customers transfer their deposits from ISBs to COBs when return rates on savings in ISBs go down than COBs. Karim *et al.* (2014) analyzed and compared COBs and ISBs in terms of the impact of capital requirements on the growth of deposits and advances in 14 OIC countries from 1999-2009. Their study also considered the change in equity, liquidity, fee income, INF, and the change in real GDP in determining the deposits and advances for a total of 328 banks. The results indicated a highly positive association between capital adequacy and deposits and loan growth for both COBs and ISBs. Siaw and Lawer (2015) examined the impact of macro and financial variables on bank deposits in Ghana during 2000-2013. The results showed that INF and deposit interest rates have a negative influence on

bank deposits in the long run. In the short run, only INF and monetary policy rates found to be significantly impacted bank deposits.

Ergec and Arslan (2013) identified the effects of interest rates on the deposits and loans decisions of conventional and Islamic banks in Turkey for the period December 2005-Juley 2009. Estimating the vector error correction model the authors provided the evidence showing that Turkish banks' decisions regarding loans are significantly affected by interest rates. Similarly, it also appeared that the interest rate is significantly determining bank deposits during the examined period.

Adem (2015) studied the empirical determinants of the volume of bank deposits by utilizing the data on Commercial Bank of Ethiopia. The results of the study provided evidence of a positive, significant impact of deposit interest rate, the rate of inflation, GDP, and foreign remittances on bank deposits. Mashamba *et al*. (2015) examined the impact of deposit interest rates on deposit mobilization for banks operation in Zimbabwe during the period 2000-2006. The authors documented that interest rates have positive impacts on the amount of bank deposits during the period of the study.

Boadi *et al.* (2015) empirically examined the response of bank deposits to interest rate liberalization in Ghana by using the OLS estimation method. The results of the analysis provided evidence that a significant amount of variation in bank deposits is attributed to both interest rate liberalization and GDP of the country.

Hassan (2016) examined the impacts of interest rates on bank deposits for Nigerian banks. The authors found the significant and negative association between interest rates and the volume of deposits of commercial banks for the period 2000-2013. He also showed that the negative relationship between interest rates and bank deposits remained robust even after controlling the effects of GDP.

Ferrouhi (2017) analyzed the determinants of banks' deposits using the data of Moroccan banks for the period 2003-2004. The findings of the study revealed that bank size, interest rates, the rate of unemployment, and the inflation rate have significant effects on bank deposits. Nazib and Masih (2017) found that monetary policy shocks significantly affected

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Malaysian Islamic banks' deposits. The results of the study also revealed that the effects of the inflation rate on bank deposits are also highly significant.

Raza *et al*. (2017) investigated how interest rates affect the savings and deposits of Pakistani commercial banks and other financial institutions for the period 2002-2016. The OLS regression results indicated that although the effect of the interest rate on bank deposits is positive, it negatively affects the savings of banks and other institutions included in the sample. Mushtaq and Siddiqui (2017) estimated the ARLD model in a panel framework to quantify the effects of interest rates on bank deposits for Islamic and non-Islamic countries for the period 1999-2014. The authors have documented significant evidence of no significant relationship between interest rates and bank deposits for Muslim countries. These findings hold for both short and long run. Quite the opposite, the results for non-Islamic countries revealed that interest rates are positively related to the volume of bank deposits.

Latheef and Masih (2017) investigated the asymmetries in the effects of macroeconomic indicators (interest rates, inflation, money supply, exchange rates, and trade balances) on deposits behavior in the Maldives. They results showed that although all other macroeconomic variables have symmetric effects on deposits, the effects of interest rates are quite asymmetric both in the short run as well as in the long run. Naz *et al.* (2018) examined how monetary policy affects Islamic banks' deposits during the period 2008Q1-2017Q3. The empirical results of the study based on the ARDL model indicated that several macroeconomic variables such as interest rates, price levels, and money supply have significant effects on bank deposits.

Ünvan and Yakubu (2020) investigated the effects of several bank-specific variables on banks' deposits. Estimating the random effects models they found that the size of banks, the profitability of banks and the liquidity position of banks significantly determine the amounts of bank deposits. They further showed that the rate of inflation has a significant, negative impact on banks' deposits. Yet, they found that the capital adequacy ratio does not have any significant influence on bank deposits.

2.2 Evidence on Bank Advances

Banks earn interest income through providing loans to various sectors of the financial system including the private sector and public sector. Osayameh (1991) argued that the core objective of commercial banks' lending is to maximize their share of earnings. Banks take deposits from customers and utilize these deposits to grant financing in the form of advances or loans to other businesses and individuals, and thus, they increase their share of investments in the economy. Chernykh and Theodossiou (2011) explored the lending determinants of Russian banks for the year 2007 with 881 observations. By adopting the OLS estimation technique and HRM robustness test, the authors indicated that bank size, capitalization, and lack of long-term liabilities were the major, significant determining factors of commercial banks' lending towards businesses. In the context of Nigeria, Olokoyo (2011) investigated the factors that influence commercial banks' lending behavior. The study employed secondary data of 89 commercial banks for the period 1980-2005. The results indicated a significant, positive association between banks' credit and deposit volume, investment portfolio, yearly exchange rate, and gross domestic product. It was also revealed that bank deposits tremendously affect the lending behavior of banks.

Olusanya *et al.* (2012) explored the key aspects of Nigerian commercial banks' lending behavior over the period 1975-2010. They estimated the same model as employed by Olokoyo (2011). By using various econometric techniques, the results revealed a significant positive association between Nigerian commercial banks' advances and annual average exchange rate, GDP, deposits, and cash required reserves. However, the interest rate and investment portfolio both have negative influences on banks' lending.

Tomak (2013) aimed to explore the bank-specific and market-based indicators of the Turkish banking sector's lending behavior for the period 2002-2012. The empirical results suggested that the lending behavior of the Turkish banking sector was significantly and positively affected by the size, total liabilities, and the rate of inflation while the impact of non-performing loans on bank advances appeared to be negative. However, there was no impact of interest rate and GDP on banks' lending. Malede (2014) analyzed commercial banks' factors of lending in Ethiopia over

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the period 2005-2011. By applying the Ordinary Least Squares (PLS) method, the study suggested that banks' lending was significantly and positively influenced by bank size, GDP, credit risk, and the liquidity ratio. Moussa and Chedia (2016) investigated commercial banks' credit factors in Tunisia during the period 2000-2013. The result suggested that return on assets, net interest margin, and the inflation rate significantly affected banks' lending.

Qayyum (2002) investigated the demand-side determinants of Pakistani banks' lending to corporate firms. They found a long-run cointegrating relation among the demand for bank credit, industrial output, RIR, and INF. Imran and Nishat (2012) examined bank credits' determinants for the period 1971-2008 for Pakistan. By applying the ARDL econometric approach, the study established a positive significant impact of domestic deposit, foreign liabilities, financial development, the exchange rate, and fiscal conditions on banks' lending towards the non-public sector. However, INF and money market rates both have no impact on banks' advances. Further, the authors found that both domestic deposits and private credits are independent at least in the short run.

Olokoyo (2011) explored the factors affecting the lending behavior of commercial banks in Nigeria during the period 1980-2015. The findings showed that the liquidity ratio, the cash reserve requirement ratio, the lending rate, and investment portfolios have significant effects on the lending decisions of banks.

Ayub and Javeed (2016) examined the role of capital adequacy ratio in determining financing behavior of Islamic banks in Pakistan for the period 2005-2014. The results of the panel model showed that a higher capital adequacy ratio has a significant, negative effect on Islamic banks' financing behavior. Another study by Lee (2016) determined the effects of macroeconomic factors on the lending decisions of Malaysian banks for the period 2005-2014. The author did not find any evidence in favor of the significant effects on GDP, interest rates, and cash reserves on bank lending decisions.

Baoko *et al.* (2017) estimating the ARDL model found that inflation, interest rates, money supply, and bank size have significant influences on

banks' decisions to expand their credits to private sector during the examined period. Timsina (2017) also examined the lending behavior of banks operating in Nepal during the period 1975-2014. The author pointed out that inflation, interest rates, liquidity ratios, and GDP are significant in determining the credit supply decisions of banks. Rashid and Khalid (2017) investigated the impacts of inflation and real interest rate uncertainty on Islamic and conventional banks' performance and solvency in Pakistan during the period 2008-2015. The GLS results suggested that over and above the bank-specific determinants, both types of uncertainties have significant influences on bank performance and solvency. Yet, the results showed that the effects are quite different for Islamic and conventional banks.

Balago *et al*. (2018) examined the influence of several monetary policy instruments on the lending behavior of banks. Along with several other findings, the study has reported a negative effect of the interest rate on banks' lending decisions. However, the results revealed that exchange rates are positively related to lending. Akani and Oparaordu (2018) explored the factors including macroeconomic variables and monetary policy instruments that affect the credit decisions of Nigerian commercial banks. The authors found that both deposit liabilities and the liquidity ratio affect banks' loans and advances positively. However, they found that deposit rates and banks' total branches significantly, negatively affect loans and advances. Estimating another specification, they showed that both exchange rates and the inflation rate have significant positive impacts on the total amount of loans and advances of commercial banks

Noor and Ali (2018) examined the response of bank deposits to the tax imposed on bank withdrawals in 2006. They found that the imposition of bank withdrawal taxation in Pakistan has significantly reduced bank deposits during the examined period (2006-2014). Bhattarai (2019) examined how the lending operations of banks operating in Nepal are affected by bank-specific and external factors. The findings of the study confirmed that while both exchange rates and inflation rate have positive effects, interest rates have negative effects on loans and advances.

Recently, Yumusa *et al.* (2020) using time series data for the period 1980-2018 studied the determinants of bank lending for the case of Nigerian banks. The findings of the study provided strong evidence of the negative effects of both inflation and interest rates during the period under

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investigation. However, exchange rates have positive effects on total bank loans and advances. Another recent study by Ibenyenwa (2020) pointed out that commercial banks' credit ratios significantly respond to various types of interest rates and risk premium in both long and short run. Further, the study documented that reductions in the interest rate significantly improve the credit supply capacity of both Nigerian as well as South African banks.

More recently, Rashid *et al*. (2020) investigated how monetary policy affects the credit supply decisions of Islamic and conventional banks in Malaysia for the period 2005-2016 by applying the system GMM estimator. The authors found that the effects of interest rates are negative and significant on credit expansion. However, the results also confirmed that these negative effects are considerably less in Islamic banks than their conventional counterparts. Finally, the findings suggested that smalls-sized banks and less-liquid banks are more affected by changes in interest rates.

In an early study, Rashid and Shah (2019) investigated the effects of tight monetary policy on the financing decisions of Islamic and conventional banks in Pakistan for the period 2005-2016. The results of the study suggested that although both types of banks significantly reduces their financing during the periods when interest rates are higher, Islamic banks do so less. Finally, the results revealed that large-sized banks and more-liquid banks' credit supply decisions are less affected by increased interest rates.

3. Empirical Methodology

3.1 Empirical Models

3.3.1 Bank Deposits Model

In the following model, customer deposits are used as a dependent variable to estimate the influence of different bank-specific and macroeconomic variables and their uncertainty on the deposits of conventional and Islamic banks.

$$Deposits_{it} = \beta_1 + \beta_2 CAR_{it} + \beta_3 DIR_{it} + \beta_4 BS_{it} + \beta_5 INF_t + \beta_6 NIR_t + \beta_7 UN_t^{INF} + \beta_8 UN_t^{NIR} + \mu_{it}$$

$$(1)$$

where i presents ith bank at year t, μ_{it} shows the residuals. Bank deposits are independent variables. CAR_{it} is the dependent variable that shows the capital adequacy ratio. Deposit interest rate (DIR_{it}), BS_{it} represents bank size, INF_t reflects the rate of inflation and NIR_t shows the nominal interest rate, UN_t^{INF} is inflation uncertainty and UN_t^{NIR} is nominal interest rate uncertainty at year t. The CAR_{it} and BS_{it} are taken from the model estimated by Karim *et al.* (2014), whereas, DIR is taken from the model estimated by Siaw and Lawer (2015). INF_t and NIR_t are taken from the model estimated by Finger and Hesse (2009). Their study, however, used interest rate differentials as a proxy for the interest rate.

3.3.2 Bank Advances Model

In this model, customer advances are used as the dependent variable to examine the effect of different bank-specific, macroeconomic determinants, and their uncertainty on banks' advances/ financing.

$$Advances_{it} = \beta_1 + \beta_2 CAR_{it} + \beta_3 VD_{it} + \beta_4 CRR_{it} + \beta_5 CR_{it} + \beta_6 BS_{it} + \beta_7 INF_t + \beta_8 NIR_t + \beta_9 UN_t^{INF} + \beta_{10} UN_t^{NIR} + \mu_{it}$$

$$(2)$$

where $Advances_{it}$ are the advances of bank i at year t used as the dependent variable. The independent variables are VD_{it} (Volume of deposit), CRR_{it} (cash required reserve), CAR_{it} (capital adequacy ratio, CR_{it} (credit risk), BS_{it} (bank size), INF_t (inflation), NIR_t (nominal interest rates), UN_t^{INF} (inflation uncertainty), and UN_t^{NIR} (real interest rate uncertainty) for each bank i at each year t. These macroeconomics indicators and bank-specific variables are taken from the model estimated by Moussa and Chedia (2016), Malede (2014), and Olusanya *et al.* (2012).

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3.2 Variable Description

Table 1 represents the description of the macroeconomics and bank-specific variables.

Table 1: Description of Bank-specific and Macroeconomic Variables

Dependent Variables		Description
	Deposits	Bank deposits are considered as the most secure and liquid financial assets of a bank, which can increase banks' credit to a variety of sectors. Customer deposits are the basic source of bank loans (Mac Carthy *et al*. 2010). Deposits = (Deposits/Total Assets) × 100
	Advances	Advances are the main source of banks' income. Advances/ loans are the amounts of money lend by the bank to its customers with an agreement to return that loan within a specified time (Malede, 2014). Advances = (Loans/Total Assets) × 100
	Capital Adequacy Ratio (CAR)	Capital adequacy ratio is an important measure of banks' profitability and capital strength. Higher capital adequacy ratios are reflected low leverage and therefore lower risk and higher revenue (Naceur & Khalid, 2009). CAR = [(Tier 1 Capital + Tier 2 Capital)/ Total Assets] × 100

Bank-Specific Variables	Volume of Deposits (VD)	Deposits are a key source of money for a bank as they should be deposited to raise income. Deposits/Total Assets ratio calculates measures the volume of deposits a bank receives in the proportion of its scale (Acaravci & Calim, 2013). VD = (Deposits/Total Assets) $\times$ 100
	Credit Risk (CR)	Credit risk is defined as the danger posed by the bank when the borrower does not recoup the sum of credit /loan provided. The bank is making rules against these loans. Credit risk adversely impacts bank efficiency (Ali *et al.,* 2011). CR = (Loan Loss Provisions/Gross Loans) $\times$ 100
	Bank Size (BS)	Mostly, in the finance literature, the total assets of a bank are considered as a substitute for bank size. Bank size is also a measure of bank lending decisions (Berger & Udell, 2006). Bank Size = ln (Total Assets)
Macroeconomic Indicators	Deposit Interest Rate (DIR)	Deposit interest rate is the amount of money paid out in interest/ profit by a bank on the principle amount taken as deposits. Banks pay deposits interest rates on savings and other investment accounts.
	Cash Required Reserves (CRR)	The cash reserve requirement ratio is defined as the proportion of banks' cash reserves to the overall assets of the bank. Cash reserve is the amount that the bank kept with the central bank or other banks to meet its credit requirements. CRR = (Cash Required Reserves/Total Assets) $\times$ 100
	Inflation Rate (INF)	INF is defined as the continuing rise in the level of accessible goods and services prices. It is determined by taking the percentage change annual consumer price index (Kanwal & Nadeem, 2013).
	Nominal Interest Rate (NIR)	NIR is the call money rate. The call money rate is the interest rate on a form of temporary loan provided to brokers by the banks. In exchange, the brokers lend the capital to creditors to finance marginal accounts call money rate is the cost dictated by the government and it greatly influences the deposits, advances, etc. of the bank.
Uncertainty	Inflation Rate Uncertainty (UN_t^{INF})	Inflation rate uncertainty is defined as the unexpected variation in the rate of inflation over time and it is measures by the 12-month standard deviation of the inflation rate.

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	Interest Rate Uncertainty (UN_t^{NIR})	Interest rate uncertainty is defined as the unexpected variation in the level of interest rate over time and it is measured by the 12-month standard deviation of call money rate.

3.3 Data

We used a sample of 25 banks that includes both large and small banks of Pakistan. For our research, we assembled data of 20 COBs and 5 ISBs from the period of 2008-2015. We have a total of 200 observations, in which COBs' observations are 160 and ISBs' observations are 40. Secondary annual balanced panel data for bank-specific variables were obtained from selected banks' combined annual financial statements from their official websites. However, data for deposit interest rates are taken from World Bank Indicators (WDI). Monthly data of consumer price index (CPI) and call money rates are collected from IMF's International Financial Statistics (IFS) database.

3.4 Estimation Technique

We started by calculating the required financial ratios of bank-specific variables. The uncertainty of macroeconomic indicators is measured by calculating the 12-month standard deviation (SD) using monthly data of INF and NIR. After that, we merged the bank-specific variables with the values of the standard deviation of INF and NIR. For testing heteroskedasticity in the data, we applied the Breusch Pagan/Cook Weisberg test. The Breusch Pagan/Cook Weisberg test checks the linear form of heteroskedasticity. To implement the test, we estimated the models by employing the technique of ordinary least square (OLS). Breusch Pagan test is the chi-squared test and test the null hypothesis of homoscedasticity. If the value of chi-squared is greater than the critical value at any acceptable significance level, then the null hypothesis of homoscedasticity is rejected and the alternate hypothesis of heteroskedasticity is accepted.

The results of almost all the test statistics appeared to be significant which evidenced the presence of heteroskedasticity in the data. Therefore, to control heteroskedasticity, we used the Generalized Least Square (GLS) method for estimating the empirical models. The GLS method is more

efficient than OLS in the presence of heteroskedasticity or autocorrelation.[4] At last, we applied the linear parametric restriction test to test the joint significance of the macroeconomic indicators included in the specification. First, we estimated our models for the full sample, then, for the comparison purpose, we estimated the same models for COBs and ISBs separately.

4. Regression Results

4.1 Breusch Pagan Test/Cook Weisberg Test

Breusch Pagan/Cook Weisberg test is commonly used to check the presence of heteroskedasticity in the model. It is implemented by considering that heteroskedasticity can be a linear function of all the independent variables in the model to be estimated. [5]The significance of the test statistics provides evidence of the presence of heteroskedasticity. Therefore, it rejects the null hypothesis of homoscedasticity. We applied the Breusch Pagan/Cook Weisberg test to check heteroskedasticity. The results presented in Table 2 of these tests provide evidence of the presence of heteroskedasticity in panel data.

Table 2: Results of Breusch Pagan/Cook Weisberg Test

Deposits	$Chi^2 (1) = 3.77$ $Prob > Chi^2 = 0.0521$
Advances	$Chi^2 (1) = 0.61$ $Prob > Chi^2 = 0.4253$

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[4] Baltagi, B. H. (2008). Econometrics (4th ed.). New York: Springer
  Generalized Least Squares Pages: 223-239.

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It can be observed from the table that the p-value of the deposits' model is 0.045 and for the advances' model is 0.001, indicating significance at the 5% and 1% level, respectively. The significance of the statistics confirms the presence of heteroskedasticity in the models. To deal with the problem of heteroskedasticity, we applied the generalized least squares (GLS) estimation method. The values of Wald Chi^2 are presented in each table and all Wald Chi^2 values have a probability of 0.0000 for each model. The Wald Chi^2 suggests that if the probability is lower than 0.05, it illustrates that all the estimated coefficients are statistically not equivalent to zero. It also recommends that all the considered variables considerably contribute to enhancing the good fit of the model.

[5] Breusch Pagan Test
http://www.dummies.com/education/economics/econometrics/the-role-of-the-breusch-
pagan-test-in-econometrics/

Further, we applied a linear parametric restriction test on the coefficient of SD of INF and the SD of NIR. We carried out this test by applying linear restrictions on the parameters of these variables and the estimated values suggested that both inflation rate uncertainty and real interest rate uncertainty should be a part of the model.

4.2 Results and Discussion of Bank Deposits Model

In Table 3, we presented the empirical results of bank-specific and macroeconomic indicators. The negative estimate of the capital adequacy ratio indicates that increases in banks' capital adequacy ratio decrease the level of banks' deposits. Our results are inconsistent with the results of Schmitz (2007) and Karim *et al.* (2014). Their studies reported a positive relationship between bank deposits growth and capital requirements. The deposit interest rate appears to affect bank deposits with a negative sign but the result is insignificant. Our results are consistent with the results of Eriemo (2014). The coefficient of bank size is statistically insignificant with a positive sign. This means that large bank size has no significant impacts on banks' deposits growth.

The rate of inflation is positively related to banks' deposits and is statistically significant at the 10% level of significance. This means that bank deposits grow with the inflation rate. The estimated coefficient of

NIR indicates a negative but statistically insignificant relationship with banks' deposits. There is a general perception that banks attract more deposits with an increase in the interest rate. However, our result suggests that the interest rate is not a major reason for customers keeping their deposits with the banks, at least in the period we examined in this study.

Although the finding of the negative effect of interest rates on bank deposits is not consistent with the traditional banking theory, it can be justified in several ways. First, one should note that several other studies on Pakistan such as Hassan (2016), Raza *et al*. (2017), and Mushtaq and Siddiquie (2017) have also documented the negative and statistically significant impact of the interest rate on bank deposits using different techniques and different sample periods. Latheef and Masih (2017) have also shown the negative relationship between interest rates and bank deposits.Thus, our findings are consistent with the findings of the previous existing studies on Pakistani banking sector. Second, the negative effect of interest rates on bank deposits can be rationalized as follows. In Pakistan, the interest rate is generally set higher to control inflation. Therefore, during periods of higher inflation, individuals either withdraw their deposits from the banks or, at least, deposit less amounts to maintain their purchasing power. This leads to reductions in total bank deposits despite of the monetary authority has set higher interest rates to curb the inflationary pressures in the economy. Another reason of the negative effect of the interest rate on bank deposits is that during episodes of higher interest rates, the opportunity cost of keep demand deposits has increased. Therefore, individuals may prefer to investment in other saving schemes such as National Saving Certificates and do investments in non-banking financial institutions such as mutual funds and insurance companies. This will also reduce the total volume of bank deposits. Similarly, the imposition of taxation of bank withdrawals is also one of the major reasons of the reduction in bank deposits.

One of the reasons of lacking the significant link between interest rates and bank deposits can be the motive of savings. In the country like Pakistan having the characteristics such as the majority of Muslim population, financial, economic, and political uncertainty, low financial literacy, low outreach and less financial inclusion, unavailability of attractive financial instruments, complicated banking procedure, and banks offering very low deposit rate despite higher policy rate, most of

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people generally keep deposits with the banks for future requirements rather than really with the intentional of earning interest/return. Given this context, it is very likely the deposits of banks would be very less sensitive to changes in the interest rate.

Finally, in episodes of higher interest rates, informal credit markets may be flourished in Pakistan as banks charge higher interest rates on financing. Therefore, individual may find profitable and easy to lend in the informal credit market rather than to deposit into banks. This attitude of individuals will also cause reductions in the total amount of bank deposits during the periods of higher interest rates in the economy.

The coefficient of inflation uncertainty (SD of inflation) reveals that inflation rate uncertainty is positively, significantly related to banks' deposits. This implies that increased inflation uncertainty results in higher banks' deposits. The impact of the inflation rate on banks' deposits depends on whether the rate of future inflation is anticipated or not (Revell, 1979). When the inflation rate is anticipated then banks are able to adjust prices and interest rates. Thus, it is presumed that there will be a positive relationship within anticipated inflation and bank deposits and a negative association between unanticipated inflation and bank deposits. The coefficient of real interest rate uncertainty (SD of interest rates) is negative, suggesting that it negatively affects bank deposits. This means that unexpected variations in NIR decrease banks' deposits. Finally, we apply a linear parametric restriction test. The value of Chi^2 is 0.000, which is significant at the 1% level of significance. This means that both the SD of inflation and the SD of interest rates significantly contribute toward the prediction and fitness of the model. Therefore, these two variables should be included in the model.

Table 3: Regression Results for Bank Deposit Model

Empirical Results for Panel Data (Generalized Least Squares)

Variables	Full Sample	Conventional Banks	Islamic Banks
Capital Adequacy	-0.503***	-0.379***	-0.465***
Ratio (CAR)	(0.06)	(0.06)	(0.14)
Deposit Interest	-0.073	0.323	-2.017
Rate (DIR)	(0.65)	(0.65)	(2.18)
Bank Size (BS)	0.418	1.437***	4.560***
	(0.36)	(0.43)	(1.27)

Inflation Rate	1.054*	1.198*	2.883*
(INF)	(0.60)	(0.62)	(1.71)
Nominal Interest	-0.458	-0.435	1.902
Rate (NIR)	(0.45)	(0.47)	(1.30)
SD Inflation	8.873***	8.486***	5.841
(UN_t^{INF})	(1.61)	(1.71)	(4.08)
SD Interest Rate	-3.339***	-2.501***	-2.092
(UN_t^{RIR})	(0.79)	(0.84)	(2.02)
Constant	74.657***	47.236***	-6.034
	(9.39)	(10.83)	(31.17)
Wald Chi2	108.829	76.820	93.855
Prob. > Chi2	0.0000	0.0000	0.0000
Linear Parametric Restrictions			
(1) SD_INF = 0			
(2) SD_Real Interest = 0			
chi2 (2)	30.29	26.54	2.06
Prob > chi2	0.0000	0.0000	0.3571

Note: * indicates significant at 10% level, ** indicates significant at 5% level, and *** indicates significant at 1% level.

In the case of conventional banks, except the deposit interest rate, all the other bank-specific variables have significant effects on banks' deposit growth. Our results for deposit interest rates are consistent with the results of Siaw and Lawyer (2015). The coefficient of the inflation rate is positive and statistically significant. The estimate of the real interest rate is negative and statistically insignificant. The coefficient of inflation uncertainty is statistically significant with a positive sign. This means that increases in the unexpected variation in the future direction of inflation increase the banks' deposit volume. On the other hand, the coefficient of NIR uncertainty appears to be negative and statistically significant. This indicates that increases in the unexpected variation in the future direction of interest rate decrease the banks' deposits volume. In the last, we applied a linear parametric restriction test. The value of Chi^2 is 0.000, which is significant at the 1% level of significance. It means that the SD of inflation and the SD of nominal interest rates are a good contribution towards the prediction and fitness of the model. So, these variables should be the part of the model.

In the case of ISBs, except for the deposit interest rate and the real interest rate, all the other variables have significant coefficients. The calculated

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coefficients of NIR and its uncertainty are positive but statistically negligible. This means that they do not have any significant impact on ISBs' deposit growth. In the last, a linear parametric restriction test is conducted to test the joint significance of the SD of inflation and SD of the nominal interest rate. The value of Chi^2 is 0.35, which is statistically insignificant. Hence, the results suggest that these two variables should not be a part of the model.

4.3. Results and Discussion of Bank Advances Model

In Table 4, we presented the empirical results for the banks' advances model. The coefficient of the capital ratio shows a negative sign with bank advances and it appears significant at the 1% level of significance. This means that an increase in banks' capital decreases banks' capacity to give advances. Our results are in line with the findings of Rababah (2015) that also indicated the negative relationship between capital and banks' lending. Nevertheless, their results were not statistically significant. The study of Berrospide and Edge (2010) revealed that the relationship between the capital adequacy ratio and banks' lending is the key point to determine the relationship between financial conditions and banks' real activities.

The volume of the deposit is negatively related to banks' advances but the estimated value of the coefficient is not statistically significant. Our results are consistent with the results of Malede (2014), Mac Carthy *et al.* (2010), and Sebastian (2009). The estimated coefficient of the variable cash required reserves is statistically significant with a positive sign. This means that increased banks' reserves with treasury banks will increase the banks' ability to grant financing to its customers. Our findings are well matched with the findings of Malede (2014) and Meltzer (2003). However, the findings of their studies revealed an insignificant relationship between cash reserve requirements and banks' credit behavior. The coefficient of credit risk is statistically significant with a negative sign. This implies that increases in the level of credit risk decrease the banks' level of financing to customers and businesses. Our results are inconsistent with the results of Malede (2014) that reported a positive relationship between bank lending and credit risk. The result of bank size indicates that bank size has a negative sign and appears statistically significant at the acceptable level of significance. This means

that bank size decreases the level of banks' advances. Our findings are related to the findings of Berger and Udell (2006) but inconsistent with the findings of Malede (2014), Tomak (2013), and Chernykh and Thedossiou (2011).

The estimate of the inflation rate is positive and statistically insignificant, suggesting that the rate of inflation has positive but weak impacts on banks' advances. The results of the inflation rate are inconsistent with the results of Yigit (2000) but consistent with the results of Moussa and Chedia (2016). We can observe from the table that the coefficient of RIR is statistically significant with a positive sign. The significant estimate of the real interest rate shows that the real interest rate has a strong impact on banks' credit/advances. The estimate of inflation uncertainty is positive but the results are insignificant, suggesting that the uncertainty related to the rate of inflation has a weak impact. Yet, in the literature, studies like Yigit (2000) have documented the significant impact of inflation uncertainty on credit markets. The findings indicated that the unanticipated rate of inflation increases the interest rate, decreases the credit supply, and thus, positively influences the loan demand. The coefficient of real interest rate uncertainty is significant with a positive sign at the 1% level of significance. This means that increased uncertainty about future interest rate will also increase banks' capacity to grant financing. In the last, a linear parametric restriction test is conducted. The estimated value of Chi^2 is considerably greater than the critical value at the 1% level, suggesting a rejection of the null hypothesis. The rejection of the null hypothesis implies that both inflation uncertainty and interest rate uncertainty are considerably contributing to the good fit of the model.

Table 4: Regression Results for Bank Advances Model

Empirical Results for Panel Data (Generalized Least Squares)			
Variables	**Full Sample**	**Conventional Banks**	**Islamic Banks**
Capital Adequacy Ratio (CAR)	-0.428*** (0.07)	-0.445*** (0.08)	-0.250** (0.13)
Volume of Deposits (VD)	-0.050 (0.05)	-0.007 (0.06)	-0.020 (0.16)
Cash Required Reserves (CRR)	0.143** (0.07)	0.105 (0.07)	0.365 (0.52)
Credit Risk (CR)	-0.146* (0.08)	-0.180* (0.10)	-0.283* (0.16)

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Bank Size (BS)	-2.189***	-2.015***	-6.730***
	(0.47)	(0.53)	(1.40)
Inflation Rate	3.114***	3.967***	-4.075***
(INF)	(0.59)	(0.64)	(1.10)
Nominal Interest Rate	1.840***	2.422***	-3.039***
(NIR)	(0.47)	(0.51)	(0.89)
SD Inflation	0.384	0.767	-3.184
(UN_t^{INF})	(2.06)	(2.20)	(3.17)
SD Interest Rate	4.672***	5.295***	-0.419
(UN_t^{NIR})	(1.07)	(1.15)	(1.77)
Constant	68.735***	55.623***	206.345***
	(12.76)	(14.94)	(26.52)
Wald Chi2	150.174	161.910	88.570
Prob. > Chi2	0.0000	0.0000	0.0000
Linear Parametric Restrictions			
(1) SD_inf = 0			
(2) SD_realrate = 0			
chi2 (2)	50.48	56.74	3.10
Prob > chi2	0.0000	0.0000	0.2121

Note: * indicates significant at the 10% level, ** indicates significant at 5% level,
and *** indicates significant at 1% level.

In the case of COBs, almost all the bank-specific variables and macroeconomic indicators are statistically significant except the volume of deposits and cash required reserves. The coefficient of inflation uncertainty appears to be positive and statistically insignificant, which means that inflation uncertainty has no impact on COBs' advances. The estimated coefficient of the real interest rate is significant with a positive sign at the 1% level. This shows that the real interest rate uncertainty has an adverse influence on COBs' advances. In the last, a linear parametric restriction test is applied. The p-value of Chi^2 is 0.000, indicating the rejection of the null hypothesis, which implies that both types of uncertainty should be included in the specification of the model to enhance the prediction power of the model. It depicts that the SD of inflation and the SD of nominal interest rates significantly contribute to the model's prediction and fitness.

For ISBs, both types of bank-specific and macroeconomic indicators represent the same degree of sign and importance as COBs. However, the coefficient of inflation uncertainty and the uncertainty of the real interest rate is negative and statistically insignificant, which implies that there is

no impact of unexpected variation of the interest rate and rate of inflation on ISBs' advances. In the last step, the linear parametric restriction test on the coefficient of the SD of nominal interest rate and inflation. The *Chi²* value of this test is 0.212 that indicates that these variables do not have any significant contribution to the good fit of the model.

5. Conclusions

This study looks at the impact of real interest rates, the rate of inflation, and their volatility on deposits and advances of Islamic and conventional banks in Pakistan. The paper's key objective is to determine whether the impacts of inflation uncertainty and interest rate uncertainty on bank deposits and advances are different for COBs and ISBs. For the empirical analysis, annual data covering the time period 2008-2015 for a sample of 25 banks are used. To overcome the problem of heteroskedasticity in the dataset, the GLS estimation method is used.

The results of the conventional banks' deposit model suggest that the capital adequacy ratio, bank size, the rate of inflation, inflation rate uncertainty, and real interest rate uncertainty all have significant influences on COBs' deposits. These findings suggest that COBs should improve its capital structure to increase deposits. Large COBs are well diversified and attract more customer deposits. The rate of inflation is considered as an important determinant for COBs' deposit growth. Also, unexpected variations in the rate of inflation have positive impacts on COBs' deposits, whereas, unexpected variations in NIR adversely affect COBs' deposits. On the other hand, In the case of ISBs, only the capital adequacy ratio, bank size, and the inflation rate have significant impacts on deposit growth.

The results of COBs' advances model reveal that the capital adequacy ratio, credit risk, bank size, INF, NIR, and the interest rate uncertainty all have significant impacts on COBs' advances. The findings suggest that COBs should improve its capital structure to increase financing. Non-performing advances have a bad influence on the capability of COBs to provide funding to customers and other business segments. The diversification and larger bank size have negative impacts on COBs' advances.

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5.1 Policy Implications

COBs can accurately predict inflation and adjust the interest rate appropriately, which increases their potential for advances. High real interest rates can have a beneficial impact on advances created by COBs. Moreover, the sudden variability of the actual interest rate has a favorable impact on conventional bank advances. For Islamic banks, credit risk, the capital adequacy ratio, the inflation rate, bank size, and the real interest rate have a significant impact on the advances made by Islamic banks.

Like COBs, ISBs should also improve their capital structure and control bad financing to enhance their stability. ISBs are well diversified and have more accessibility to customers and businesses and this increases their capacity to provide advances. Unlike, COBs, ISBs should increase their potential to anticipate inflation precisely and to make proper adjustments of returns on their advances, accordingly. We also observe that higher interest rates decrease ISBs' ability to provide credits/financing. Therefore, ISBs should design effective and appropriate strategies to minimize the adverse effects of increased interest rates. Since bank deposits are insensitive to interest rates, there is a dire need to design some other types of effective strategies and develop attractive financial products to attract deposits.

There is also a need to minimize unpredictable and sudden fluctuations in both inflation and interest rates to attract bank deposits and enhance bank loans and advances to facilitate the growth process in the country. There is also a need to design an appropriate monetary policy, which should not only help to reduce uncertainty associated with interest rates and the rate of inflation but also devise such instruments that are equally helpful and suitable to cater the requirements and needs of both Islamic and conventional banks.

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   Islamic Banks of Pakistan

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