Co-participation of Islamic and Conventional Banks in Monetary Policy Transmission Through the Bank Lending Channel in Pakistan. A Panel data Comparative Analysis.

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Abstract

The role of bank lending in Pakistan's economy is critical due to the scarcity of investment options like stocks and bonds. Continuous interest rate movements put extra pressure on banks to transmit the monetary policy through the credit channel. Islamic banks face an extra layer of difficulty while operating with limited open market instruments, lender of last resort facilities and tough competition with conventional banks. This paper aims to examine the co-participation of Islamic and conventional banks in monetary policy transmission and to explore factors that differentiate the lending of the two bank types. For descriptive statistics, Pearson correlation and panel data techniques for regression analysis such as the random and fixed effect regression models were considered after conforming to the Hausman specification (1978) test. The quarterly data for the ten years of 2009-2018 was analyzed to understand the impact of monetary policy changes on bank lending. This paper modeled bank financing as a dependent variable while three bank-specific variables (total assets, liquidity, and capitalization) and three macroeconomic variables (Growth, inflation, and policy rates) were used as explanatory variables. The analysis in this paper concluded that policy rate changes do not influence bank lending by Islamic banks. However, conventional bank lending is significantly affected by policy rates and growth. This paper concluded that Islamic banks have an insignificant role in policy transmission due to limited Shariah investment opportunities. Influenced by conventional monetary policy, tools and differences in operations and contracts affect the bank's equity and liquidity which may suffer long-term participation in the economy.

Keywords: Monetary Policy, Central Bank, Bank Lending Channel, Islamic Banks.

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1. Introduction:

A country's economic policies aim to improve the well-being of the public, and monetary policy by central banks supports this comprehensive goal by centering its efforts on endorsing price stability and growth in the country. Objectives of an effective monetary policy consist of managing the money supply and interest rates which leads to control of inflation, liquidity, growth, and consumption. Central banks target the objectives by adjusting the interest rate, floating and buying back government securities, adjusting currency exchange rates, and reviewing the mandatory reserve requirements of banks.

The bank lending channel is the most effective monetary policy instrument for achieving long-term economic growth targets. Through this channel, monetary policy affects the ability of banks to lend money and firms to borrow money. The efficiency of this channel depends on the central bank's policy on statutory reserve requirements; ease of open market operations (OMO), and at the same time dependence of individuals and business units on the banking channel. Models of the credit channel indicate that financial frictions can indirectly amplify the effects of monetary policy; the credit channel affects the economy by altering the access of credit to firms and households. In contractionary monetary policy, a reduction in credit reduces the spending and investment by agents.

Banks are an essential part of every economy especially developing economies where alternative sources of financing like the issuance of stocks and bonds are hardly available. Commercial Banks work as intermediaries to facilitate their depositors and borrowers with a variety of facilities. They attract deposits from customers and create loans to support businesses and individuals in the economy (Karim & Karim, 2014). Information asymmetries in the financial market give rise to the credit channel (Bernanke and Gertler, 1995; Kashyap and Stein, 1995). Small firms, new businesses with no track records, and firms with little reputation find it difficult to access primary capital markets for issuing bonds and stocks. Borrowing from banks is the only possibility for them to get credit facilities as banks specialize in overcoming information asymmetries (Kassim, 2006). According to Black and Rosen (2007), financial frictions stemming from information may be associated with the cost of capital if the cost of external financing rises with short-term interest rates in a period of contraction, and this may reduce the ease of getting credit. The financial sector, as a credit supplier, plays an important role in Pakistan's economy, and the central bank of Pakistan targets banks' credit for the transmission of monetary policy, leading to control the money creation. Generally, the banks support monetary policy in two dimensions: first, by influencing the cost of loanable funds and second by influencing the availability of loanable funds.

Pakistan operates in a dual banking system where contemporary and Islamic banks (IBs) work together. The last two decades witnessed phenomenal changes toward an independent banking system in the country. However, the frequently changing fiscal policies and, at the same time, highly fluctuating policy rates might have impacted the MPT in the dual banking system in the country. IBs are growing rapidly and, in 2018, captured a 13% share of the commercial banking industry. This has added more tasks for SBP to understand evaluate and improve the efficiency of the MPT mechanism accordingly. In this dual banking system, the capability of SBP needs to be different for both types of banks to understand the motive of depositors as well as structural and contractual differences between the two banks.

Pakistan evolved as a Muslim-dominant country in the world but in the absence of a robust Islamic Banking system, the contemporary commercial banking system was adopted in the country by SBP. Suffered by divergent political regimes and unstable government systems, Islamic Banking took time to rise to the aspiration in the –country's financial system. After the historic Supreme Court of Pakistan's decision that pronounced charging interest rates as unlawful, in 2001, SBP planned to promote a Shariah-compliant banking system parallel to the conventional system. The first IB started in business in 2002, and from there, Islamic banking growth was phenomenal. SBP, as a central bank, strongly participated in developing the Shariah-compliant banking system by introducing a specialized Islamic banking department to develop Shariah-compliant guidelines for products of IBs.

1.1 Challenges for Islamic Banks in Pakistan:

The transactions of IBs are principally based on equity leading to profit and loss sharing basis on both sides of the balance sheet. Charging of interest and interest-based transactions are principally prohibited in Islamic banking transactions. The relationship between the bank and the depositor is based on a profit and loss sharing basis, leaving depositors with no guarantee on the face value of their deposits. Conventional saving accounts and time deposits are referred to as investment accounts in IB. These accounts offer profit and loss sharing in contrast to the fixed interest rate offered by conventional banks (CBs). However, on the asset side, unlike CBs, IBs use several structural based contracts to fulfill the needs of borrowers. These transactions include, but are not limited to, profit and loss sharing, operational leases, deferred sales, and many more. IBs do not transact or deal in prohibited projects or haram in Shariah principles, for example, business related to alcohol, pornography, pork,

Riba (interest payments), Maysar (gambling) and Gharar (excessive uncertainty).

Compared to CBs, IBs are conservative in lending, and besides this, these banks observe due diligence in lending or financing the projects. The preferable mode of financing used to meet the financing needs of households and business is Musharaka or joint venture arrangements. From the inception, the other challenge faced by IBs is the absence of safe investment or Islamic treasury products or government securities to fulfill the liquidity management needs or do the open market operation under Shariah principles. This pushes IBs to follow the policy or short-term treasury rates of interest base treasury products to price their transactions like Ijarah or Murabaha. SBP made extraordinary efforts to arrange short-term treasury products for IBs but fulfilling the requirement of physical underlined assets for a transaction, there are minimal opportunities for IBs to invest in government securities which is a significant hurdle in operating the full-fledged IB in Pakistan.

Zaheer et al. (2013), comparing both types of banks, found that IBs in Pakistan have a higher fraction of cash reserve including the treasury and other banks as compared to CBs which is also noted in the other countries where IBs exist (Beck and Merrouche, 2013). The author further justifies this with the argument that in the early days of establishment, there were fewer investment opportunities for IBs as compared to CBs mainly due to the lack of Shariah-compliant capital market instruments like Sukuk and other alternative secured investment opportunities. From the start of operations till 2008, IBs in Pakistan fulfilled Statutory Reserve Requirement (SLR) and Cash Reserve Requirement (CRR) in the form of cash reserves. These led banks to miss the opportunity cost and be less competitive as compared to other CBs. SBP realized its importance and relaxed the reserve ratios for IBs to give them level playing fields. As discussed above, IB benchmarked their loan supply with conventional interest rates or interbank lending rates which are usually Treasury bill rates. According to Zaheer et al. (2013), IBs are less likely to be influenced by the MPT changes as they have fewer investment opportunities in open market operations and treasury products and sit with more idle liquidity. In this situation, the lending by IBs in Pakistan is not expected to be affected by MPT changes as these are indirectly linked with policy rates.

This paper aims to investigate the participation of Islamic and conventional commercial banks in the transmission of monetary policy through credit channels. As discussed above, the structural changes of the two banking systems need different policy tools to implement and achieve monetary policy goals effectively. IBs are growing rapidly in the country but the non-availability of

treasury tools puts them at a disadvantage in profitability and inefficient participation in the economy to achieve monetary policy goals. At the same time, IBs, operating in Muslim dominated economy with religiously motivated customers and profit and loss sharing nature of contractual transactions on both sides of balance sheets, may give the advantage to safeguard them from monetary policy shocks. This study intends to empirically investigate the differences in the transmission of monetary policy through Islamic and conventional commercial banks in Pakistan.

2. Review of Literature

There are various channels for implementing monetary policy changes in the economy to achieve output goals. The multifaceted MPT has been discussed as a 'black box' by Bernanke and Blinder (1992). It is a fact that there are many channels of monetary policy through which it operates concurrently. Here are some distinct channels, i.e., the interest rate channel, credit channel, exchange rate channel, and asset price channel (Cecchetti, 1995; Taylor, 1995). As each central bank exclusively prepares its monetary policy centering fiscal targets, the relative strength of "monetary policy channels" also diverges from country to country subject to the state of country-specific financial markets.

In emerging economies, the role of bank lending in an economy is critical due to the limited availability of alternative sources of financing like stocks and bonds are hardly available where credit channel plays an essential role in MPT. The credit channel is subdivided into BSC and BLC. Banks play a significant role in shaping the economy, and bank lending is a crucial intermediary between the central banks and real economic goals. The theory of bank lending states that central banks impact the demand and supply of bank loans through expansionary or contractionary monetary decisions. It is explained that in an expansionary monetary policy, bank reserves and deposit increases lead to a substantial increase in the supply of loans while in a contractionary policy, the opposite happens and leads to a reduction of credit supply by the banks (Kashyap & Stein, 1995, 2000).

Kashyap and Stein (1995) and Kashyap, Stein and Wilcox (1996) also witnessed the importance of BLC; their studies show that the contractionary monetary policy leads to a decrease in bank loan supply which hurts real economic growth. Westerlund (2003) and Bondt (1998) separately studied the European banking system to test the existence of MPT; their research confirmed the existence of BLC in Continental Europe. Bondt (1998) empirically studied the disaggregated statistical data on European banks from 1990 to 1995; the results imply that the large and small banks, as well as banks with liquid and less liquid balance sheets, responded differently to changes in monetary policy. Strong BLC

also existed in Germany, Belgium, and the Netherlands. Similarly, France and Italy faced liquidity constraints in the sample period. However, in the United Kingdom, the BLC seems nonexistent. Westerlund (2003) statistically tested BLC in Sweden by exploring the panel data covering 1998-2003; results concluded that small, illiquid, and undercapitalized banks are significantly affected by MPT.

Pieces of evidence also found in the literature on the MPT mechanism in the Malaysian economy investigated by Tai, Sek, and Har (2012) showed that post-Asian Financial Crisis (AFC) in 1997, the pass-through of MPT shock to bank lending and deposit rates in Malaysia was significantly evident. Khaw and Sivabalan (2016) and Asbeig and Kassim (2014) provided references to earlier literature concluding that MPT shocks resulted in a heterogeneous impact on several investment sectors and the consumption of goods. Ibrahim (2005), while discussing the Malaysian economic and financial sector, concluded that the finance, insurance, manufacturing, construction, and real estate sectors negatively impacted more than aggregate demand in reaction to contractionary MPT suggesting that these sectors may be more interest-rate sensitive. Farajnezhad and Suresh (2019) empirically analyzed the importance of the credit channel in transmitting the monetary policy in Malaysia and discovered the fundamental relationship of the credit channel in the modification of inflation in the economy.

Several other researchers focused on investigating the effects of MPT in the real economy of Pakistan and concluded both in favor of the existence and non-existence of MPT through different channels (Agha et al., 2005; Hussain, 2009; Shabbir, 2012; Janjua, Rashid, & Ain, 2014). Agha et al. (2005) investigated the MPT mechanism in Pakistan from 1996 to 2004and the analysis concluded that contractionary monetary policy leads to a fall in demand for investment funds which gradually reduces the price pressure and overall price levels. The study recognizes the importance of banks playing a crucial role in the MPT mechanism and recognizes the existence of the asset price channel and interest rate channel. Gupta (2004) examined the influence of MPT decisions on the real economy in Pakistan and India. The result concluded that contractionary MPT had a significant impact on bank lending channels resulting in influencing the economic activity in both economies. Rahooja et al. (2014) concluded the positive role of BLC in the MPT mechanism in Pakistan; the results suggest that bank loans, deposits, and government securities were negatively impacted by contractionary monetary policy whereas bank-specific variables like capitalization, size, and liquidity showed a mixed impact. Further, the study also

concluded that small-sized and capital-constrained banks responded more to MPT changes.

The Islamic banking industry is rapidly growing globally; the MPT in the presence of IBs remains a challenge due to the un-harmonized Shariah acceptance of different transactions in various regions. The financial system in Pakistan is a dual banking system where the conventional and Islamic commercial banks operate side by side. IBs tend to be influenced by standard monetary policy instruments and frameworks due to limited or non-availability of treasury instruments; IBs are not isolated from the macro-financial and economic background, and the implications of MPT are the same as for both banks. A stream of literature has emphasized the role of Islamic banking in the MPT mechanism in the Islamic world (Sukmana & Kassim, 2010; Majid & Hasin, 2014; Yungucu & Saiti, 2016: Aysan, Disli, & Ozturk, 2015).

It is empirically proved by Aysan, Disli, and Ozturk (2015) that the IB depositor's sensitivity to policy rate changes is higher than that of conventional bank (CB) depositors leading to conclude that the contractionary monetary policy brings more deposit losses for IBs in the dual banking system as depositors switched to CBs for higher profits. Kasri and Kassim (2009), while analyzing the IBs in Indonesia, found that level of deposits was negatively correlated with real interest rates. This is likely the heterogeneous amount of all CBs as the bank-specific variables may support IBs to maintain their resources to meet customer lending demands.

The earlier notable study on the banking sector in Pakistan by Agha et al. (2005) explained that the BLC, along with the traditional exchange rate channel, is a significant source of MPT in Pakistan. Similar research by Mohsin (2011) explored the impact of MPT on bank lending and deposit rates in Pakistan. Janjua, Rashid, andAin (2014) found a negative correlation between monetary policy and bank loan supply, and they opined that the contracting monetary policy adversely impacted smaller banks as compared with larger banks. Zaheer et al. (2013) investigated the response of MPT shocks across the bank-specific variables in two types of banks. Bank liquidity differentiates the loan supply in small banks; however, the large banks are unaffected by liquidity positions. However, IBs are similar in size to small banks and maintain the loan supply like large CBs. The study concluded that the credit channel might be less affected by the MPT mechanism when dealing with IBs in Pakistan as IBs are growing rapidly. Most recently, Rafay and Farid (2019) examined the significance of IB deposits and financing in transmitting monetary policy in the real economy. The results revealed that IBs are significantly participating in the MPT in Pakistan.

From the above literature review, this study evaluates the role of the credit channel in MPT through IBs in Pakistan. This research aims to enrich existing literature on the contribution of IBs in participation in the real economy and is capable of transmitting monetary policy decisions into the real economy. Islamic banking is growing very rapidly in Pakistan with limited availability of treasury products as well as open market operation instruments making this study significant for researchers, commercial banks, and central banks to help them broaden the presence of IBs in Pakistan. This comparative study will help identify the essential financial and macroeconomic variables for policymakers to formulate the MPT mechanism through which favorable results can be achieved. Secondly, this research will help identify the direct relationship between the selection of transmission channels and economic targets like price stability, growth, or inflation. Thirdly this research will motivate the stakeholders to enhance their confidence in the strength of IBs which is growing successfully as well as contributing to the economic growth of the country in the competitive environment. The new insights of the available research in the core area could also be generalized to other global financial markets.

3. Research Methodology

This research will use the same method applied by Jiménez, G. et al. (2012, 2014), Kashyap and Stein (1995), Kishan and Opiela (2000), and Idris (2015). The study will employ a static linear panel data model using the Ordinary least square (OLS), fixed effect model (FE), and random effect model (RE) to analyze the significance of bank lending in both Islamic and conventional commercial banking in Pakistan from 2009-2018. The bank-specific characteristic in this research is total financing as the dependent variable and bank size, liquidity, and capitalization as an independent variable. However, policy rates, Gross domestic production, and inflation represent the macroeconomic impact on bank lending. The table below explains the definition of each variable selected.

Table 3.1: Model Variable Descriptions

No.	Variable	Symbol	Definition
1	Total Bank lending/financing	Tblending	Bank's total financing in the bank's balance sheet
2	Inflation Rate	Inflation	Inflation is the rate of increase in the prices of goods and services.
3	Growth	Growth	Gross domestic product (GDP) denotes the aggregate value of all services and goods produced within a country in any given year.
4	Monetary policy Rate	PRate	The average six-month T-bill rate is widely used as a benchmark for banking operations, and the same is used in the analysis of this research.
5	Capitalization	Capital	Total Regulatory Capital ratio, as recommended and required by the State Bank of Pakistan.
6	Liquidity	Liquidity	Percentage of Liquid assets to total assets of each bank
7	Bank Total Assets	TAssets	Total Assets of the Bank

From the above literature in support of developing an economic model, this paper will analyze the available data using the below-mentioned model.

$$\text{Tblending}_{it} = \alpha + \beta_1 \Delta \text{Growth}_t + \beta_2 \Delta \text{Inflation}_t + \beta_3 \Delta \text{PRate} + \beta_4 \text{Capital}_{it} + \beta_5 \text{Liquidity}_{it} + \beta_6 TAssets_{it} + e_{it}$$

Where i=1,……., N and t=1,……., T and where the dependent variable *Tblending* represents the total financing measured as a *log* of the first-order difference of the bank loans *i* in time *t*. *liquidity* is a measurement of the percentage of liquid assets to total assets, and Capitalization (*Capital*) is the ratio of total regulatory capital ratio. The total assets (*TAssets*) of the bank, the two macroeconomic factors, the real growth rate (*Growth*) and inflation rate (*Inflation*), and finally, the policy rate (*PRate*) is the measure of the average short-term interest rate in time t, and the empirical analysis is performed using STATA version 14, the data analysis will focus on descriptive analysis, Pearson correlation analysis, and panel data techniques for regression analysis such as ordinary least squares regression model, fixed effect regression models and random effect model were considered after conforming to the Hausman specification (1978) test.

This study aims to examine the competitiveness and participation of Islamic commercial banks in MPT through bank credit channels as compared to conventional commercial banks in Pakistan. For this purpose, two samples of unbalanced data sets of twenty-four (24) commercial banks were divided into five (5) full fledge IBs and 19 CBs. The consecutive quarterly data for the ten-year duration of 2009-2018 consists of 721 observations for conventional and 167 observations for IBs analyzed to understand the impact of monetary policy changes through the BLC. The data can be divided into many sub-samples which may not lead us to our core objectives of assessing the role of Islamic bank credit in private sector development. This research selected five Islamic banks in Pakistan in sample one; the first group represents all full-fledged Islamic Banks, and the remaining conventional banks in the second group to investigate the results of this study. The comparison of two independent population means provides a way to test the hypothesis that the two groups differ from each other. The two samples can be different where they are independent samples that have a different number of elements, subject of analysis, and testing indicators of the values of the variable. Further from the literature, it is noted that a larger time dimension reduces the extent of the bias, and a more general result that includes explanatory variables follows naturally. Simulation studies reveal that the "Nickell Bias" becomes negligible for T > 30 (Bruno, 2005; Judson and Owen, 1999; Kiviet, 1995). The bank-specific variables data is collected from the bank's financial statements, and the macroeconomic data is collected from the websites of the State Bank of Pakistan and The World Bank.

The table below provides the details of all commercial banks in Pakistan selected in this study as shown in Table 3.2. Taking note of the asset size of all banks in the table, the five full-fledged Islamic bank's assets are equal to one of the top five commercial banks in Pakistan. This may create the problem of skewness of the data under analysis, and when analyzing the variables in the model with non-linear relationships, there are chances of producing errors. To overcome this situation, logarithmic transformation is a convenient way of transforming highly skewed variables into a more normalized dataset. This study will take the log of all variables used for both samples under investigation to improve the results through the normally distributed data.

Table 3.2: Details of Sample Banks

No	Name of Bank	Total Assets - Banks (PKR-Millions)	Number of Branches	Nature	Ownership
Islamic Commercial Banks					
1	Meezan Bank Ltd.	828,061.40	602	^ICB	Private
2	Dubai Islamic Bank Pak. Ltd.	214,023.30	200	^ICB	Private
3	Bank Islami Pakistan Limited	205,959.20	330	^ICB	Private
4	Albaraka Bank (Pakistan) Ltd	127,802.00	188	^ICB	Private
5	MCB Islamic Bank Limited	76,324.90	166	^ICB	Private
Conventional Commercial Banks					
6	Habib Bank Limited	2,764,971.90	1751	#CCB	Private
7	National Bank of Pakistan	2,657,794.80	1523	#CCB	Public
8	United Bank Limited	1,816,362.60	1381	#CCB	Private
9	MCB Bank Limited	1,487,103.30	1360	#CCB	Private
10	Allied Bank Limited	1,474,488.10	1254	#CCB	Private
11	Bank Al Habib	1,002,224.80	644	#CCB	Private
12	Bank Alfalah Limited	1,001,134.20	478	#CCB	Private
13	Askari Bank Limited	705,826.50	516	#CCB	Private
14	The Bank of Punjab	691,404.30	540	#CCB	Public
15	Habib Metropolitan Bank Ltd	663,769.60	320	#CCB	Private

16	Standard Chartered Bank Ltd.	556,246.30	89	#CCB	Private
17	Faysal Bank Limited	554,333.30	405	#CCB	Private
18	JS Bank Limited	417,835.70	323	#CCB	Private
19	Soneri Bank Limited	372,164.10	287	#CCB	Private
20	The Bank of Khyber	213,686.80	167	#CCB	Public
21	Summit Bank Limited	199,951.50	193	#CCB	Private
22	Sindh Bank Limited	195,025.60	300	#CCB	Public
23	Silkbank Limited	161,888.60	123	#CCB	Private
24	First Women Bank Limited	24,755.80	42	#CCB	Public

^ Islamic Commercial Bank # Conventional Commercial Bank

4. Results:

Table 4.1 describes the descriptive data analysis of bank variables used in the model; the data is measured by means, minimum and maximum, standard deviation, and a number of observations. The results in the table show the comparison between the CBs and IBs. CBs (table 4.1) with a major share in the banking sector have a higher average for both total financing and total assets. Contrary to this, IBs (table 4.2) are more liquid and capital reliant as compared to CBs; this confirms that IBs operations are not only secured by equity participation but also have less liquidity risk. In comparison, it is also evident that IBs have a higher standard deviation for managing liquidity which indicates that the IBs are at a disadvantage and may be missing the opportunity cost as compared to CBs.

Table 4.1: Descriptive Data - Conventional Banks of Pakistan

Variable	Mean	Std. Dev.	Min	Max	Observations
T blending	12.61 8	1.1080	9.6899	14.7089	721
lT Assets	12.766 4	1.1098	9.8266	14.8731	721
l Capital	2.6403	0.4942	-0.5798	4.0303	721
l Liquidity	2.2274	0.5382	0.8544	3.8258	721

Table 4.2: Descriptive Data - Islamic Banks

Variable	Mean	Std. Dev.	Min	Max	Observations
T blending ^	11.464	0.9734	9.1848	13.6300	167
lTAssets ^	11.621	0.9537	9.2211	13.7514	167
lCapital ^	2.7615	0.4621	2.3194	5.2063	167
lLiquidity ^	2.7538	0.5763	1.3762	4.3902	167

^ Islamic Commercial Banks

Table 4.3 below shows the correlation matrix of the variables in the analysis. The purpose of this table is to indicate the significance of the relationship between the dependent and independent variables. As shown in the table, the total financing and total assets of the two samples are significantly positively correlated (0.99. p< 0.1), which indicates that the primary force of motivation for bank lending is the banks' assets. CB's capital ratio is insignificantly correlated with total financing as compared to IBs where the capital is negatively correlated with total financing which may be due to the equity participation nature of the bank transactions as well as the high CAR requirements for high-risk lending. Further to measuring the impact of macroeconomic variables, i.e., growth, inflation, and monetary policy rates on total financing, it is observed that lending by IBs has a high negative correlation than the CBs. This justifies the opinion that there is a high demand for loans due to the non-availability of other sources of funds. CB's lending is stagnant and has a low correlation with macroeconomic factors. The correlation between the capital of banks with economic growth and policy rates is contrasting for the two samples; IBs capital is positively affected by the interest rates; however, the CBs have a negative impact which indicates that pass-through interest rate is better in IBs due to the profit and loss nature of transactions, CBs may have fixed-rate contracts which affect the profitability of the bank in the case when the interest rate changes.

Pearson correlation coefficients – conventional banking of two samples

Table 4.3: Correlation matrix-conventional Banks

Variable	T Blending	lTAssets	l Capital	i Liquidity	ΔlPRate	ΔlGrowth	ΔlInflatio n
TBlending	1						
lTAssets	0.999	1					
lCapital	0.038	0.020	1				
lLiquidity	-0.056	-0.047	0.046	1			
ΔlPRate	-0.321	-0.311	-0.179	0.280	1		
ΔlGrowth	0.226	0.218	0.206	0.178	-0.610	1	
ΔInflation	-0.272	-0.260	-0.227	0.283	0.803	-0.555	1

Table 4.4: Correlation matrix-Islamic Banks

Variable	TBlending ^	l TAssets ^	l Capital ^	l Liquidity ^	Δl PRate ^	Δl Growth ^	Δ Inflation ^
TBlending ^	1						
l TAssets ^	0.998	1					
l Capital ^	-0.639	-0.664	1				
l Liquidity ^	-0.156	-0.175	0.411	1			
Δl PRate ^	-0.449	-0.448	0.138	0.351	1		
Δl Growth ^	0.438	0.419	-0.153	-0.332	-0.627	1	
Δ Inflation ^	-0.346	-0.337	-0.014	0.061	0.789	-0.566	1

^ Islamic Commercial Bank

Table 4.4 shows the regression results of the model used for analyzing the conventional banking sample as specified above. Inflation is omitted from the analysis due to high collinearity. The test of multicollinearity of the model is quantified by VIF, which is 1.26, and the same is under the limits. The LM test result indicates that we reject the null hypothesis stating that the OLS model is appropriate and accept the alternate hypothesis of the appropriate RE model. The test result of the F-statistic of FE is highly significant which is less than 5% which indicates that the FE model is a good selection and the Hausman test below table suggests that the chi-square is significant with less than 10% p-value and suggests that we can accept the alternate hypothesis stating that FE model is appropriate.

The findings show the significance of bank lending in transmitting MPT variables selected in the model. There is a highly significant impact on policy rates, growth and bank capital, liquidity, and total assets in the BLC. The coefficients of liquidity and policy rates are negatively significant; however, the growth and capital are positively significant. Our results in table five concluded that the fixed effect model is more appropriate, and the Hausman test confirms the same. Results also indicate that there is no multicollinearity, heteroskedasticity, or autocorrelation.

Table 4.4: Results of analysis for Conventional Banks

Dependent Variable: TBlending	**Pooled OLS**	**Random Effects**	**Fixed Effects**
Growth	0.0015 1.3300	(0.0020)** 2.2200	(0.0022)*** 2.4700
Prate	(-.02335)*** -8.6800	(-.02257)*** -7.7400	(-.02031)*** -6.0000
TAssets	(.99199)*** 132.8200	(1.02713)*** 62.1100	(1.04694)*** 49.3800
Liquidity	(-.01608)*** -29.1200	(-.01251)*** -20.0700	(-.01239)*** -19.1800
Capital	(.000824)* 1.8100	(.00105)*** 2.3800	(.00110)*** 2.4500
Constant	0.3577 3.3800	0.3196 1.4000	0.6040 2.0900
Inflation	Omitted because of collinearity		
Breusch-Pagan LM test	1473.8300 (0.0000)***		
Hausman test		9.6200 (0.0867)*	
Observations	721	721	721
Multicollinearity (VIF)	1.26		
Hetero (c^2 – stat)			267.79 (0.0000)***
Serial Correlation (F-stat)		Pr	13.1870 0.0000

Notes: ***, **,* indicates significance at 1%, 5% and 10% respectively

Table 4.6 indicates the test result of bank lending by Islamic Banks; the test of multicollinearity of the model is quantified by VIF, which is 2.12, and the same is under the limits, leading us to conclude that the correlation among the variables of OLS of Table 6 is statistically acceptable. The LM test result indicates that we accept the null hypothesis stating that OLS model is appropriate and reject the alternate hypothesis of accepting the RE model. The test result of the F-statistic of the FE model is highly significant which is less than 5%, which indicates that the FE model is a good selection and the Hausman test in the above table suggests that the chi-square is highly significant with less than 5% p-value and suggest that we can accept the alternate hypothesis stating that FE model is appropriate. Table 4.5 represents the regression analysis for IBs. The results indicate the opposite results compared to CBs when testing the significance of policy rate and growth in bank lending; however, the inflation is omitted due to collinearity. Bank specific variables like total assets and liquidity are significant in bank lending. The analysis concluded that the random effect model is a more appropriate model when analyzing the IB; the same is justified by Breusch and Pagan Lagrangian multiplier test and invalid Hausman test results. The results are also the same to indicate that there is no multicollinearity, heteroskedasticity, or autocorrelation.

Table 4.6: Results of analysis for Islamic Banks

Dependent Variable: TBlending^	**Pooled OLS**	**Random Effects**	**Fixed Effects**
Growth^	-0.0048 -1.2800	-0.0048 -1.2800	-0.0027 -0.7000
Prate^	0.0045 0.3800	0.0045 0.3800	0.0050 0.3800
TAssets^	(.9639)*** 19.5500	(.9639)*** 19.5500	(.9956)*** 14.7200
Liquidity^	(.01266)*** -7.2100	(.01266)*** -7.2100	(.01460)*** -6.7100
Capital^	0.0018 0.7500	0.0018 0.7500	(.00815)*** 2.7000
Constant^	-0.2701 -0.4200	-0.2701 -0.4200	-0.6038 -0.7200
Inflation^	Omitted because of collinearity		

Breusch-Pagan LM test	0.0000 1.0000		
Hausman test		16.1000 (0.0066)***	
Observations	167	167	167
Multicollinearity (VIF)			2.12
Hetero (c^2 – stat)			101.66 (0.0000)***
Serial Correlation **(F-stat)**		pr	3.9770 (0.0001)***

Notes: ^ Islamic Bank, ***, **,* indicates significance at 1%, 5% and 10% respectively

5. CONCLUSION

From the above results and analysis, this paper confirms the active participation of conventional banks through bank lending channels in monetary policy transmission as proposed by Kashyap and Stein 1995; Kishan and Opiela, 2000; Gambacorta, 2005; Jiménez et al., 2012; Jiménez et al., 2014. In comparing the role of Islamic banks with conventional banks, it is evident that Islamic banks' lending is less influenced by macro-economic variables like policy rates and growth; this confirms the literature stating the limited availability of investment tools.

Our Results indicated that lending by conventional banks is inversely proportional to interest rate changes which are in line with our assessment that the banks are more inclined to fund government debt, and the policy rates during the last ten years were reduced to make cheaper government borrowings. Policy rates are not significant in financing by Islamic Banks, as there are limited investment opportunities due to the shariah requirements of asset-based transactions. However, the total financing by Islamic banks declines with interest rate decline.

The bank-specific variable of Islamic banks plays a significant role in bank lending. Bank total assets and liquidity are significant with bank lending in both types of banks, and the bank capital is negatively correlated. This indicates that the unavailability of risk-free treasury investments and open market facilities negatively impact the bank's finances. The profit and loss sharing nature of contracts as well as the difference in maturities of asset and liabilities sides put

extra pressure on bank capital and liquidity in the absence of risk-free investment by the State Bank of Pakistan. It is evident from the literature that the State Bank of Pakistan accommodated and facilitated IBs in providing level playing fields. However, the requirement of asset-backed transactions limited the issuance of secured investment opportunities which affects the growth of the Islamic banking industry.

There is limited scope for full-fledge IBs in Pakistan due to unavailable investment opportunities; however, banks with both conventional and Islamic operations enjoy more independence through diversifying their business needs. Pakistan is a dominant Muslim economy where banking was not preferred due to the charging of interest, and now when the Islamic banking industry fulfills the gaps and efficiently participates in transmitting the monetary policy through the BLC channel, it requires a separate set of instruments and monetary policy to explore the untapped economic growth and sustainability.

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