Research Article / Araştırma Makalesi

https://academicopinion.org/

State Bank of Pakistan Policies and The Lending Behavior of Commercial Banks: A Case of Pakistan from 1972-2021

Fizza MALIK[1]

[1] Lahore School Of Economics, Lahor- Punjab /Pakistan, fizza.malik89@gmail.com

ABSTRACT

This paper aims to investigate the impact of various monetary policy tools used by the State Bank of Pakistan on the lending behaviour of commercial banks by applying a series of econometric tests on the data. A time series data is collected from 1972 to 2021 to see the impact. The approach that is used to estimate the econometric model is ARDL (Auto Regressive Distributed Lag Model). The paper sheds light on the policies under taken by the state bank in the monetary stance that has either a direct or an indirect effect on the volume of loan growth. It is hence found that in times of expansionary monetary policy the level of private credit given increases. The main finding of this study is that growth in broad money means more credit and vice versa. More money means more credit. The research concludes that the instruments of control are effective only in the long run. The expansionary monetary policy has resulted in the opposite direction is supported by literature. Moreover, the growth is broad money has a positive and significant result in the model. The key implication of the findings is that credit to the private sector is an effective channel for monetary policy transmission in Pakistan. It is recommended therefore that monetary authorities in developing countries should consider credit as a major channel for implementing monetary policies. It is hence recommended that monetary authorities in developing countries should credit as a major channel for implementing policies in the monetary framework.

Keywords: *Broad Money, Loan Growth, Monetary Policy.*

ARTICLE INFOS

Article History

Received: October 3, 2022

Accepted: December 14, 2022

Article Type

Research Article

1. Introduction

The financial system of all economies consists of institutional arrangements designed for transformation investment savings. These institutional arrangements are determined by the laws governing the design of financial products and the regulation of banks, and more importantly, banking practices. There is considerable debate about the exact role of monetary policy actions on the economy that banks play. At the heart of this debate is the question of whether bank lending plays a special role in the currency transmission mechanism. Where dedicated credit or credit channels exist, changes in a bank's willingness and ability to lend can affect total activity. Furthermore, the ongoing changes in the role of banks in financial markets could affect this credit channel and change the currency transmission mechanism.

The theory of Tobin (1965) provided a framework that instigated a debate on whether the rate of monetary growth have any long-run affect on interest rates, capital intensity, output and in the end impacts the overall welfare of an economy. He establsihed in his famous “A Dynamic Aggregaative Model” that there is a significatant impact of monetary factors on capital intesnsity of any developing economy. A dynamic Aggregate model presented by Tobin (and Solow and Trevor Swan) turned to growth theory was represented by Roy Harrod (1939, 1948, 1952) and Evsey Domar (1946, 1957). The models of Harrod and Domar were widely interpreted as assuming fixed factor proportions and savings propensities, resulting in an unstable, “knife-edge” equilibrium. While Nicholas Kaldor (1956) proposed to eliminate this instability by making the propensity to save endogenous, depending on the distribution of income between wages and profits, Tobin (1960) found the implications of this device untenable.

The” bank lending channel” hypothesis predicate the existence of tte channel of monetary policy transmission through bank credit. The effectiveness of this mechanism can vary between banks with different degrees of access to non-deposit funding. According to Kashyap and Stein (1995), the lending channel holds more importance for smaller banks who rely on demand deposits and common equity or the sake of their operations. Smaller banks are unable to hedge themselves aganst any shocks resulting from tightened monetary policy by the Central Bank of any economy (Kashyap and Stein, 2000, Kashyap et al., 2002, Stein, 1998); poorly capitalized banks have less access to markets for uninsured funding, so their lending is more dependent on monetary policy shocks (Peek and Rosengren, 1995, Kishan and Opiela, 2000, Van den Heuvel, 2001).

Monetary policy pertains to the use of various instruments by the central bank in order to maintain stability in the financial markets and in the price levels. Therefore, in any particular economy its central bank holds a prime importance with regards to the

Atıf/Cite as: Malik, F. (2022). State Bank of Pakistan Policies and The Lending Behavior of Commercial Banks: A Case of Pakistan from 1972-2021. *Journal of Academic Opinion*, 2(2): 54-66.

intervention it makes for the purpose of achieving an overall economic well-being in the country.

Ever since the existence of Pakistan, the State Bank holds a central position in facilitating the financial functions within an economy. The following are the core role and functions of the state bank, namely

- Acting as a bank of the government
- Guardian and supervisor of the financial sector
- A bank of the commercial banks
- Manages the foreign exchange reserves and exchange rate policies (deciding on an exchange rate regime)
- Lender of the last resort

But despite all these functions that this bank carries out, the core or the foremost crucial role that it takes is as the monetary policy manager. Since this monetary policy converges to some of the main macro-economic variables. A tight policy definitely reduces the supply of funds for the banks, which will in return reduce the spending by band dependent borrowers. This link is explained as the lending channel by Bernanke and Gertler, 1995.

Objective(s) of SBP's monetary policy is to strike a delicate balance on inflation containment and maintaining/supporting economic growth. Change in the monetary policy stance is communicated through adjustment in the policy rate – the overnight rate at which SBP provides collateralized cash to bank(s). If required, changes in the Cash Reserve Requirement (CRR) and Statutory Liquid Reserve requirement (SLR) are also made.

1.1. Study Objectives

The main objective of this study is to examine the money-credit relationship and to establish the cruciality of the existence of the two for the policy makers to carry out appropriate monetary policies. There is limited literature available that sheds light on this relationship between SBP and other prominent commercial banks. Hence, this study aims at providing evidence that whether this monetary mechanism channels the right amount of credit within the economy or not. The study takes into account the sole purpose of describing this link as a short term or a long-term phenomenon.

The study examines whether bank lending is constrained by monetary policy in Pakistan or not.

The objective of this study is:

1. To study the impact of various monetary policy tools/ instruments used by the State Bank of Pakistan on loan growth or lending pattern of the commercial banks
2. The extent to which these instruments have a significant effect on the credit lending by these commercial banks.

1.2. Research Questions

The following questions will be addressed towards the end of this study:

1. Does the momentary mechanism exist in Pakistan or not?
2. Which monetary policy tools are more effective if private credit needs to be increased or decreased?
3. Is this monetary policy channel rather a short-term concept or a long-term concept?

1.3. Hypothesis Testing

The following hypotheses were generated from the previous studies conducted.

The first hypothesis establishes that as the Central bank takes the expansionary monetary policy stance the loan volume through the banking channel grows. (Modugu, K.P. & Dempere, J. 2022)

H_{01}= Expansionary Monetary policy has a positive relationship with loan volume given in the form of private credit.

H_{11}= Expansionary Monetary policy does not have a positive relationship with loan volume given in the form of private credit.

Central banks make public the results of open market operations (OMOs), which they use to adjust the liquidity available to the financial system to maintain the short-term borrowing rate in the range compatible with achieving their monetary policy objectives. (Bulusu, 2020)

H_{02}= Open Market Operations (Absorption) has a negative relationship with private credit.

H_{12}= Open Market Operations (Absorption) does not have a negative relationship with private credit.

The study explored by Nadeem et.al (2016) related to Pakistan established that there is a significant negative relationship between policy rate and private credit. And this was indicated both in the short and the long run.

H_{03}= Policy rate has a negative relationship with private credit.

H_{13}=Policy rate does not have a negative relationship with private credit.

In a study conducted by Imran, et.al (2013), there has been a positive relation explained between increased deposit base and amount of private credit been lent. The study concludes that in reality this equation holds true if the economy is held constant in the long run, cetris paribus.

H_{04}= Growth in Broad Money has a positive relationship with private credit

H_{14}= Growth in Broad Money does not have a positive relationship with Private credit.

1.3. Research Gap

The findings of this study purely confine itself to the domain of Pakistan. In all the previous studies conducted the independent variables under discussion are not tested together in one model, hence this study extends the literature in testing these variables under one framework.

The literature has supported that the monetary transmission mechanism is a long run phenomenon, given the monetary policy stance being the prime independent variable. No study tested the presence of the contractionary and/or expansionary monetary policy in the model to test its significance against the lending behaviour of banks and so indirectly affecting the growth in money supply.

This paper therefore discusses the role of monetary factors in determining the degree to which capital intensity moves up or/down.

2. Literature Review

The linkage between the two variables of credit and money are highly emphasized whether it be a developed or a developing economy. A key question in the monetary transmission literature is whether the traditional debate of the "money view" of this transmission mechanism overlooks the actual potent credit effects.

In the either direction of the monetary policy, the spending in the economy is adversely affected. This this effect can be widely understood by the theories of Bernake and Binder (1988,1995). The studies looked upon the lending and the balance sheet channel.

In a study conducted on the economy of Nigeria (Kalu, 2016), it is revealed that credit to the private sector is an effective channel for monetary policy transmission. The paper investigates the relationship through a structural break phenomenon, where in the end it is concluded that this credit money link is a long-run

relationship. Similarly, Rasheed (2011), also examines the relationship between money and real variables in Pakistan from 1972 to 2008 using Johansen cointegration tests and Granger causality tests. He finds among others, that private sector credit causes reserve expansion. Bellalah et al. (2013) find, amongst others, evidence of long run relationship between domestic credit to private sector and money supply from 1980 to 2009, using Johansen and Juselius's framework.

In the same way, Nwakanma et al (2014) evaluate the nature of long-run relationship existing between private sector credit and Nigeria economy growth as well as the directions of prevailing causality between them for the period 1981 to 2011, using the Autoregressive Distributed Lag Bound and Granger Causality techniques.

In the study conducted by Aban (2013), the author states that the liquidity position in the economy is affected by the policy rate. It later affects the market interest rates and the lending and the deposit rates. A high policy rate induces a low demand for investment and vice versa. This idea is also supported by Bernanke & Blinder (1992), that the federal funds rate or the policy rate as we ma state it, records shocks to the supply of bank reserves. And by changes incurred trough this, the monetary mechanism works in the direction of bank credit that is offered to the private sector. Matemilola et al (2015) also hold the view in their study that federal rate (policy rate) has an impact on the lending rates and hence on the lending volume of the commercial banks. They say that the commercial banks in South Africa adjust their lending rates downward as a result of changes in the policy rates but they are rigid in adjusting the lending rates upwards. This implies that the banks respond to the changes in the policy rates. Lending interest rate is another variable that has been found as positive statistically insignificant relationship with commercial bank lending. Thus, the researcher fails to reject the null hypothesis that states there is no relationship between lending interest rate and commercial bank lending (Malede, 2014, pg 111).

Kashyap et al (1993) in their study state that a change in the monetary policy changes the mix of banks external financing which in turn affects the loan supply. The study suggests that a contractionary policy reduces the loan supply and vice versa. They hold the view that if we want to see the monetary policy affecting the economy through lending channel mechanism, two conditions must hold true. One that the loans and securities are treated as imperfect substituteson the asset side of the balance sheet of the banks, and second that loans and finances from non bank sources are also imperfect substitutes. Only then the real affect of any contraction and expansion could be observed on the loan supply or lendng volume by the banks. In another study conducted by Tabak et al (2010) the same concept is supported. They also state that "during periods of loosening/tightening monetary policy, banks increase/decrease their loans." They also write that low interest rates lead to an increase in credit risk exposure, supporting the existence of risk-taking channel. Their main emphasis is on the point that small banks get adversely affected by monetary policy changes and hence, loan supply generated by small banks changes by a much greater extent as compared to the large banks. A similar idea is supported by Gambacorta, L. (2005), where he concludes that smaller banks are greatly hit by any monetary policy shocks.

The relationship between money growth and bank lending is studied by Kahn. G (1991) in his study "Does more money means more bank loans?" He says that typically bank credit increases whenever the money supply increases, hence a positive relationship is observed between the two. He argues that indeed in some situations this theory applies in reality but recdently the tendency to for increased money supply to stimulate bank loans may have diminished.

Main part of the literature is found for US and European bank lending in response to either monetary shock, hence this study takes into account the bank lending behavior of an underdeveloped economy. Also, the monetary stance of Pakistan has always been a debate, hence this study aims to investigate the impact of monetary policy tools have on the deposit base and later on the lending funds available to the deficit parties.

3. Methodology

This study estimates the impact of state bank monetary policy instruments on the lending behaviour of the banks in the form of private credit extended to the private sector. A time series data is collected from 1972-2021. Using ARDL approach this data is then analysed. All the variables are taken in log form except for the monetary policy variable since it is treated as a dummy variable.

Pure monetary variables were initially chosen for example:

1. Credit Control (Margin Requirements)
2. Open Market Operation (amount absorbed)
3. Open Market Operations (amount Injected)
4. Bank or the policy rate
5. Private credit by the banks (%age of GDP)
6. Growth in broad money (money supply expansion)
7. Broad money to total reserves (treated as a proxy for the reserve requirements)

Only authentic and registered sources were used to collect data on such variables. These include the WDI, SBP official website, SBP Annual Reports, Economic Survey of Pakistan (annual issues) from 1972-2021. However, as the work proceeded not all of the above-mentioned variables were taken, instead some of them were eliminated to reach to a comprehensive and a more relevant study.

A dummy variable is also used in the form of monetary policy. After studying each year's data on the monetary policy held in Pakistan by the SBP, a value of 1 is assigned to the variable, 0 otherwise. It is noted that this shares a positive relationship with the dependent variable.

The dependent variable is taken in the form of private credit given by banks (percentage of GDP). The data was collected from the WDI website.

Historical data on open market operations (absorption) amount is collected in order to look at the level of liquidity actually absorbed by the SBP from the market. It holds a negative relationship with the dependent variable. The greater the absorption, the lesser the credit extended to the private credit.

Next, the policy/discount rate is also used as a variable. It is the rate at which the SBP makes lending to the commercial banks and this rate therefore has a direct impact on the lending behaviour of the banks. It has a negative relationship with the dependent variable. The greater the policy rate, the greater will be the lending rate. Hence a higher lending rate stimulates less demand for credit since now it implies a high cost of borrowing.

Growth in broad money is also a part of the econometric model used. It demonstrates the extent to which the private credit is extended to support this growth, hence sharing a positive relationship.

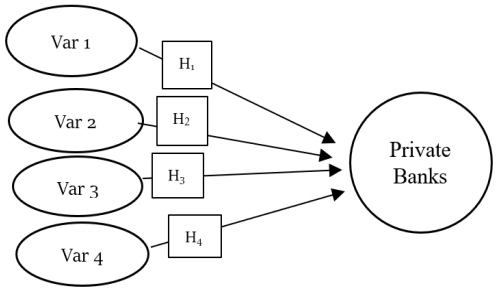
3.1 Variables

Dependent variable**:** Private Credit by banks (taken as a %age of GDP)

Independent Variables:

1. MP (1= expansionary monetary policy; 0=otherwise)
2. OMO (amount absorbed)
3. Policy rate
4. Growth in broad money

3.2 Theoretical Framework



4. Findings

For over viewing the temporal properties of data, the descriptive statistics is presented in Table 1 below. The estimated results show that private credit, monetary policy and policy rate are negatively skewed while OMOs (absorption) and growth in broad money are positively skewed. The results show that all the variables have positive kurtosis. The estimated kurtosis (measures the degree of sharpness) and skewness (measures the degree of symmetry) are insignificant and different from zero so we reject the null hypothesis of no normality. The values of Jarque-Bera show that all the variables of the model have zero mean and finite covariance; this confirms that the selected data sets are normally distributed.

Table 1
Descriptive Stats

	LPC	MP	LOMOA	LOG_PR	GBM
Mean	3.086499	0.613636	5.36156	2.409621	16.02551
Medium	3.093161	1.000000	5.372613	2.408242	16.46711
Maximum	3.337317	1.000000	9.101106	2.995732	45.53201
Minimum	2.727853	0.000000	2.475698	1.791759	1.230633
Std.Dev	0.154362	0.492545	1.426654	0.29112	7.507600
Skewness	-0.578179	-0.466760	0.200003	-0.30149	1.311611
Kurtosis	2.960646	1.217865	2.937011	3.080597	7.264232
Jarque-Bera	2.454309	7.420353	0.300616	0.678489	45.95244
Probability	0.293125	0.024473	0.860443	0.712308	0.000000
Sum	135.8059	27.000000	235.9086	106.0233	705.1224
Sum Std. Dev	1.024588	10.431820	87.51963	3.644299	2423.654
Observations	44	44	44	44	44

Table 2 below reports the correlation matrix of variables; the results reveal private credit has a negative and significant relationship with open market operations in a form of monetary policy tool. This relationship is also significant. However, private credit shares a positive yet significant relationship policy rate, and broad money growth. The correlation amongst other explanatory variables is almost insignificant or non-existence. Correlation of OMO with policy rate is less than 0.05. Similarly, the correlation coefficient between policy rate and growth in broad money is again insignificant, implying that the variables chosen are not correlated. Also, no correlation exists between open market operations and policy rate. The overall results show that all the variables have significant relationship with the dependent variable. The results reveal that there is no problem of multicollinearity amongst the explanatory variables.

Table 2
Pair wise Correlation

Correlation t-statistic Probability	**LPC**	**LOMOA**	**LOG_PR**	**GBM**	**MP**
LPC	1 - -				
LOMOA	-0.096481 -0.628198 0.5333	1 - -			
LOG_PR	0.254355 1.704464 0.0957	0.000377 0.002445 0.998100	1 - -		
GBM	0.028597 0.185403 0.8538	0.137904 0.902343 0.372000	0.000268 0.001738 0.9986	1 - -	
MP	-0.184272 -1.215029 0.2311	-0.098337 -0.640402 0.524000	-0.05415 -0.35146 0.727	-0.12334 -0.80549 0.4251	1 - -

Table 3 below demonstrates the unit root test which is applied in order to check the level of stationarity. Since this study is a timeseries research, therefore the unit root test will check the stationarity of the variables under discussion. The results below show that all the variables are stationary at 1st difference or we can say that all the variables are integrated of order 1. The probabilities of all the variables are also less than 0.05 which shows that they are significant, so the null hypothesis , generally defined as a presence of unit root is hence rejected.

Table 3
Unit Root Test
Augmented Dickey Fuller Test (ADF Test)

Variables	Level of Significance 1%	t-statistic	Probability	Order of Integration
Private Credit	-3.596616	-4.347618	0.0013	1
Monetary Policy	-3.600987	-7.622558	0	1
Policy Rate	-3.596616	-4.347618	0.0013	1
Growth in Broad Money	-3.600987	-8.318101	0	1
OMO (A)	-3.605593	-6.404811	0	1

For investigating the co-integration amongst the private credit, open market operations, policy rate, monetary policy and growth in broad money ARDL bound testing approach is use. The results of ARDL bound testing approach are presented in table 4 below. The calculated F stats is greater than the upper bound at 1 percent (6.090285>5.06). So, the null hypothesis of no integration is rejected which confirms co integration among the variables of the model. The calculate F stats have verified the existence of co-integration among the variables of the model.

ARDL bounds testing approach is a cointegration method developed by Pesaran et al. (2001) to test presence of the long run relationship between the variables. Being a pioneer in Bound Testing Approach he established that if the Wald Statistic fall above the upper critical bound then it can be concluded tat there exist Co-integration in the model. It also directs the study towards the idea of this relationship being more relevant in the long -run.

Table 4
ARDL Bound Testing Approach

Critical Value (F-Statistics 6.090285)	Lower Bound	Upper Bound
97.50%	3.25	4.49
99%	3.74	5.06

Now the long run relationship is explained in the table below. The dependent variable is taken as the log form of private credit given by banks (%age of GDP) while the other regressors are stated below in table 5.

Table 5
Estimated Long Run Coefficients using ARDL Approach
ARDL(1, 0, 2, 0, 2)
Dependent Variable: Private Credit
Time Period: 1972-2021

Regressor	Coefficients	Standard Error	t-Stats	Probability
MP	-0.123453	0.097076	-1.271711	0.2126
LOMOA	-0.250827	0.094177	-2.663358	0.0120
LOG_PR	0.354281	0.188500	1.879472	0.0693
GBM	0.037685	0.017377	2.168694	0.0376
C	2.981124	0.529887	5.625965	0.0000

The coefficients stated above shows the change which will occur due to a change of say 1 unit in the independent variables given above. Now let's study them one by one to completely understand the phenomenon. Research establishes that when the government is practicing an expansionary monetary policy the private credit will change by 0.123 percent, but the probability of this independent variable is not less than 0.05 which makes it insignificant in the model, hence H01 is rejected. Similarly, if the government of Pakistan carries out open market operations (absorption of money from the economy by selling T-bills); it implies that if it changes

(increase) by one unit, the private credit extended by the commercial banks will fall by 0.25%. And the probability in this case is less than 0.05 which is significant, hence Ho2 is accepted and H12 is rejected similarly, a one-unit change in the policy rate will increase the bank credit by 0.35%, and the probability is just a little bit greater than 0.05, which does not negate its significance altogether but implies that it's not an absolute a significant variable, hence we can partially accept Ho3 and reject H13. The next variable is the growth in broad money and as the literature supports there is a positive and a very significant relationship between the private credit and growth in broad money. Therefore, a one-unit change in the growth leads to an increase of 0.03% change in the dependent variable. The probability also shows that they both share a significant relationship. Therefore, we accept Ho4 and reject H14.

This study also provides results for short run scenario and the short run dynamics are stated in table 6 below.

Table 6
Estimated Short Run Coefficients using ARDL Approach
ARDL (1, 0, 2, 0, 2)
Dependent Variable: Private Credit
Time Period: 1972-2015

Regressor	Coefficient	Standard Error	T-Stats	Probability
D(MP)	-0.026336	0.022630	-1.163734	0.2531
D(LOMOA)	-0.015894	0.006721	-2.364796	0.0243
D(LOMOA(-1))	0.011890	0.007417	1.602942	0.1188
D(LOG_PR)	0.075577	0.039600	1.908521	0.0653
D(GBM)	0.001828	0.001334	1.369780	0.1803
D(GBM(-1))	-0.001848	0.001374	-1.345212	0.1880
CointEq(-1)	**-0.213325**	**0.081487**	**-2.617896**	**0.0134**

In the above table 6 the important thing to notice is the co-integration equation, its coefficient and the probability. The coefficient is supposed to be negative and less than one, given the probability must also be less than 0.05. Here both the criterions are met. The coefficient is negative 0.21325 and probability is 0.013 which is less than 0.05. Here it must be noted that the probabilities of all the variables are coming out to be insignificant implying that this model applies in the long run. This phenomenon is applicable in the long run.

Table 7 below shows the concept of multi co-linearity. The coefficients, standard errors, t- stats and VIF (Variance Inflation Factor) are mentioned in the table below (Table 7). The hypothesis for VIF stands:

- Null Hypothesis: VIF ≥10
- Alternate Hypothesis: VIF ≤ 10

Therefore, in the model the VIF for all the independent variables is less than value 10 which suggests that there is no severe multi collinearity in the model and all the variables are absolutely independent of each other.

Table 7
Multi collinearity

Variable	Coefficient	Std. Error	t-Statistic	VIF
LOMOA	-0.012698	0.016584	-0.765676	4.23555
LOG_PR	0.129726	0.080340	1.614705	2.45872
GBM	0.000463	0.003160	0.146646	3.22410
MP	-0.056344	0.048015	-1.173456	4.46879
C	2.869140	0.223278	12.85007	NA

5. Conclusion

To conclude, it can be established that the credit behaviour of the banks which is affected by the monetary policy stance taken by the state bank is more of a long run phenomenon as it is supported by the results. The coefficients are significant in the long run rather than in the short run. Estimates from the long-run parameter stability tests support cointegration in the presence of structural breaks. After analysing the results, we must conclude that growth in the broad money is the foremost important variable as far as this model is concerned. The previous studies have also been strong to establish the positive link between Money & Credit. Our prime finding in this study holds true according to the primary theory presented by Tobin (1965). A one unit change in the deposit base as defined as the term Broad Money in this paper bring about 3.7 % change in the amount of private credit extended (Table 5).

And it can alone explain and support the idea that why and how the credit growth is obtained through this. The results also suggest that the monetary policy shocks lead to a greater private sector lending leverage. The key implication of the findings is that credit to the private sector is an effective channel for monetary policy transmission in Pakistan. It is recommended therefore that

monetary authorities in developing countries should consider credit as a major channel for implementing monetary policies. The causal relationship undertaken in this study is beneficial for policy makers who are the respective authorities of money supply control. The extent to which the parameter of private credit can be explained by instruments of monetary policy is mainly attributed to the growth in the broad money. The process of this link can be explained via the chain of events that subsequently expands the broad money when credit is created to the individuals of an economy. Since most of the loans are later re-deposited in to the banking system and banks then adhere to the minimum reserve requirement with the SBP and allows for more credit expansion that ultimately increases the broad money in the economy. Hence it is a vicious cycle, that keeps the economy going. Aligned with the findings stated above the following conclusions can be made with reference to the research questions stated at the start of the study.

1. Some of the monetary policy tools are more effective than others. For instance, results in table 5 demonstrates that monetary policy mechanism is prevalent in Pakistan, however it is due to the changes in the deposit base with the conventional commercial banks in the economy.
2. Secondly, this link is explained only in the long run as two of the four variables in the model are significant and together makes it a good fit model

References

Aban, M. J. (2013). Transmission of Monetary Policy through the Bank lending Channel in the Phillipines. International Journal of Trade , Economics and Finance , 37-42.

Aftab, Nadeem & Jebran, Khalil & Ullah, Irfan & Awais, Muhammad. (2016). Impact of Interest Rates on private credit : Evidence from Pakistan. Jinnah Business Review, Vol 4, 47-52.

Amidu, M. (2006). The Link \between Monetary Policy and Banks Lending Behavior: The Ghanian Case. Banks and Bank Systems , 38-48.

Bellalah M., Ali S. A. & Masood O. (2013). Sensitivity Analysis Of Domestic Credit To Private Sector In Pakistan: A Variable Replacement Approach Application With Cointegration. Thema Working Paper No 2013-17, Université de Cergy Pontoise France, March

Bernanke, B., S., & Gertler, M. (1995). Inside the Black Box: The Credit Channel of Monetary Transmission. Journal of Economic Perspectives 9 (Fall 1995), 27-48.

Bernanke & Blinder, B. S. (1992). The Federal Funds Rate and the Channels of Monetary Transmission. The Amercican Economic Review, 82 , 901-922.

Bulusu. N (2020). Why Do Central Banks Make Public Announcements of Open Market Operations? Bank of Canada Staff Working Paper No. 2020-35

Gambacorta, L. (2005). Inside the bank lending channel. European Economic Review 49 , 1737-1759.

Imran, Kashif & Nishat, Mohammed. (2013). Determinants of bank credit in Pakistan: A supply side approach. Economic Modelling. 35. 384-390. 10.1016/j.econmod.2013.07.022.

Janjua, M. A. (2005). Money Supply, Inflation and Economic Growth. The Lahore Journal of Economics , 74-105.

J. Peek, E.S. Rosengren (Eds.), Is Bank Lending Important for the Transmission of Monetary Policy? Federal Reserve Bank of Boston Conference Series, No. 39 (1995), pp. 47-68

Kalu O. (2016). Emenike, How Does Monetary Policy And Private Sector Credit Interact In A Developing Economy? Intellectual Economics, 10(2), 92-100.

Kahn, A., G. (1991). Does More Money Means More Bank Loans? Economic Review, 21-29

Kaldor, N. (1956). LA EVOLUCIÓN CAPITALISTA A LA LUZ DE LA TEORÍA KEYNESIANA. El Trimestre Económico, 23(91(3)), 284–298.

Kashyap, A. K., Stein, J. C., & Wilcox, D. W. (1993). Monetary policy and credit conditions: Evidence from the composition of external finance.

Kashyap, A. K. and Stein, J. C The impact of monetary policy on bank balance sheets Carnegie Rochester Conference Series on Public Policy, 42 (1995), pp. 151-195

Kashyap, A. K. and Stein, J. C (2000). What do a million observations on banks say about the transmission of monetary policy American Economic Review, 90 (3) , pp. 407-428

Kashyap A.K, Rajan.R, Stein, J.C (2002). Banks as liquidity providers: An explanation for the coexistence of lending and deposit-taking The Journal of Finance, 57 (1), pp. 33-73

Kishan,R.P and Opiela T.P (2000). Bank size, bank capital and the bank lending channel Journal of Money, Credit, and Banking, 32 (1)), pp. 121-141

Malede, M. (2014). Determinants of Commercial Banks Lending: Evidence from. European Journal of Business and Management, 109-117.

Matemilola, Bany-Ariffin, T. & Muhtar B.-A. (2015). The Impact Of Monetary Policy On Bank Lending Rate In South Africa. Borsa Istanbul Review , 53-59.

Modugu, K.P. and Dempere, J. (2022), "Monetary policies and bank lending in developing countries: evidence from Sub-Sahara Africa", Journal of Economics and Development, Vol. 24 No. 3, pp. 217-229

Nwakanma, P. C., Nnamdi I. S. & Omojefe, G. O. (2014). Bank Credits to the Private Sector: Potency and Relevance in Nigeria's Economic Growth Process. Accounting and Finance Research, 3(2), 23-35

Rasheed, M.A. (2011). The Relationship Between Money Supply And Real Variables: Pakistan's Experience (1972-2008). Pakistan Business Review, 715-746.

Tabak, B. M., Laiz, M. T., & Cajueiro, D. O. (2010). Financial stability and monetary policy-The case of Brazil. Revista Brasileira de Economia, 67, 431-441.

Retrieved from http://www.sbp.org.pk/m_policy/About.asp.

Stein, J.C (1998). An adverse-selection model of bank asset and liability management with implications for the transmission of monetary policy RAND Journal of Economics, 29 (3) , pp. 466-486

Van den, S.J (2001). Heuvel Banking conditions and the effects of monetary policy: Evidence from U.S. states Mimeo., University of Pennsylvania

Pesaran, M. H., Y. Shin, and R. Smith, 2001, Bounds testing approaches to the analysis of level relationships. Journal of Applied Econometrics, 16, pp. 289-326.

Economic surveys of Pakistan

State Bank of Pakistan Annual Reports

Beaureu of Statistics

www.sbp.org.pk