EUROPEAN ACADEMIC RESEARCH
Vol. II, Issue 11/ February 2015

Impact Factor: 3.1 (UIF)
DRJI Value: 5.9 (B+)

ISSN 2286-4822
www.euacademic.org

Impact of Monetary Policy Shocks in a Dual Banking System in Pakistan: A Vector Auto Regressive Approach (VAR)

MUHAMMAD YASIR NAVEED
School of Management Sciences
Superior University, Lahore

Abstract

This research evaluates the impact of monetary policy shocks on banking sector of Pakistan. Banking sector includes both Islamic and conventional banks. Data have been used which covers the time period from January 2009 to December 2013. All data is based on monthly basis which has been extracted from monthly statistical bulletins issued by state bank of Pakistan and Pakistan bureau of statistics. I have used interest rate as the main variable of monetary policy. Interest rate is which is also popular as the name of overnight policy rate ONR. Other variables which is used in this research consists of bank balance sheet items of both the banking sectors (Conventional banks, Islamic banks), specifically conventional banks deposits (CD), conventional banks loans (CL), Islamic banks deposits (ID), and Islamic banks financing (IL). Other variables include QIM (quantum index number), CPI (consumer price index). Based on VAR (vector auto regressive approach) approach I have used impulse response function as well as variance decomposition analysis. Results shows that in Pakistan Islamic banks are not so much sensitive to monetary policy shocks. The study analyze that conventional are more stable then Islamic banks. According to the results interest rates are more sensitive to conventional banks. Interest rates have not so much impact on Islamic banks, because Islamic banks are considered as interest free banks. They have increased their financing in interest free modes.

Key words - Monetary policy shocks, dual banking, VAR approach

Introduction:

Financial policies seek to raise the well-being concerning to the general public and financial policy helps this particular comprehensive target by using concentrating its real initiatives to present price credibility. Included inside

that particular target could be the thinking that particular constant increase in prices might damage the future economic opportunities concerning to the country. The target appropriate to economic policy inside Pakistan, which is written at the State Bank of Pakistan Act 1956, will obtain the targets regarding to increasing prices and development put yearly to the federal government. Inside objective concerning this authorization, SBP prepares the country's economic policy this is certainly constant by using these revealed targets.

The economic indication technique relates to a procedure by using which economic policy measures determine the degree appropriate to economic task into the economy and also the increasing prices. Knowing the indication technique appropriate to economic policy is essential regarding proper layout and streamlined behavior appropriate to economic policy. That economic policy tasks determine policy variables at substantial delay accordance at high level appropriate to variance and uncertainness, it is essential to anticipate the feasible influence and level appropriate to economic policy tasks from the proper variables. Therefore, by using its real type, economic policy has a tendency to be onward seeking.

The technique associated with monetary transmission method which affects monetary techniques is also essential as well as far appropriate towards the success associated with monetary policy. The above mentioned explanation has revealed regarding the procedure associated with monetary transmission method by using the interest rate technique. The interest rate can be used in order to affect the determination associated with investors in creating funding as well as financial investment. Financial investment spending is a component associated alongside GDP; reduced financial investment will certainly reduce total demand, therefore resulting in the monetary techniques to be able to decrease. Then again, the interest rate technique isn't the exclusive technique in which monetary policy may be carried. Additionally there are some other channels which are often conduits for monetary transmission method for example banking company financing, rate of exchange, and asset price as well as balance-sheet channels.

In contrast to some other countries, Pakistan is actually functioning beneath the joint banking technique, which includes conventional and Islamic banking networks. This will make Pakistan banking system different. That is why, the bank financing approach in Pakistan might be considered in 2 elements. The very first component is standard financing approach throughout conventional banks, even though the secondly an individual lending approach by means of Islamic banks.

Karim et al. (2006) examined the effects regarding monetary policy on conventional banks in Malaysia financing to several financial markets by utilizing VAR model. Said and Ismail (2005), discovered the bank financing approach in Malaysia and furthermore tried to look at the dimensions as well as capital intensity of banks when it comes to performance regarding the

approach. They have applied bank levels data as well as utilized fixed effect cross-sectional model with GLS evaluation.

Yusof (2006) evaluated the monetary policy approach in having an effect on total and sectoral output in Asian countries particularly Malaysia, Indonesia, the Philippines, Singapore and Thailand. The research applied cointegration and VECM method. The best parameter in influencing output is M1 concerning to Malaysia in addition to Philippines, M2 for Indonesia as well as Thailand, and bank financing for Singapore. However, just the effect of economic policy on sectoral productivity of Malaysia is considerable.

Cetorelli and Goldberg (2008) reviewed economic policy by using the bank financing approach of two separate kinds of banks, which include locally focused banks that do not have worldwide functionality, as well as international operations banks. Their research indicated that monetary policy exclusively moves throughout locally focused banks although international focused banks depend on central funds marketplace in stabilizing their particular liquidity. That is why, they determined about the bank financing approach when you look at the US are going to be reducing in strength in case banking sector gets to be more globalized.

Literature review:

Maureen (2014) investigated in Kenya the impact of monetary policy by using a structural model of macro econometric. The variables have been used by them policy rate, interest rate, and CRR (cash reserve ratio). They have used this data in accordance to the interest rate and bank lending techniques. Results shows that change in monetary policy rate affects short term rates at a considerable margin whereas on long term lending rates it affects slightly. On the other hand monetary policy rate effects on real economy and on inflation it is negligible. According to them alterations in central bank rate have a large impact on inflation whereas a change in CRR has a large effect on aggregate demand. By increasing the efficiency of the CBR and increasing growth of the interest rate channel can increase the efficiency of monetary policy in Kenya.

J. Wickramanayake, (2014) investigated the impact of off balance sheet banking on the bank lending channel of monetary transmission. They have used a banking sector from south Asia. 114 commercial banks have been chosen by them and prepare a panel data set. Results show that when banks used off balance sheet banking this decreases the efficiency of bank lending method of monetary spread. Banks those have high experiences to off balance sheet practices can protect their loan supply against interest rate shocks that is issued in monetary policy and can minimize the effect of monetary transmission. They suggest that these are impacts are very low on the banks those are highly liquid, and have a strong capital. This small effect of off balance sheet banking on monetary transmission raises many questions on

policy issues, especially with reference to the appropriateness of monetary policy.

James Perry Cover, (2014) they have made an attempt to re-investigate the chain of Federal Funds Rate (FFR) shocks formed by Romer and Romer (2004). According to them if Romer and Romer used a reasonable set of monetary policy shocks and then include that in a VAR model they can identify different reasons and objects that affect United States financial system during that phase. They have used a time period of 1971:01-1996:12. According to them they have recognized easily cumulative demand shock and cumulative supply shock without striking any indication or long run limitations. They have used decomposition analysis to compare the monetary policy shocks with these shocks. Decomposition analysis also helpful to measures the relative importance of that shocks and to explain the fluctuations of that time period.

Fiordelisi et al (2014) reveals that from many years' central banks around the world decreases their main policy to keep their interest rate at low levels. This policy is helpful for the banks. The major purpose of this policy is to sustain funding situation and to encourage lending to private sector. To solve this phenomenon they have used a data set from 2007 to 2012 of monetary policy. They have investigated this problem at three levels. Their findings show that single central bank prepares monetary policy; this creates an assorted market reaction. Regular interest rates must have been used by the central banks instead of non-conventional ones. This policy can reinstate the market response. Standard interest rate is an essential tool for maintaining the standard execution of monetary intermediation. If central bank used nontraditional procedures this registered a strong market response in both areas.

Leonardo Gambacorta, (2013) reveals that worldwide economic crises have again confirmed the significance of economic elements of macroeconomic variations. According to him latest workings had shown that how the conventional pre crises formulas that monetary policy managers hasn't pay any concentration to monetary indicators over and above their impacts on inflation, on the other hand inflation is not an important predictor to measure the roughness in financial intermediation. This paper reveals that credit can play a vital role in expressions of bank lending channel, balance sheet channel, and it is revealed that bank interest rate between bank lending and policy rates are depends on bank influence. The primary outcome is that, additionally in a version for which economic reliability may not present a unique policy purpose, inclining in opposition to the influence procedures tend to be appealing when it comes to supply aspect shocks any time the central bank is actually focused on productivity improvement, even though both of these tight inflation focusing together with a traditional law tend to be less efficient. The benefits tend to be increased in the event that economic system is described as higher exclusive field indebtedness.

Adedeji, (2012) investigated the relationship of monetary policy and economic growth in Nigeria. He used different variables such as GDP, interest rate, inflation and money supply. Data is collected from central bank Nigeria. He applied different types of test to analyze this such as, unit root, regression analysis. According to his findings money supply is not an important factor on economic development of Nigeria, because it had no significant impact on overall economic development of Nigeria. Main grounds of economic development in Nigerian economy are monetary policies. Monetary policy issued by central bank not plays an important role in reducing the inflation and development of economy in Nigeria. Central bank cannot issue healthy policies due to the government conditions. This article concludes that if government wants to issue monetary policy stronger and effective, then a central bank must be free from the influence of government and can frame there rules effectively and efficiently.

Bijan Bidabad, (2011) reveals that conventional banks used interest based products, but interest is not allowed in Islamic banks. So Islamic banks have to use those which is free from *Riba*. According to them Islamic banks have to introduce new products for central bank, conventional banks, and other financial institutions. Interest free bonds are issued by them in different currencies. So the effect of monetary policy is not too much on Islamic banks because they are free from interest transactions.

Bangura, (2011) reveals that maximum banks used interest rates on short term basis, and it is considered as monetary policy. According to him when monetary policy changes interest rates will also change by commercial banks but normally this case is not true. Main point is that commercial banks change their interest rates with lags in reaction to monetary policy. This method makes their interest rate sultry. This sultriness in interest rate imposed by commercial banks is a big hindrance in regular flow of monetary policy. To estimate results he used different tests. Data has been taken from different sources which comprised of the time period from 1989-2009. Twenty years data has been used by him. He estimates the results of change in interest rates impact on discount rates, lending rates, deposit rates, and Treasury bill rates.

Syed H kassim, (2009), investigates the impact of monetary policy shocks on conventional and Islamic banks. They have considered a dual banking system in Malaysian environment. They have used data from January 1999 to December 2006. They have used different variables. To measure monetary policy they have used interest rate, known as overnight policy and denoted by ONR. Reason to selection of ONR is given by them that ONR is the monetary policy rate adopted by the bank Negara Malaysia. Other variables are selected by them from balance sheets of commercial and Islamic banks such as deposits, liabilities, consumer price index, and industrial production index. They have also included exchange rate as a control variable, because Malaysian economy is an open economy. According to them the objective of this study is to investigate the impact of change in interest rate on

Islamic and commercial banks finance and deposits. They have used VAR (vector auto regression) model to measure this impact. Results show that Islamic banks financial conditions are more sensitive than conventional banks. When interest rate changes this affects Islamic banks more than conventional banks, because conventional bank loans are more insensitive to interest rate changes.

Data and Methodology:

Data:

I have to evaluate the "Impact of monetary policy shocks on banking sector of Pakistan". To examine this impact I have selected monetary policy variables. Monetary policy is issued by state bank of Pakistan in Pakistan. State bank of Pakistan is the sole authority of issuing monetary policy. Different types of tools are used in monetary policy, such as "interest rate" which is also considered as ONR (overnight policy rate), money supply etc. I have used interest rate as the main variable of monetary policy. Interest rate is which is also popular as the name of overnight policy rate ONR. Other variables which is used in this research consists of bank balance sheet items of both the banking sectors (Conventional banks, Islamic banks), specifically conventional banks deposits (CD), conventional banks loans (CL), Islamic banks deposits (ID), and Islamic banks financing (IL). Other variables include QIM (quantum index number), CPI (consumer price index). The purpose of including a QIM in this study is that maximum loans are issued to industrial and manufacturing sector. That's why QIM is used. REER (real effective exchange rate is also used in this study because money supply is also a part of monetary policy, due to which exchange rate changed. I have used data in time series and it is in real terms. CPI and QIM are adjusted by the price index with 2005 as the base year. All variables are used in Log except ONR. This research utilized data on monthly basis which covers the time period from January 2009 to December 2013. Total 5 years data have been used by me on monthly basis which includes number of observations sixty. Data have been extracted from monthly statistical bulletins issued by state bank of Pakistan and Pakistan bureau of statistics. CPI is gathered from trading economics.

Methodology:

A VAR model is used to measure the impact of monetary policy shocks on banking sector. I want to analyze the relationship of monetary policy and banking sector deposits and financing. The matrix representation of VAR model can be written as:

$$y_t = A_1 y_{t-1} + \cdots A_p y_{t-p} + B x_t + \varepsilon_t$$

Where y_t is a k vector of endogenous parameter, whereas A_p and A_1 are matrices coefficients that are to be estimated, and x_t is a d vector of endogenous variable. ε_t refers to the error term of monetary policy shocks. This equation is a reduced form of VAR model.

To analyze the monetary policy shocks I have used impulse response functions every endogenous variable is calculated by the accumulation of a series of shocks. On the other hand I have also estimated variance decomposition analysis to measure the effect of interest rate on conventional deposits, loans, Islamic deposits and financing.

This study is based on VAR methodology, preferably for the function of this research, I have to include all the parameters in the modeling, but it can be weakly anticipated in this finite sample, on the other hand all the parameters can rapidly exhausts the degree of freedom. That's why I have estimated a different model which includes the bank balance sheet items separately. This model includes the ONR and different macroeconomic variables such as (QIM, CPI, and REER) and bank balance sheet objects (CD, CL, ID & IL). According to this each model includes five variables. Exclusively I have focus on the following basic estimation models:

Impulse response function:

I have estimated VAR model and create Impulse response function to measure the effects of policy rate shocks on these four models comprising the balance sheet items of Islamic and conventional banks. Equations of Impulse response functions are as follows:

$$LCD_t = a_{11}ONR_{t-1} + a_{12}LQIM_{t-1} + a_{21}LREER_{t-1} + a_{22}LCPI_{t-1} + \varepsilon_{1t}$$
$$LCL_t = a_{11}ONR_{t-1} + a_{12}LQIM_{t-1} + a_{21}LREER_{t-1} + a_{22}LCPI_{t-1} + \varepsilon_{2t}$$
$$LID_t = a_{11}ONR_{t-1} + a_{12}LQIM_{t-1} + a_{21}LREER_{t-1} + a_{22}LCPI_{t-1} + \varepsilon_{3t}$$
$$LIL_t = a_{11}ONR_{t-1} + a_{12}LQIM_{t-1} + a_{21}LREER_{t-1} + a_{22}LCPI_{t-1} + \varepsilon_{4t}$$

Where ε_{1t} denotes the change in value of CD. Due to lagged value in these equations it will also adjust forecasting values of ONR, QIM, REER, and CPI. ε measures the impact of one δ of monetary shock on present and future consumer price index, quantum industrial production, real effective rate and interest rate.An impulse response function predicts the impact of shocks at a certain point in forecasting values that are expected. This term is widely used to measure the impact of policy shocks because it shows potency in a graphical manner, and it can be traced the outline and trend of the transmission.

3.4 Variance decomposition analysis:

I have also used variance decomposition analysis to measure the impact of shocks on banking sector. The reason to use variance decomposition is that it provides different directions to forecasting the banking system. It is different

from impulse response function because variance decomposition allows us to measure the variations in the endogenous variable when we compute VAR. It provides information with reference to the comparative significance of each casual change regarding to variable computed in VAR.

Estimation and Results:

Unit root test results:

First of all I have applied two types of unit root test which includes (Augmented Dickey Fuller and Phillips-Perron test). I have estimated the entire test on all variables at intercept level. Table 3.2 shows the results of unit root test.

$$\Delta Y_t = C + \gamma_0 t + r_1 Y_{t-1} + \sum_{i=1}^{p-1} b_i \Delta Y_{t-1} + \mu_1$$

Hypothesis of a unit root test are:

H_0= Data has a unit root/ time series are non-stationary

H_1 = Data has not a unit root/ time series are stationary

According to the results of Augmented Dickey Fuller test I cannot reject null hypothesis at Level (data has a unit root). All the variables have a significance value more than .05. On the other hand variables which include ONR, LCD, LCL, LIL, LCPI, LREER, and LQIM are significant at 1st difference. For these variables we can reject null hypothesis data has a unit root. This means that at 1st difference these are all variables stationary. ID is a variable due to which we cannot reject null hypothesis data has a unit root. ID is not stationary at level and 1st difference. It gains Stationarity at 2nd difference.

Granger causality test:

In order to investigate the relationship between variable I have applied granger causality test. I am estimating the trend of causality between variables. Null hypothesis of this test is:

H_0= Y does not granger causes to X

Table 3.1 shows the results of granger causality test:

LCD does not granger causes ONR	0.0078	Null rejected
LCL does not granger causes ONR	0.0169	Null rejected
LID does not granger causes ONR	0.0221	Null rejected
LIL does not granger causes ONR	0.4495	Null accepted

According to the results of particular balance sheet items and ONR results we can reject null hypothesis (Y does not granger causes to X) at 5% significance level for conventional deposits, conventional loans and Islamic deposits. It means that overnight policy rate have a long run relationship with

conventional deposits, conventional loans, and Islamic deposits. On the other hand we cannot reject null hypothesis in case of LIL.

Model estimation for conventional deposits:

To measure the relationship between conventional deposit and overnight policy rate, I have estimated model with 2 lags. By following the old studies I have selected the order of variables in the model. Firstly I have selected variables conventional deposits and then other macro-economic variables.

By putting the coefficients in the equation:

$$LCD_t = 0.018ONR_{t-1} - .016\,LQIM_{t-1} + .23LREER_{t-1} - .34LCPI_{t-1} + 0.005ONR_{t-2} + .034LQIM_{t-2} - .30LREER_{t-2} + 1.17LCPI_{t-2} + 1.90 + \varepsilon_{1t}$$

For conventional loans:

$$LCL_t = -0.07ONR_{t-1} + .010\,LQIM_{t-1} - .11LREER_{t-1} + .02LCPI_{t-1} + 0.002ONR_{t-2} + .0004LQIM_{t-2} - .30LREER_{t-2} + .212LCPI_{t-2} + 3.11 + \varepsilon_{1t}$$

Model estimation for Islamic deposits:

To measure the relationship between Islamic banks deposit and overnight policy rate, I have estimated model with 2 lags. By following the old studies I have selected the order of variables in the model. Firstly I have selected variables of Islamic deposits and then other macro-economic variables.

$$LID_t = -0.009ONR_{t-1} - .003\,LQIM_{t-1} + .25LREER_{t-1} + .04LCPI_{t-1} + 0.001ONR_{t-2} + .008LQIM_{t-2} - .42LREER_{t-2} + 1.21LCPI_{t-2} + 2.65 + \varepsilon_{1t}$$

For Islamic financing:

$$LIL_t = -0.009ONR_{t-1} + .024\,LQIM_{t-1} - .005LREER_{t-1} + .80LCPI_{t-1} + 0.012ONR_{t-2} - .030LQIM_{t-2} + .087LREER_{t-2} - .26LCPI_{t-2} + 2.65 + \varepsilon_{1t}$$

Impulse response function:

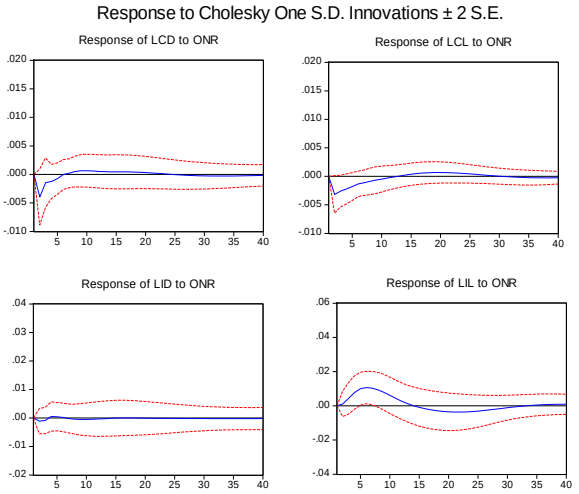
Impulse response function analysis enables us to measure the impacts of interest rate shocks on banking sector (conventional and Islamic deposits).we can see from Impulse response function the importance and time period of responses in main parameters. Impulse response function allows us to compare the bank balance sheet items with two monetary policy shocks.

In this research I have estimated VAR then I have applied impulse response function. In impulse response function all the graph are available but I have selected just those graphs those are related to bank balance sheet items. Figure 1 shows the results which includes the responses of endogenous bank balance sheet items of both Islamic and conventional banks.

As shown in figure there is a positive relationship between conventional deposits and the rate of interest. These results is just like the same as describes in finance theory that as the monetary policy rates increases it will leads us to higher deposits. When interest rate increased by central banks then people deposit their surplus amounts in banks to earn income at higher rates. Interest rates can be increased by central banks to promote savings. It will provide different types of benefits such as inflation can also be controlled by increasing interest rates. On the other hand conventional deposits shows a strong relationship with interest rates as the interest rates increase, conventional deposits responds just like ONR.

On the other hand Islamic banks are not affected by interest rates. As shown in figure there is a positive relationship up to 5-6 periods. After that Islamic deposits and interest rates go side by side. Overnight policy rate does not affect Interest free banking in Pakistan More over after 10^{th} period interest rate have not any effect on Islamic deposits. The reason for that Islamic bank is not in a competition to conventional banks in Pakistan, because conventional banks have so many branches, network system, and huge investments.

For loans we can say that there is positive relationship between interest rates and conventional loans. It is a true fact when interest rates increases people deposits their amounts in banks so banks can create more credit. Competition will increase and banks will lend at lower rates of interest. Graph of conventional bank loans shows that there is a negative relationship up to 14^{th} months, but about after 14 months this result shifts to the positive side. Relationship between Islamic banks financing and interest rate is also interesting. There is a positive relationship about up to 10 periods but after that Islamic banks financings shows negative response. From 10^{th} to 35^{th} month it shows negative relationship but from 35-40^{th} month again positive. People borrow from Islamic banks when interest rates are high for conventional loans, but as the monetary policy loose people will borrow from conventional banks. This can be time period where Islamic banks are in stage of mergers and acquisition. Due to which Islamic banks financing decreased.



Variance decomposition analysis:

Variance decomposition is utilized to measure the interactions between interest rate and bank balance sheet items. When we will compare these two groups then variance decomposition analysis forecast error variance of both banking groups including Islamic and conventional banks. I have used time period of 30 months.

According to table 3.3 in case of Islamic deposits changes in overnight policy rate elaborate around 1.5 % of its forecast error variance. This shows us that overnight policy rates or interest rates are not so much important for Islamic deposits. It also means that shocks in ONR explain variations in Islamic deposits just up to 1.5% in 2nd month. Consumer price index is the highest contributor in Islamic deposits at 30th month and so on it will increase. The VDA outcomes also reveal that shocks in conventional deposit is 10 % of the variations in overnight policy rate. It means that overnight policy contributes up to 10 % of forecast error variance of conventional deposits.

According to table 3.4 in case of Islamic financing changes in overnight policy rate elaborate around 6 % of its forecast error variance. This shows us that overnight policy rates or interest rates are not so much important for Islamic financing. It also means that shocks in ONR explain variations in Islamic deposits just up to 6% in 30th month and so on it will continue. Consumer price index is the highest contributor in Islamic financing at 30th month and so on it will increase. The VDA outcomes also reveal that shocks in conventional loans is 8 % of the variations in overnight policy rate. It means that overnight policy contributes up to 8 % of forecast error variance of conventional loans. It means that ONR affects Islamic deposits and conventional loans, but as the time passes affect increase for Islamic financing and decreases for conventional loans.

Conclusion:

This study used a VAR based approach to measure the impact of monetary policy shocks on banking sector. VAR approach allows us to study the impacts from impulse response functions and variance decomposition analysis. This approach is well suited for our analysis because there are different dependent variables such as LCD, LCL, LIL and LID. The study evaluates the effect of monetary policy shocks on banking sector. I have compared the banking sector of Pakistan. Banking sector includes Islamic and conventional banks. The study analyze that conventional are more stable then Islamic banks. According to the results interest rates are more sensitive to conventional banks. Interest rates have not so much impact on Islamic banks, because Islamic banks are considered to interest free banks. They have increased their financing in interest free modes. Due to larger capital size, increased investments, bulk quantity of accounts, number of branches, conventional banks are more stable then Islamic banks. Islamic banks are at its initial stages in Pakistan; daily mergers destroyed their operations, and decrease their importance. There are different problems of Islamic banking sector. Such as screening methodologies, challenges and risks of Islamic capital markets shows that screening methodologies for a new product approval must be according to Islamic law and it is compulsory for *shariah* scholars that they have thorough and complete knowledge of Islam. According to some authors one product is approved by *shariah* board and it is totally verified and checked by the board throughout the development process. If there is any issue arises then this product may be not allowed. The second issue for screening is that the difference in knowledge of *shariah* scholars due to which one product is approved in one region but the same product is banned in another region. Another main point is discussed by a researcher that if *shariah* scholars will continue to receive a fixed return on every security then the Islamic banking will lose their value as compared to conventional.

According to the results of variance decomposition analysis monetary policy doesn't have any impact on Islamic banking deposits. Just about 1 % change in Islamic deposits can be considered by monetary policy which concludes as interest rate. On the other hand conventional deposits, loans, and Islamic financing are affected by ONR as 10%, 6%, and 6% respectively. On the other hand consumer price index is the most dominant variable on Islamic, and conventional deposits, as well as Islamic and conventional financing. So we can say that when inflation rate is high then people don't have surplus amounts that can be deposited in banks. That's why deposits of both banking sector decreases and they cannot create credit. Impulse response function shows the results that Islamic bank financing is affected negatively to overnight policy rate. Not any effect shown by ONR on Islamic deposits. On the other hand impact on Islamic financing negatively up to 15-30th month. After that it shows a positive relationship. It can be asked that implementation of interest free banking is not mature and it can take a long

term period to implement interest free banking in Pakistan. This research provides different dimensions for policy makers to think about the efforts to expand interest free banking in Pakistan. Islamic banks have to face different risks which are different from conventional banks.

The results also recommend that there is a short run relationship between Islamic financing and monetary policy. It reaffirms that monetary policy has a negative impact on Islamic financing. When interest rates increases or decreases it has an impact on conventional banks. According to (Shabri) there is a long run relationship between all the variables. There results show that interest rate has a significant relationship on Islamic financing negatively. If Islamic financing increases than GDP also increases vice versa. If we have to apply Islamic values then we have to change the basic operations of financial institutions. Policy makers face a number of complicated problems when they converting their economy towards Islamic economy. There are many issues that have to be solved. These issues can be monetary policies, fiscal policies, exchange rate policies, and the impact of savings and investments that is changed due to these policies. There will be no change due to monetary policy in Islamic economy. Monetary authorities can attain same outcomes by controlling the lending of banks because they bring a change in money supply. On the other hand Islamic financial institutions can get these results, when monetary policy expands it reduces profits rates and expand their output. Central banks have to regulate sharing ratios between banks and borrower and as well as bank and depositor. The difference between these ratios will be the interest rate and rate of returns that bank generates from its financial resources. On the other hand in Pakistani Islamic banks are not so much sensitive to interest rate changes. Conventional banks due to large size have an advantage on Islamic banks.

Recommendations and limitations:

Aside from using policy strategies to deal with the promising problems, Pakistan central bank have to furthermore launched constructive alterations in the entire process of monetary policy composition and have to carry out an order to make the monetary policy composition and execution much more crystal clear, streamlined, and reliable. Exclusively, throughout the past few years, Pakistan central bank has taken the following measures:

-Stepping up movement towards a more market based credit allocation mechanism,

-Developing its analytical and operational capacity,

-Improving its capabilities to assess future developments to act proactively, and

-Improving upon the communication of policy stance to the general public.

-Institutionalizing the process of policy formulation and conduct,

-The conventional banks need to manage just at least cash reserve and rely on the central bank for acquiring reserve.

-Pakistan central bank needs the fact that level of income ought to be enhanced or maybe reduced to manipulate the cost level.
-The bank rate policy ought to reliable only if the offering rates of commercial bank are impacted by alterations in bank rate.

With regard to successful review of improvements as well as policy making, regular and high quality info is incredibly essential. Although, because of flaws within the important information assortment and revealing procedure associated with a variety of services regarding the country, info is certainly not accessible at preferred timeliness and also consistency. Furthermore generally there are problems throughout the quality of data. In contrast to countless evolved and flourishing information, regions on every quarter collection, earnings as well as GDP, etc. is probably not obtainable in the event of Pakistan. Additionally, the information on essential macroeconomic parameters (like that federal government expenses and earnings, creation of heavy level collection, production estimates, etc.) is generally obtainable using considerable delays. These particular restrictions comprehensive review associated with existing economic condition and also creating patterns, and prevents the capability associated with the SBP to formulate an onwards appearing policy position.

Still another problem will be to create a very clear difference in between rate of exchange procedures as well as monetary procedures. At this time, there's a common opinion about the central Bank is restricted to help keep the rate of exchange at certain predetermined criterion as well as any sort of activity aside with this criterion will be regarded as an ineffectiveness regarding the SBP. There's definitely a necessity to realize that for an unrestricted economic system, it is usually been extremely hard to follow an autonomous monetary as well as rate of exchange policy along with enabling financing to move around readily over the border. This might simply be accomplished through placing extensive limitations on financing activities, which is not feasible. SBPs obligation will be make sure an atmosphere in which currency exchange moves are determined through economic essential as they are not misguided through rental finding speculation. In recent years, as soon as the banking setup encountered phenomenal stress as well as anxiety because of short liquidity throughout the setup, rumor mongering increased the overall general public stress as well as anxiety across some banks' durability.

Therefore, the SBP needed to interfere into the sector by using inserting sufficient liquidity by using different procedures. In some sectors, these types of adjustments happened to become considered as a modification of the Bank's restricted monetary policy situation. On the other hand, this had been far from the truth in addition to Bank needed to distinctly as well as continuously interact that the current situation is now being preceded. In the future, the Bank additionally tightened up its actual monetary policy.

REFERENCES:

J. Wickramanayake, d. r. (2014). Impact of off-balance sheet banking on the bank lending channel of monetary transmission: Evidence from South Asia. *Journal of International Financial Markets, Institutions and Money* , Volume 29, 195–216.

james perry cover, e. o. (2014). Using Romer and Romer's new measure of monetarypolicy shocks to identify the AD and AS shocks. *applied economics, volume 45, issue 19* , 2838-2846.

Maureen were, e. n. (2014). Assessing the effectiveness of monetary policy in Kenya: Evidence from a macroeconomic model. *economic modeling vol 37* , 193-220.

Fiordelisi, F., Galloppo, G., & Ricci, O. (2014). The effect of monetary policy interventions on interbank markets, equity indices and G-SIFIs during financial crisis. *Journal of Financial Stability*, *11*, 49-61.

Leonardo Gambacorta, F. M. (2013). Should monetary policy lean against wind? An analysis based on DGSE model with banking. *Division of the Bank of Italy,ISSN 2281-3950 (online).*

Adedeji, o. o. (2012, april). the impact of government monetary policy on nigerian economy 1980-2009 Nigeria: *department of management and accounting, obafemi awolowo university of nigeria.*

Bangura, L. (2011). Adjustment of commercial banks interest rates and the effectivness of monetry policy: evidence from Anflophone West Afica . *Adjustment of commercial banks interest rates and the effectivness of monetry policy: evidence from Anflophone West Afica* . Grahamstown, west Africa, south Africa: Department of economics and Economic history, Rhodes University, Grahamstown.

Bijan Bidabad, A. H. (2011). Interest-Free Bonds and Central Banking Monetary Instruments. *International Journal of Economics and Finance Vol. 3, No.3;* , 234-241.

ANG, J. B. (2009). Private Investment and Financial Sector Policies in India and. *World Development, 37,* , 1261-1273.

Fikriyah Abdullah, Taufiq Hassan, Shamsher Mohamad (2007),"Investigation of performance of Malaysian Islamic unit trust funds: Comparison with conventional unit trust funds", Managerial Finance, Vol. 33 Iss: 2 pp. 142 – 153

Kaleem, A. I. (2006). Isalmic banking and money demand function in Malaysia: an econometric analysis. *Pakistan economic and social review* , 277-290.

Thorsten Beck, Asli Demirgüç-Kunt ,Ouarda Merrouche (2010), "Islamic vs. Conventional Banking, Business Model, Efficiency and Stability", *The World Bank Development Research Group Finance and Private Sector Development Team,* Policy Research Working Paper 5446.

Appendix I:

Table 3.1 Augmented Dickey Fuller and PP Unit Root Tests Results: 2009M1-2013M12

Augmented dickey- fuller test unit root test				Phillips-perron unit root test			
Variables	Stationarity	*ρ VALUE* At level	*ρ VALUE* 1st/2nd diff	Variables	Stationarity	*ρ VALUE* At level	*ρ VALUE* 1st/2nd diff
ONR	1ST Difference	.6582	.0023	ONR	1ST Difference	.6411	.0000
LCD	1ST Difference	.9453	.0032	LCD	1ST Difference	.9704	.0001
LCL	1st Difference	.9577	.0000	LCL	1ST Difference	.9793	.0000
LID	2nd Difference	.2134	.0000	LID	At level	.0437	.0000
LIL	1st Difference	.7461	.0019	LIL	1ST Difference	.8475	.0044
LCPI	1ST Difference	.5868	.0000	LCPI	1ST Difference	.5103	.0000
LREER	1ST Difference	.5161	.0000	LREER	1ST Difference	.4236	.0000
Log QIM	1ST Difference	.5367	.0000	LQIM	1ST Difference	.5005	.0000

Appendix II

Table 3.3: Variance Decompositions of Deposits

Percentage of forecast variance explained by innovations:												
Period (Month)	Variance Decomposition of Islamic Deposits						Variance Decomposition of Conventional Deposits					
	S.E.	LID	ONR	LREER	LQIM	LCPI	S.E.	LCD	ONR	LREER	LQIM	LCPI
1	0.02	100.00	0.00	0.00	0.00	0.00	0.02	100.00	0.00	0.00	0.00	0.00
2	0.02	96.32	1.48	2.15	0.04	0.01	0.02	90.24	8.15	0.43	0.20	0.97
3	0.03	82.59	1.47	8.05	0.88	7.00	0.02	84.33	8.41	3.20	0.25	3.80
4	0.03	65.23	1.13	9.74	2.51	21.39	0.02	79.78	8.79	3.80	0.69	6.94
5	0.03	52.58	0.91	8.69	3.61	34.21	0.03	75.06	9.20	4.08	1.09	10.57
6	0.04	46.04	0.78	7.69	4.11	41.37	0.03	71.20	9.33	4.29	1.53	13.65
7	0.04	43.67	0.73	7.27	4.39	43.94	0.03	68.08	9.54	4.62	2.06	15.70
8	0.04	43.22	0.69	7.66	4.64	43.79	0.03	65.32	9.65	5.20	2.65	17.17
9	0.04	42.79	0.65	9.03	5.00	42.54	0.03	62.86	9.66	5.98	3.29	18.23
10	0.04	41.65	0.59	10.83	5.50	41.43	0.03	60.60	9.59	6.85	3.92	19.04
11	0.05	40.06	0.55	12.36	6.05	40.97	0.03	58.55	9.47	7.74	4.51	19.73
12	0.05	38.48	0.54	13.38	6.52	41.09	0.03	56.69	9.32	8.59	5.04	20.36
13	0.05	37.18	0.53	14.00	6.84	41.44	0.03	55.01	9.15	9.38	5.48	20.97
14	0.05	36.21	0.53	14.46	7.04	41.76	0.03	53.47	8.99	10.11	5.84	21.59
15	0.05	35.46	0.53	14.90	7.14	41.98	0.03	52.06	8.83	10.78	6.12	22.21
16	0.05	34.81	0.52	15.37	7.18	42.12	0.03	50.75	8.68	11.40	6.33	22.85
17	0.05	34.18	0.52	15.85	7.18	42.27	0.03	49.51	8.53	11.98	6.49	23.49
18	0.06	33.55	0.53	16.32	7.16	42.45	0.03	48.34	8.39	12.52	6.60	24.15
19	0.06	32.93	0.53	16.73	7.11	42.69	0.04	47.23	8.26	13.04	6.66	24.80
20	0.06	32.36	0.54	17.11	7.05	42.95	0.04	46.17	8.14	13.53	6.70	25.45
21	0.06	31.84	0.55	17.44	6.97	43.21	0.04	45.15	8.03	14.00	6.72	26.09
22	0.06	31.36	0.55	17.76	6.88	43.45	0.04	44.18	7.93	14.46	6.71	26.72
23	0.06	30.93	0.56	18.07	6.78	43.67	0.04	43.26	7.83	14.89	6.69	27.34
24	0.06	30.52	0.56	18.36	6.68	43.88	0.04	42.37	7.74	15.30	6.66	27.93
25	0.06	30.14	0.56	18.64	6.58	44.08	0.04	41.52	7.65	15.70	6.63	28.50
26	0.06	29.78	0.56	18.90	6.49	44.27	0.04	40.71	7.57	16.08	6.59	29.05
27	0.06	29.44	0.57	19.14	6.40	44.46	0.04	39.94	7.50	16.45	6.55	29.57
28	0.07	29.12	0.57	19.36	6.31	44.64	0.04	39.21	7.43	16.80	6.50	30.07
29	0.07	28.83	0.57	19.57	6.22	44.81	0.04	38.50	7.36	17.13	6.46	30.55
30	0.07	28.56	0.57	19.77	6.14	44.97	0.04	37.84	7.30	17.45	6.42	31.00

Appendix III

Table 3.4: Variance Decompositions of Loans

Percentage of forecast variance explained by innovations in:												
Period (Month)	Variance Decomposition of Islamic financing						Variance Decomposition of Conventional Loans					
	S.E.	LIL	ONR	LREER	LQIM	LCPI	S.E.	LCL	ONR	LREER	LQIM	LCPI
1	0.03	100.00	0.00	0.00	0.00	0.00	0.01	100.00	0.00	0.00	0.00	0.00
2	0.04	97.52	0.51	0.64	0.05	1.29	0.02	96.70	2.12	0.77	0.40	0.01
3	0.06	94.33	0.45	1.97	0.04	3.21	0.02	92.91	4.00	1.46	0.66	0.98
4	0.06	88.72	0.37	4.48	0.24	6.19	0.02	88.95	5.49	2.42	0.64	2.50
5	0.07	81.15	0.39	7.94	0.58	9.94	0.02	85.27	6.65	3.09	0.72	4.27
6	0.07	73.22	0.57	11.63	0.81	13.78	0.02	82.09	7.39	3.37	1.30	5.84
7	0.07	66.31	0.85	14.84	0.82	17.18	0.02	79.14	7.79	3.37	2.59	7.11
8	0.08	60.93	1.13	17.22	0.75	19.97	0.02	76.20	7.91	3.25	4.57	8.07
9	0.08	56.90	1.32	18.75	0.79	22.23	0.02	73.23	7.83	3.12	7.03	8.79

10	0.08	53.82	1.41	19.58	1.10	24.09	0.02	70.29	7.61	3.04	9.71	9.35
11	0.09	51.38	1.40	19.86	1.67	25.68	0.02	67.50	7.34	3.00	12.34	9.82
12	0.09	49.36	1.34	19.78	2.44	27.07	0.02	64.94	7.06	3.00	14.75	10.25
13	0.09	47.66	1.26	19.47	3.30	28.31	0.02	62.67	6.78	3.03	16.86	10.66
14	0.10	46.19	1.20	19.04	4.13	29.44	0.02	60.67	6.54	3.08	18.63	11.08
15	0.10	44.92	1.18	18.57	4.87	30.46	0.02	58.95	6.32	3.15	20.05	11.52
16	0.10	43.80	1.22	18.11	5.46	31.40	0.02	57.48	6.14	3.25	21.17	11.97
17	0.10	42.80	1.34	17.71	5.89	32.27	0.02	56.21	5.98	3.36	22.02	12.43
18	0.10	41.87	1.54	17.37	6.16	33.06	0.02	55.12	5.84	3.49	22.63	12.92
19	0.11	41.00	1.82	17.10	6.28	33.79	0.02	54.17	5.73	3.63	23.05	13.41
20	0.11	40.17	2.17	16.92	6.28	34.45	0.02	53.35	5.63	3.79	23.32	13.91
21	0.11	39.37	2.58	16.80	6.21	35.04	0.02	52.63	5.54	3.97	23.46	14.41
22	0.11	38.58	3.02	16.76	6.09	35.55	0.02	51.99	5.45	4.15	23.49	14.92
23	0.11	37.80	3.47	16.79	5.96	35.98	0.02	51.40	5.38	4.34	23.46	15.42
24	0.11	37.03	3.92	16.88	5.84	36.32	0.02	50.88	5.31	4.54	23.36	15.91
25	0.11	36.27	4.34	17.04	5.77	36.57	0.02	50.39	5.24	4.74	23.23	16.40
26	0.12	35.53	4.73	17.25	5.74	36.74	0.02	49.94	5.18	4.94	23.07	16.88
27	0.12	34.81	5.06	17.53	5.77	36.84	0.02	49.52	5.12	5.14	22.88	17.34
28	0.12	34.10	5.33	17.85	5.84	36.87	0.02	49.12	5.06	5.34	22.69	17.79
29	0.12	33.42	5.55	18.22	5.95	36.86	0.02	48.74	5.00	5.54	22.49	18.23
30	0.12	32.75	5.71	18.63	6.09	36.82	0.02	48.38	4.94	5.73	22.28	18.66