



Economic Research-Ekonomska Istraživanja

ISSN: 1331-677X (Print) 1848-9664 (Online) Journal homepage: <https://www.tandfonline.com/loi/rero20>

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To cite this article: Abdul Rafay & Saqib Farid (2019) Islamic banking system: a credit channel of monetary policy – evidence from an emerging economy, Economic Research-Ekonomska Istraživanja, 32:1, 742-754, DOI: [10.1080/1331677X.2019.1579662](https://doi.org/10.1080/1331677X.2019.1579662)

To link to this article: <https://doi.org/10.1080/1331677X.2019.1579662>



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Published online: 16 Apr 2019.



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Islamic banking system: a credit channel of monetary policy – evidence from an emerging economy

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ABSTRACT

Since its inception, Islamic banking in Pakistan has shown remarkable growth and development. Most recent statistics reveal that industry has captured around 13% of the total banking market in Pakistan. This outstanding growth of the industry highlights the crucial role of Islamic banks for monetary policy considerations. This study aimed to evaluate the role of Islamic banks in the monetary transmission process in Pakistan. The study examined the role of two most crucial balance sheet items of Islamic banks in the monetary transmission process: (1) Islamic deposits and (2) Islamic financing. The paper employed time series techniques such as the J.J. co-integration test, Vector Auto Regression, Variance Decomposition Analysis and Impulse Response Function to investigate the role of Islamic banks in the monetary transmission process. The study sample covered the time period 2007–2017. The results revealed the significant role of Islamic banks in transmitting monetary decisions to the real economy. Moreover, the evidence demonstrated the active bank lending channel of Islamic banking in Pakistan. The findings also corroborated the functional role of Islamic banks along with their conventional counterparts for effective formulation of monetary policy in Pakistan.

ARTICLE HISTORY

Received 15 February 2017
Accepted 10 September 2018

KEYWORDS

Islamic banks; Islamic deposits; Large Scale Manufacturing Index (LSMI); Monetary policy; IRF; VDC

JEL CLASSIFICATIONS

E52; G21; P40; Z12

1. Introduction

During the last four decades monetary policy has taken the spotlight in political and economic policy-making circles. Proponents of the significance of monetary policy have always asserted the decisive role of monetary policy in stabilising economic output and inflation. The existing economic literature on monetary policy covers the different realms of its impact on the real economy. The central focus of earlier studies was to capture the aggregate impact of monetary policy on the real economy. Monetary policy as a critical tool to stabilise the macro-economy was first recognised in the early study of Friedman and Schwartz (1963). Initially, the theoretical literature on monetary policy proposed the idea that the influence of monetary policy was

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immediately transferred to the real economy without any lag and delay (Barro & Gordon, 1983; Cukierman, 1992).

The mechanism of monetary policy transmission is an intricate phenomenon, because transmission to the macro-economy takes place through multiple channels. The channel categories identified in the literature include the interest rate channel, exchange rate channel, credit channel and asset price channel (Cecchetti, 1995; Taylor, 1995). The impact of each channel is determined by country-specific factors such as economic structure, statutory guidelines, market formation and financial configurations. The key element for an efficient monetary policy is identification of the relative significance of these channels related to a specific country.

The credit channel is recognised as a crucial channel to transfer monetary policy effects to the real economy. The credit channel is further divided into two sub-channels, the bank lending channel and balance sheet channel. The bank lending channel amplifies the substantial role of the banking industry in transmitting the effects of monetary policy to the real economy. It is considered that banks have a special role in shaping lending settlements in an economy; this increases the importance of banks for monetary policy effectiveness. The theory for the bank lending channel relies on the underlying assumption that tightening or loosening of monetary policy significantly impacts the supply of bank lending. An expansionary monetary policy results in an increase in bank reserves and deposits, which consequently results in an increase in the amount of credit available for customers. In the case of tightening monetary policy, the opposite effect takes place, resulting in a decreased amount of credit for customers. The impact of lending channel varies across markets, and the impact is more pronounced in smaller banks. Larger banks are more constant to the effects of monetary policy. Furthermore, when the average bank size increases, the market role of banks in monetary policy transmission reduces (Kashyap, Stein, & Wilcox, 1992, Kashyap, Stein, & Wilcox, 1996; Kashyap & Stein, 1995, Kashyap & Stein, 1997, Kashyap & Stein, 2000).

A stream of literature has revealed the role of Islamic banking in the monetary transmission process in the Islamic world (Aysan, Disli, & Ozturk, 2018; Majid & Hasin, 2014; Sukmana & Kassim, 2010; Yungucu & Saiti, 2016). However, there is a dearth of research in Pakistan on this topic. The earlier notable study by Agha, Ahmed, Mubarik, & Shah (2005) explained that along with the traditional exchange rate channel, the banking channel is also a significant source of monetary transmission in Pakistan. Similar research by Mohsin (2011) determined the impact of monetary policy on lending and deposit rates in Pakistan. Janjua, Rashid, & Ain (2014) found a negative relationship between monetary policy and bank loan supply. In addition, they showed that contracting monetary policy is adversely associated with smaller banks as compared with larger banks.

In view of the abovementioned research, this study presents us with an opportunity to evaluate the role of Islamic banks' credit channel in the monetary transmission process in Pakistan. This study will contribute to the existing literature on Islamic banking and monetary policy by investigating the role of Pakistan's rapidly expanding Islamic banking industry in the monetary transmission process. The study will add new insights to the little research that exists on the subject, and could also be generalised to other similar growing Islamic banking markets around the globe.

2. Literature review

2.1. Islamic banking in Pakistan

The inception of the Islamic banking system can be traced back to middle of the last century; however, the substantial emergence of Islamic banking started in the 1960s across the world. In recent times Islamic banks have appeared across the world in both Muslim and non-Muslim countries. The growth of Islamic banking institutions was swift, from one institution to 375 across more than 50 countries. In the case of countries such as Iran and Sudan, the whole banking system is built on the notion of Islamic finance. More recently, at the end 2017 the total assets of the Islamic banking and finance industry globally have expanded to USD 2 trillion, with Pakistan and Malaysia at the forefront of this new situation. However, after the emergence of Islamic banking, the challenge encountered by Islamic banks was that they were perceived as competitors of the strong and developed conventional banking sector, leading to a confluence of Islamic finance principles and contemporary finance. However, certain reservations about this confluence in terms of its contribution towards the objectives of Islamic moral economy still exist.

Since the formation of Pakistan, despite the intent, due to the absence of a concrete Islamic financial system the conventional banking paradigm was adopted by the State Bank of Pakistan (S.B.P.). Because of political instability and divergent government regimes, Islamic banking could not rise to the aspirations at the inception of the country. Because of the rapid emergence of Islamic banking globally in 2001, S.B.P. planned to promote the Islamic banking system parallel to the conventional banking system in the country. Meezan Bank Limited started its operations in 2002 as the country's first Islamic bank, and since then the industry has not looked back, with impressive progress over the years. S.B.P. actively participated in the development of the Islamic banking system through a specialised Islamic banking department to develop *Shariah*-compliant guidelines for products of Islamic banks.

The relative value of Islamic banking within the banking sector has increased impressively over the last decade, in which Islamic banks and Islamic windows of conventional banks have emerged as key players in the banking industry in Pakistan. Since 2004 the total assets of Islamic banks have increased from PKR 44 billion (2% of the total banking industry) to PKR 2,272 billion (12.4% of the total banking industry). During the same period, total numbers of branches of Islamic banks have increased from 48 to 2581 across the country, which highlights the impressive growth of the market over recent years. Furthermore, the Islamic banking industry increased the product range available to customers by adding a variety of *Shariah*-compliant products to the portfolio of banking products and services.

The expanding size of Islamic banking in Pakistan's banking sector motivated the idea of investigating the role of Islamic banks in the monetary transmission process. Earlier studies have only focused on the role of the overall banking sector in the monetary transmission process in the country (Agha et al., 2005; Hussain, 2009; Janjua, Rashid, & Ain, 2014; Mohsin, 2011). The identification of the role of Islamic banks in monetary transmission has significant policy implications in terms of regulatory perspectives. In addition, the research will also assist and add key insights about

Table 1. Overview of Islamic banking in Pakistan.

Year	Total assets	% of the total industry	Total deposits	% of the total industry	Total financing and investment	% of the total industry
Dec.04	44	1.5	30	1.3	30	1.3
Dec.05	71	2.0	50	1.8	48	1.7
Dec.06	119	2.8	84	2.6	73	2.3
Dec.07	206	4.0	147	3.8	138	3.5
Dec.08	276	4.9	202	4.8	187	4.4
Dec.09	366	5.6	283	5.9	226	4.9
Dec.10	477	6.7	390	7.2	338	6.2
Dec.11	641	7.8	521	8.4	475	7.4
Dec.12	837	8.6	706	9.7	626	8.1
Dec.13	1,014	9.6	868	10.4	709	8.5
Dec.14	1,259	10.4	934	11.6	693	7.8
Dec.15	1,610	11.4	1,375	13.2	1,077	9.2
Dec.16	1,853	11.6	1,573	13.3	1,311	10
Dec.17	2,272	12.4	1,885	14.5	1,732	11.3

Source: Different versions of S.B.P. Islamic Bulletin.

The figures of total assets, total deposits and total financing and investment are billions in PKR.

the behaviour and relationships between the Islamic banking sector and economic activity in Pakistan (Table 1).

2.2. Mechanism of monetary transmission

The early financial literature on monetary transmission mechanism gave genesis to two orthodox views that are termed as the money view and the lending/credit view. The money view explains monetary passage through a process where the federal bank increases reserves for the banking sector that results in additional liquidity and lower discount rates. The lower discount rate and enhanced liquidity causes increased spending in the economy; hence, the policy ends up influencing economic output. The credit view advocated by Bernanke and Blinder (1988) argues that contracting monetary policy reduces the reserves held by banks. The lower interest rate induces shrinking reserves in the economy that consequently results in lower retaining of deposits in the banks, and ultimately impacts the lending funds offered by the banks. A sizeable strand of literature on monetary policy has investigated the impact of monetary policy on banks' loan supply or loan demand (Adrian & Shin, 2009; Borio & Gambacorta, 2017; Kashyap & Stein, 1994; Morgan, 1998; Morris & Sellon Jr, 1995; Taketa & Udell, 2007). A major section of empirical studies on lending view used aggregate industry data to capture the effects of monetary policy through the lending channel. The most significant empirical research on the lending channel was conducted by Bernanke and Blinder (1992). The study deployed vector auto regression (V.A.R.) on aggregate data from the U.S. The variables selected for the study included consumer price index, Feds fund rate, unemployment rate and bank-specific variables such as bank loans, bank deposits and securities. The study showed that tightening of monetary policy by Fed had an adverse impact on bank loans and economic activity. A series of empirical studies in different parts of the world was carried out using the same methodology (Ashcraft, 2006; Bernanke & Mark, 1995; Domac & Giovanni, 1998; Dungey & Fry, 2010; Garretsen & Swank, 1998; Suzuki, 2001).

The second most prominent methodological approach to estimate the role of the lending channel in monetary policy is focused on estimating the ability of banks to supply loans in times of contractionary monetary policy irrespective of the demand levels for loans. Kashyap and Stein (1995) introduced the role of asset size of banks in enduring the effects of monetary policy. They suggested that small banks (in terms of assets) were more affected than large banks in time of contractionary monetary policy. Further, smaller banks were more unshielded to the risk of declining deposits during tightening monetary policy, which also affected their ability to supply loans. On the other hand, the larger banks were less affected. The balance sheets absorbed the effects of tightening monetary policy, and their ability to supply loan was more inelastic to monetary policy decisions. Kashyap and Stein (2000) added to earlier findings and found that banks with higher liquidity effectively safeguarded their loan portfolios from monetary policy shocks. However, banks with less liquid assets were exposed to more risks emanating from monetary policy shocks. Altunbaş, Fazylov, and Molyneux (2002) and Matousek and Sarantis (2009) categorised banks according to asset size and capital power to capture the impact of monetary shocks on the banks' balance sheets, and found that asset size and liquidity constituted the most crucial role in determining the response of a bank to monetary policy implications.

Gupta (2008) investigated the impact of monetary policy decisions on the real economy in Pakistan and India. He argued that contractionary monetary policy had an impact on bank lending that consequently affected economic activity in the economies. A series of studies attempted to investigate the effects of monetary transmission to the real economy in Pakistan (Agha et al., 2005; Hussain, 2009; Janjua, Rashid, & Ain, 2014; Shabbir, 2012). Broadly, this study borrows its basis from the studies of Bernanke and Blinder (1988, 1992), Gertler and Gilchrist (1993) and Suzuki (2001), and is in line with the abovementioned literature on the role of banks in monetary policy transmission mechanism. More specifically, this study is similarly in line with literature that documents the role of Islamic banks in monetary transmission to the real economy (Aysan, Disli, & Ozturk, 2018; Majid & Hasin, 2014; Sukmana & Kassim, 2010; Yungucu & Saiti, 2016).

3. Data and methodology

In order to investigate the contribution of Islamic banks in the monetary policy transmission mechanism in Pakistan, this study follows the approach of using aggregate industry data as employed by the notable earlier studies of Bernanke and Blinder (1988), Garretsen and Swank (1998) and Suzuki (2001). However, similar to Sukmana and Kassim (2010), the study uses dynamic time series techniques over the conventional cross-sectional approach. The study employs robust time series techniques such as the Johansen–Juselius (J.J.) co-integration test, Impulse Response Function (I.R.F.), Variance Decomposition Analysis (V.D.C.) and V.A.R. configurations to estimate the dynamic relationship between Islamic banking and monetary policy. The time series approach is particularly useful in evaluation when the underlying relationship is not stable over time. The variables incorporated in the model represent the real economy of Pakistan, monetary policy decisions by S.B.P. and probable channels of monetary

policy transmission. Our tests will also reveal the dynamic relationship between Islamic banking, monetary policy decisions and real economic activity in Pakistan.

In order to estimate the intended relationship following basic model is used:

$$\text{LSMI} = f(\text{ID}, \text{IFI}, \text{DR})$$

Where the Large-Scale Manufacturing Index (L.S.M.I.) is considered as proxy for the real economy (economic output), and Discount rate (D.R.) represents monetary policy decision announced by S.B.P. Islamic deposits (I.D.) and Islamic financing and investments (I.F.I.) are considered as major balance sheet items reflecting the role of Islamic banks in the monetary transmission process.

3.1. Data sources

The study deployed aggregate industry data for the data analysis. In terms of frequency, quarterly data were acquired for the time period of 2007–2017. The data for Islamic deposits and Islamic financing and investment were obtained from the statistical bulletin of Islamic banking by S.B.P. The data for discount rates were drawn from the monetary policy statements by S.B.P., and for L.S.M.I. data were extracted from the statistical bulletin of S.B.P.

3.2. Empirical model

As per standard practice in time series analysis, there are certain conventional tests that are applied to data before further analysis is undertaken. In order to establish stationarity for the variables, the Augmented Dickey–Fuller (A.D.F.) unit root test has been applied to the variables. Secondly, to evaluate the long-term equilibrium condition, the J.J. co-integration test is executed. Thirdly, V.A.R. analysis was performed. The conventional V.A.R. model setup for this study is:

$$Y_t = \alpha + \sum_{i=1}^k B_K Y_{t-K} + \epsilon_t \quad (1)$$

$$B = (1, 2, 3, \dots, K) \quad (2)$$

where Y_t is the $n \times 1$ vector of n variables under study and B_k is the $n \times n$ matrix.

After the V.A.R., further analysis was executed to detect the impact of monetary policy shocks on the real economy through the Islamic banking channel by deploying I.R.F. and V.D.C.

4. Results and findings

4.1. Unit root test

The principal assumption to be satisfied for time series analysis is to check the stationarity of data, where non-stationary data can be resulted in invalid and suspicious regression results. In this study, two most widely used approaches are used; A.D.F.

Table 2. Results of A.D.F. test and Philips–Peron test.

Variable	Augmented Dickey–Fuller test			Philips–Peron test		
	Trace statistic	Critical value	Order of integration	Trace statistic	Critical value	Order of integration
LSMI	−4.1840*	−4.44073	I(1)	−13.352*	−2.6211	I(1)
DR	−4.6584*	−3.6394	I(1)	−4.7238*	−2.6211	I(1)
ID	−6.1616*	−4.2050	I(1)	−6.2114*	−2.6211	I(1)
IF	−5.5306*	−4.1923	I(1)	−2.6211*	−2.6211	I(1)

The results are based on model with trend and intercept.

*Significant at 1% level.

unit root test and Phillips–Perron Test to establish the stationarity of variables in the model. The results are exhibited in Table 2 and show that the variables are integrated at first difference. The results were similar for both the unit root tests.

4.2. Co-integration test

Two standard tests for co-integration are the Eagle–Granger (E.G.) Test and Johansen–Juselius (J.J.) test. In this analysis the J.J. co-integration test is applied to check whether the variables under study link to form an equilibrium relationship in the long run. The advantage of the J.J. test is that it can test the presence of multiple co-integrating factors. The procedure of the test is a multivariate generalised form of the A.D.F. test. The primary objective of co-integration is to test the stationarity of residual of the model. In case the residual of the model is stationary then variables are assumed to have co-movement, which implies an equilibrium relationship in the long run. Optimal lag length is estimated for the co-integration test based on the standard indicators used in the literature, which include Final Prediction Error, Akaike Information Criterion, Schwarz Information Criterion and Hannan–Quinn information criterion. The optimal lag length (1) is decided for the J.J. co-integration test based on the abovementioned indicators.

The results of the J.J. co-integration test suggest that there is a long-term equilibrium relationship between the variables in our model. The trace statistic suggests that there are two co-integrating equations and at 5% significance level the value of trace statistic is greater than critical value.

The Maximum Eigenvalue criterion also indicates that there are two co-integrating equations and at 5% significance level the value of trace statistic is greater than the critical value. The normalised co-integrating equation for the model is given below, where L.S.M.I. is chosen as the first variable and the standard error for the equation is in parenthesis.

$$\text{LSMI} = 0.005598\text{ID} + 0.008014\text{IF} - 2.006310\text{DR} \\ (0.00766) (0.00864) (0.39776)$$

The above normalised equation shows that the results are in line with the theory. The results indicate a negative relationship between the L.S.M.I. and monetary policy discount rate. This implies that when the interest rate decreases, economic activity increases. On the contrary, when the interest increases, economic output decreases. These results can be justified by the theory, which suggests that in order to slow

down the economy the monetary policy rate could be increased. The above equation also reveals that Islamic financing and investment have a positive relationship with the L.S.M.I. This follows the underlying theoretical consideration that Islamic financing supports economic activity.

4.3. I.R.F. Analysis

I.R.F. is suitable to capture the impact of monetary policy shock on other objective variables in the model. It provides a time profile impact of the shock at a given period of time, and also evaluates the magnitude of each shock upon the relevant variable. In addition, it specifies the direction of the impact of policy shock that indicates the detection of a pattern. Moreover, another advantage of I.R.F. is that it allows comparison of the impact of policy shock on different variables. In this research the impact of monetary policy shock is evaluated using objective variables I.D., I.F.I. and L.S.M.I. The primary purpose is to estimate the role played by Islamic banks in monetary transmission to real economic activity. The mechanism deployed to capture the pattern is to estimate the impact of monetary policy shock on I.D. In order to determine this connection, the impact of varying levels of I.D. on I.F.I. is evaluated. Finally, the impact of I.F.I. on the real economy (L.S.M.I.) is analysed.

The evidence obtained from the I.R.F. analysis shows the active bank lending channel of Islamic banking in Pakistan. [Figure 1](#) tracks the nexus between D.R., I.D., I.F.I. and large-scale manufacturing. The results indicate a negative relationship between monetary policy and I.D. and are in line with the earlier studies of Sukmana and Kassim (2010), which depicted a similar situation in the Malaysian economy. Results reveal that when monetary policy shock enters the system, I.D. begin to decline due to an increase in the D.R. The decrease in I.D. in response to an increase in D.R. demonstrates displaced commercial risk. Displaced commercial risk is an eminent feature of a dual banking system. This implies that when the D.R. increases, customers are more attracted towards deposits in conventional banks due to higher profit rate as compared with Islamic banks. This also reveals that the primary objective of customers of Islamic banks is to maximise profit, similar to conventional banking customers. The results also reveal the prominent impact of interest rate on Islamic banks. The findings are similar to those of Ergeç and Arslan (2013), which showed that Islamic banks are significantly influenced by interest rates. The evidence adds to the debate of structural dubiety of existing Islamic banking in Pakistan.

In addition, the results also reveal a positive relationship between I.D. and I.F. The I.R.F. shows that when I.D. decreases, the response of I.F. is also negative. Consequently, the shock response trickles down to contract the economic activity. The results also show that the impact of shock in I.F. tends to be fully captured in economic output in the 4th quarter. The findings are consistent with earlier studies of the bank lending channel. The argument corroborates the significant impact of contracting monetary policy on economic output.

4.4. V.D.C. analysis

V.D.C. analysis helps to provide a convenient explanation of the fitted V.A.R. model. The analysis is helpful in explaining the total change in a variable in a given period

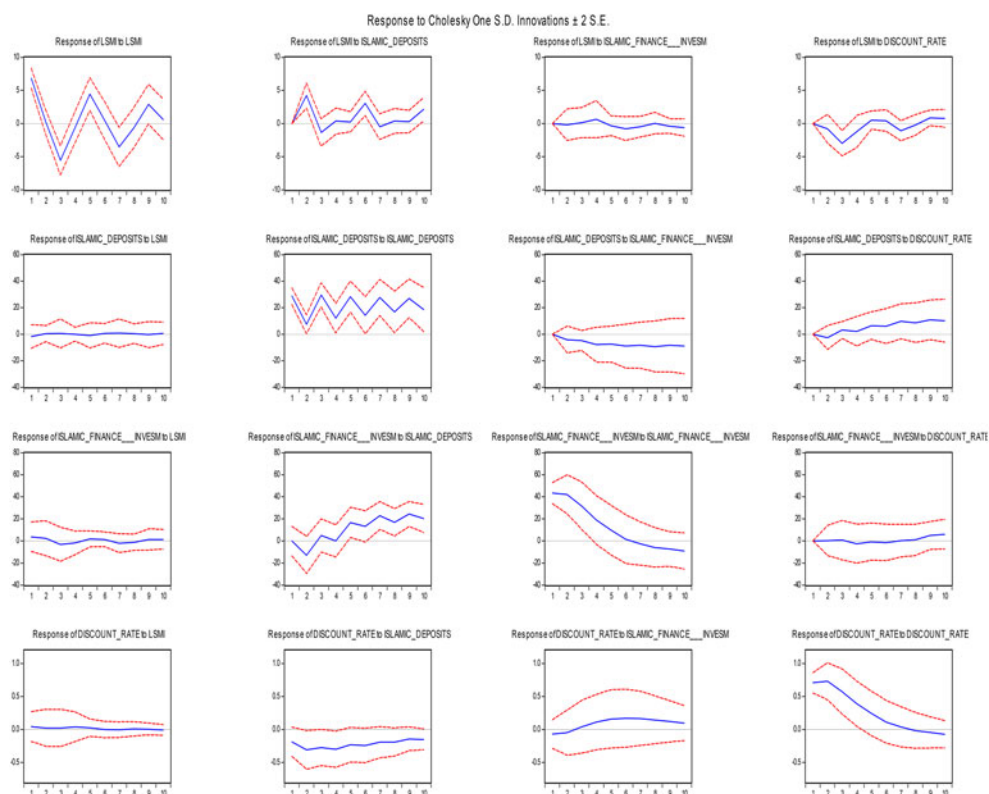


Figure 1. Impulse response functions.

time due to change in the same variable and contribution of other variables in the change. V.D.C. depicts the forecast error variance of an objective variable due to shocks in other variables and their relevant strength of impact. It also determines the level of innovation in objective variables due to shocks in policy variables. In this study V.D.C. is employed to assess the dynamic interaction between the objective variables L.S.M.I., I.D., I.F. and D.R.

The results of the V.D.C. analysis reinforce the results obtained in the previous section. The results show that I.D. explains 20% of forecast error variance in the L.S.M.I. in the long run. These findings augment the evidence obtained in the I.R.F. analysis that suggested a significant role of I.D. for economic output. The results also indicate the major role of I.D. in shaping up the value of I.F. Variance decomposition of I.F. shows that 42% of forecast error variance in I.F. is significantly explained by I.D. These results imply that I.D. are major source of Islamic financing and investment. The phenomenon can be theoretically supported by the fact that Islamic banks have limited access to funds due to particular limitations of *Shariah* compliance and thin trading.

Moreover, the most important finding revealed that the significant part of I.D. explains the forecast error variance in D.R. The results in [Table 3](#) show that in the long run I.D. explains 21% of change in D.R. The results demonstrate the crucial importance of Islamic deposits as a trigger variable in shaping monetary policy

Table 3. Variance decomposition analysis.

VDC of LSMI					
Period	S.E.	LSMI	ID	IF	DR
1	6.838440	100.0000	0.000000	0.000000	0.000000
2	8.076696	71.73603	27.19732	0.060395	1.006260
3	10.34197	72.56264	18.31481	0.051505	9.071043
4	10.45655	71.27265	18.02750	0.418075	10.28177
5	11.37323	75.37821	15.28335	0.441774	8.896658
6	11.81840	69.98372	20.78722	0.857442	8.371615
7	12.40786	71.63400	19.01308	0.951715	8.401203
8	12.43027	71.61364	19.03263	0.949048	8.404677
9	12.79392	72.63807	18.01111	0.991754	8.359069
10	13.01882	70.34091	20.07344	1.179516	8.406141
11	14.02993	70.66272	20.44355	1.489526	8.665131
VDC of ID					
Period	S.E.	LSMI	ID	IF	DR
1	28.73429	0.395444	99.60456	0.000000	0.000000
2	30.09506	0.383405	96.98920	1.899837	0.727563
3	42.59839	0.206937	96.63468	2.255320	0.903066
4	45.03477	0.185281	93.66367	5.108444	1.042609
5	54.10230	0.160787	92.22242	5.449342	2.167450
6	57.00373	0.154056	89.34120	7.422485	3.082257
7	64.64079	0.131621	87.83512	7.434940	4.598317
8	67.95788	0.121273	85.52690	8.596389	5.755440
9	74.36413	0.103679	84.54012	8.451352	6.904850
10	77.80613	0.099739	82.85282	9.067299	7.980138
11	79.88514	0.198764	82.80354	9.067291	7.990232
VDC of IF					
Period	S.E.	LSMI	ID	IF	DR
1	43.47019	0.722193	0.000566	99.27724	0.000000
2	61.99015	0.493335	4.353540	95.15139	0.001736
3	69.90214	0.589593	3.912568	95.48864	0.009196
4	72.52294	0.619403	3.635010	95.59984	0.145745
5	75.06678	0.629852	8.311377	90.91416	0.144616
6	76.24770	0.642261	11.02106	88.15808	0.178594
7	79.69552	0.655004	18.37617	80.80436	0.164470
8	81.67834	0.651559	21.72381	77.45401	0.170625
9	85.70231	0.611651	27.82960	71.08878	0.469970
10	88.73248	0.591252	31.14357	67.36472	0.900458
11	88.88321	0.712234	31.66234	67.76532	0.920241
VDC of DR					
Period	S.E.	LSMI	ID	IF	DR
1	0.734947	0.353090	6.391783	0.890177	92.36495
2	1.080489	0.212045	11.12035	0.617694	88.04991
3	1.253790	0.188667	12.99058	0.554347	86.26641
4	1.351531	0.250113	16.07105	1.155031	82.52381
5	1.401589	0.268097	17.66684	2.340372	79.72469
6	1.437377	0.254947	19.67164	3.624878	76.44854
7	1.460079	0.248187	20.77478	4.819600	74.15743
8	1.479632	0.246068	21.88325	5.649056	72.22162
9	1.491929	0.243633	22.41545	6.215905	71.12501
10	1.504325	0.242883	23.04278	6.532189	70.18215
11	1.574423	0.293214	23.32156	6.663421	70.22314

decisions. For brevity, the findings could be summed as the functional role of I.D. for monetary policy decisions. The findings hold key insights for policy-makers and regulators to consider for monetary policy decisions.

5. Conclusions

This study was conducted to evaluate the role of Islamic banks in channelling monetary policy decisions to the real economy in Pakistan. The study focused on

investigating the role of major balance sheet items (I.D. and I.F.) of Islamic banks in transmitting monetary policy decisions to the real economy. In almost all Muslim countries there is a dual banking system, and a similar case exists in Pakistan. In the recent past, S.B.P. has tried to establish Islamic banking as a parallel system to conventional banking. The expanding size of the Islamic banking sector in Pakistan signifies the crucial role of Islamic banks for monetary policy considerations along with their conventional counterparts.

The findings of the study show the significant role of Islamic banks in channelling monetary policy decisions to the real economy. The results imply that policy-makers in Pakistan should consider the functional role of Islamic banks for effective formulation, implementation and evaluation of monetary policy. It can also be inferred from the results that in addition to *Shariah* compliance, profit maximisation is also a major motive for the customers of Islamic banks, and the underlying behaviour is similar to the customers of their competing conventional counterparts. It can be inferred from the findings that the major driver of holding savings with banks is a higher rate of return, regardless of the ethnic preferences of banking customers. Further, the findings also show the existence of commercial risk in the banking market of Pakistan. The evidence is in line with the theory that states commercial risk tends to be more pronounced in dual banking systems. The results also explain that the major source of financing and investment for Islamic banks is significantly dependent on Islamic deposits. This increases the risk profile of Islamic banks as compared with their conventional competitors, which have more diversified channels available for fund raising.

Based on the findings, it can be recommended that Islamic banks consider a competing pricing strategy with conventional counterparts, as Islamic *Shariah*-compliant products are also significantly influenced by changes in monetary policy rate and are liable to similar risks as conventional banks. From the academic perspective, this study highlights the weak influence of the existing Islamic banking paradigm on the objectives of Islamic *Shariah*. Keeping in view the results of this study, it can be recommended that, in order to achieve desired objectives, the existing monetary paradigm and medium of exchange needs to be redesigned.

References

- Adrian, T., & Shin, H. S. (2009). Money, liquidity, and monetary policy. *American Economic Review*, 99(2), 600–605. doi:10.1257/aer.99.2.600
- Agha, A. I., Ahmed, N., Mubarik, Y. A., & Shah, H. (2005). Transmission mechanism of monetary policy in Pakistan. *SBP-Research Bulletin*, 1(1), 1–23.
- Altunbaş, Y., Fazylov, O., & Molyneux, P. (2002). Evidence on the bank lending channel in Europe. *Journal of Banking & Finance*, 26(11), 2093–2110. doi:10.1016/S0378-4266(02)00201-7
- Ashcraft, A. B. (2006). New evidence on the lending channel. *Journal of Money, Credit, and Banking*, 38(3), 751–775. doi:10.1353/mcb.2006.0037
- Aysan, A. F., Disli, M., & Ozturk, H. (2018). Bank lending channel in a dual banking system: Why are Islamic banks so responsive? *The World Economy*, 41(3), 674–698. doi:10.1111/twec.12507
- Barro, R., & Gordon, D. (1983). Rules, discretion and reputation in a model monetary policy. *Journal of Monetary Economics*, 12(1), 101–122. doi:10.1016/0304-3932(83)90051-X

- Bernanke, B. S., & Blinder, A. S. (1988). *Credit, money and aggregate demand*. (Working Paper No. 2534). Washington, DC: US National Bureau of Economic Research.
- Bernanke, B. S., & Blinder, A. S. (1992). The federal funds rate and the channels of monetary transmission. *American Economic Review*, 82(4), 901–921.
- Bernanke, B. S., & Mark, G. (1995). Inside the black box: The credit channel of monetary policy transmission. *Journal of Economic Perspectives*, 9(4), 27–48.
- Borio, C., & Gambacorta, L. (2017). Monetary policy and bank lending in a low interest rate environment: Diminishing effectiveness? *Journal of Macroeconomics*, 54(B), 217–231. doi:10.1016/j.jmacro.2017.02.005
- Cecchetti, S. G. (1995). Distinguishing theories of the monetary transmission mechanism. *Federal Reserve Bank of St. Louis Review*, 77 (May-June), 83–97. doi:10.20955/r.77.83-97
- Cukierman, A. (1992). *Central bank strategy, credibility, and independence*. Cambridge: MIT Press.
- Domac, I., & Giovanni, F. (1998). *The real impact of financial shocks: evidence from Korea* (Working Paper No. 2010). Washington: World Bank Policy Research.
- Dungey, M., & Fry, R. (2010). *Fiscal and monetary policy in Australia: An SVAR model* (Working Paper). Hobart: University of Tasmania.
- Ergeç, E. H., & Arslan, B. G. (2013). Impact of interest rates on Islamic and conventional banks: The case of Turkey. *Applied Economics*, 45(17), 2381–2388. doi:10.1080/00036846.2012.665598
- Friedman, M., & Schwartz, A. J. (1963). *A monetary history of the United States, 1867–1960*. Princeton, NJ: Princeton University Press.
- Garretsen, H., & Swank, J. (1998). The transmission of interest rate changes and the role of bank balance sheets: A VAR analysis for The Netherlands. *Journal of Macroeconomics*, 20(2), 325–339. doi:10.1016/S0164-0704(98)00060-3
- Gertler, M., & Gilchrist, S. (1993). The role of credit market imperfections in the monetary transmission mechanism: Arguments and evidence. *Scandinavian Journal of Economics*, 95(1), 43–65. doi:10.2307/3440134
- Gupta, A. (2008). *Comparing Bank Lending Channel in India and Pakistan* (MRPA Paper, 9281). Vancouver: University of British Columbia.
- Hussain, K. (2009). *Monetary policy channels of Pakistan and their impact on real GDP and inflation* (Working paper no. 41). Cambridge: Center for International Development at Harvard University.
- Janjua, P. Z., Rashid, A., & Ain, U.,Q. (2014). Impact of monetary policy on bank' balance sheet in Pakistan. *International Journal of Economics and Finance*, 6(11), 187–196.
- Kashyap, A. K., Stein, J. C., & Wilcox, D. W. (1992). *Monetary policy and credit conditions: Evidence from the composition of external finance* (Working Paper No. w4015). Washington, DC: US National Bureau of Economic Research.
- Kashyap, A. K., & Stein, J. C. (1994). Monetary policy and bank lending. In *Monetary policy* (pp. 221–261). Chicago, IL: The University of Chicago Press.
- Kashyap, A. K., & Stein, J. C. (1995, June). The impact of monetary policy on bank balance sheets. *Carnegie-Rochester Conference Series on Public Policy*, 42, 151–195. North-Holland. doi:10.1016/0167-2231(95)00032-U
- Kashyap, A. K., Stein, J. C., & Wilcox, D. W. (1996). Monetary policy and credit conditions: Evidence from the composition of external finance: Reply. *The American Economic Review*, 86(1), 310–314.
- Kashyap, A. K., & Stein, J. C. (1997). The role of banks in monetary policy: A survey with implications for the European Monetary Union. *Federal Reserve Bank of Chicago Economic Perspectives*, 21, 2–18.
- Kashyap, A. K., & Stein, J. C. (2000). What do a million observations on banks say about the transmission of monetary policy? *American Economic Review*, 90(3), 407–428. doi:10.1257/aer.90.3.407
- Majid, M. S. A., & Hasin, Z. (2014). Islamic banks and monetary transmission mechanism in Malaysia. *Journal of Economic Cooperation & Development*, 35(2), 137–166.

- Mohsin, H. M. (2011). The impact of monetary policy on lending and deposit rates in Pakistan: Panel data analysis. *The Lahore Journal of Economics*, 16(SE), 199–213.
- Morgan, D. P. (1998). The credit effects of monetary policy: Evidence using loan commitments. *Journal of Money, Credit and Banking*, 30(1), 102–118. doi:10.2307/2601270
- Morris, C. S., & Sellon, G. H. Jr, (1995). Bank lending and monetary policy: Evidence on a credit channel. *Economic Review-Federal Reserve Bank of Kansas City*, 80(2), 59.
- Matousek, R., & Sarantis, N. (2009). The bank lending channel and monetary transmission in Central and Eastern European countries. *Journal of Comparative Economics*, 37(2), 321–334. doi:10.1016/j.jce.2008.09.008
- Shabbir, S. (2012). Balance sheet channel of monetary transmission in Pakistan: An empirical investigation. *SBP Research Bulletin*, 8(1), 1–12.
- Sukmana, R., & Kassim, S. H. (2010). Roles of the Islamic banks in the monetary transmission process in Malaysia. *International Journal of Islamic and Middle Eastern Finance and Management*, 3(1), 7–19. doi:10.1108/17538391011033834
- Suzuki, T. (2001). *Is the lending channel of monetary policy important in Australia?* (Working Papers in Economics and Econometrics No. 400). Canberra: The Australian National University.
- Taketa, K., & Udell, G. F. (2007). Lending channels and financial shocks: The case of small and medium-sized enterprise trade credit and the Japanese banking crisis. *Monetary and Economic Studies*, 25(2), 1–44.
- Taylor, J. B. (1995). Monetary policy implications of greater fiscal discipline. *1995 Symposium Proceedings Budget deficits and debt: issues and options*, Cheyenne, Wyoming, 151–170.
- Yungucu, B., & Saiti, B. (2016). The effects of monetary policy on the Islamic financial services industry. *Qualitative Research in Financial Markets*, 8(3), 218–228. doi:10.1108/QRFM-02-2016-0006