Impact of interest rate changes on bank profitability

Finance, Banks

Over the years, banking system in Pakistan shown enormous growth and potential. The performance and stability indicators showed significant improvement in the profitability of banking system. But now a days banking sector going under pressure. Such as liquidity crunch and solvency problem have significant impact on the performance of banking sector and economy. The financial institution could have managed the situation without any trouble if they have sufficient amount of liquidity available to fulfill their obligation. Since they are operating in very tight market conditions. So, they are forces to pay attractive rates to depositors to attract liquidity. Although the State Bank of Pakistan reduced the Cash Reserve Requirement (CRR) and Statutory Liquidity Requirement (SLR) on demand and Time Liabilities to ease the liquidity in the market. The governments instead of developing their own recourses empower banks to generate money and then borrow from banks. The huge amount of borrowing from banks by the government its disturbing the economy. The government not only curtails its borrowing from banks but also put some sort of check on power of money.

All these factors have combined to set a stage where lending rates are high and having great amount of burden on banks financials. The amount of non performing loans increased at rapid speed despite of heavy amount of provision created by the bank in recent years. The increasing asset quality concerns would force the banks to book heavy provisions for non performing loans (NPLs).

The stability of the banking system is conditional upon the stability of overall economy. A stable macroeconomic environment contributes to effective and

efficient growth of saving and investment decision. Appropriate macroeconomic measures should support the functioning of the banking system more specifically in the areas of financial stabilization, transparent fiscal policy and monetary policy. The major contributor role of effective and efficient growth in the economy is played by the State Bank of Pakistan and provides guideline to the financial institution to play their role in the development by mobilizing the resources of the economy and facilitating the investors.

The success of a bank also depends on the ability to forecast and avoid risk, to cover the losses brought about by the arisen risk. Profit is the important requirement of a competitive banking institution and the cheapest source of funds. It is essential to see it not simply as a result, but also a necessity for successful banking in a growing competition on financial market. These important facts together are the reason for this to focus on the current topical issue of banks profitability. We will highlight problems which are influencing on banks effectiveness and efficiency to manage their portfolio such as assets and liabilities in aiming at to achieve profitability and identify the areas where it might have possible room for raising the bank profitability. Banks assets are grouped into two categories – earning assets and non earning assets. Earning assets means those on which banks earns interest income and non earning assets means those which used for the purpose reserve requirement, fixed assets to run day to day operational activities. In this study we have focus on earning assets. This included Placement and lending to financial institution, investment in securities and loan & advances.

These assets are the major source of income for bank. Therefore, it is apparent that average income generation ability of these assets has a decisive influence on the banks profitability.

As financial intermediary, banks play a vital role in the operation of most economic development. The efficiency of financial intermediation can also affect the economic growth. Banks are different from other firms in that they provide financial services, the reward to which is an interest rate, and the most of the funding are financed by the deposits or borrowing, the expense of which is also an interest rate. Interest margin, the difference between what a bank has earns on its earning assets and what is paid to depositor. It has been on upward trend during the last decade. An increase in the spread would affect the depositor or the borrower or both stand loose at same time. The lack of alternate avenues of financial intermediation aggravates the adverse impact of spread. For example, if the State Bank of Pakistan based on the monetary policy change the interest rate. Then the change in the interest rate influences the cost of capital that in turn affects the level of consumption and investment decision. If the increase in the spread is due to decrease the rate to depositors then this discourage the saving, and alternatively if due to increase the rate it would have adverse impact on investment. Therefore, these changes in the interest rate have important implication on the economy.

Banks are more sensitive to interest rate changes than most of the other institutions. The effect of interest rate changes on banks profitability has been an important issue for banking system. It has been argued that bank

exposure to interest rate risk perhaps the most important issue in participating the saving and investment crises.

1. 2: Problem Statement

The impacts of interest rate changes have a significant impact on the bank profitability. When interest rate changes it would result in increase or decrease in the interest income of the bank and also have adverse affect on depositors saving and borrower investment decision.

1. 3: Objective

This research aims to study the impact of interest rate changes on banks profitability based on the following variables directly affecting the banks profitability

Interest rate

Balances with other banks – Deposits accounts

Lending to Financial Institution

Investments

Loan & Advances

1. 4: Research Scope and Limitation

The scope of this research is to find out the impact of interest rate changes on banks profitability. There are few limitation involved in the study.

The sample selection consists of five major banks. Which covers the 57% market share of the Pakistan banking industry.

The basis for calculation of income is KIBOR rate. The banking system starts using as benchmark as KIBOR rate from 2002 onward. Therefore, our study period is 2003 – 2008.

1. 6 Chapter Summary

The banking sector shown enormous potential in previous years. Banking sector achieved high profitability and economy was stable. But from 2008 onward banking sector going through a financial crises such as liquidity and solvency problem. To control the uncertain condition of the country. The central bank reduces the Cash Reserve Requirement and Statutory Liquidity Requirement. So, banks have more liquidity to fulfill their obligations. On the other hand Central Bank increases the discount rate to control the money supply in the market. Which result in higher interest rates. Due to the increase in interest rate and financial crises borrowers default ratio increase and financial institution suffer large amount of losses during the period. This increasing amount of asset quality concerns would force the bank to book heavy provision for non performing loans (NPLs). The stability of the banking system is dependant on the economy. A stable macroeconomic condition will contribute to effective and efficient growth of saving and investment. Banks play as role of financial intermediary in the development of economy. If the central bank made any change in the monetary policy it will affect the performance of financial institution. Then the changes in the interest rate will affect the saving and investment. If the spread increases due to decrease in

the rate to depositor then it will discourage the depositor and alternatively if due to increase in the rate to borrower then it will affect the investment decision. Therefore, banks are more sensitive to interest rate changes then the other institution. The effect of interest rate has been today’s most important issue for banking sector.

Chapter 2: Literature Review

The study of Flannery, (1981) showed that “ large banking organizations (1978 assets greater than $2 billion) are well hedged against interest rate fluctuations”. The large banks made necessary adjustment to avoid interest rate fluctuation by revising the repayment schedule rate as per the agreement with customer to minimize their interest rate risk. The some of the borrower pay quarterly, half yearly and annual payments. So, as per the agreement schedule bank revise the rates which minimize the risk of bank.

When market rate change, the large banking organization made necessary adjustments to avoid interest rate volatility in revenue and cost. The mostly organization have mis matched balance sheet such as they borrow from customer and financial institution at shorter period or maturity and give lending to customer and financial institution at longer period. It would create mis match between balance sheet. Therefore, banks are exposing to interest rate risk and liquidity risk. To avoid the liquidity risk the banks develop relationship with financial institution to overcome their liquidity problem on immediate basis and for interest rate they minimize the risk by revising the interest rate of the contract as per the agreement.

The finding of this article suggests that " most bank posses a sufficient range of assets and liabilities choices to avoid the risk. This study employs annual data from the federal Reports of Income and Condition on individual insured banks in continuous existence from 1960 through 1978. Twelve banks were chosen at random from the national population in each of five asset size categories (based on year-end 1978 assets): less than $25 million, $25- 25-49. 9 million, $50-99. 9 million, $100-299. 9 million, and greater than $300 million. Holding company subsidiary banks were excluded from the first four size million, $100-299. 9 million, and greater than $300 million. Holding company subsidiary banks were excluded from the first four size groups; 3 banks above $300 million were included regardless of their subsidiary status, since large independent banks may not be representative of the population" Flannery, (1983). In this study data collected from the federal report of income and condition from 1960 to 1978. Population of Twelve banks randomly chosen for analysis and break into 5 different assets size categories on the basis of 1978 assets: less than $25 million, greater than $25 and less than $49. 9 million, greater than $50 and less than $99. 9 million, greater than $100 and less than $299. 9 million and greater than $300 millions. In this study holding company's subsidiary excluded from first four groups and greater than $300 million includes the subsidiary banks of holding company and regression techniques had been used in the analysis. The result of the study showed that commercial banks groups are substantial exposed to interest rate risk and individual bank choose alternatives to avoid such risk. Bank possess sufficient amount of funds available in the form of assets and liabilities to minimize those risk and try to get productive results.

The study of Barajas et. al (1999) showed that “ a key variable in the financial system is the spread between lending and deposit interest rates. When it is too large, it is generally regarded as a considerable impediment to the expansion and development of financial intermediation, as it discourages potential savers with low returns on deposits and limits financing for potential borrowers, thus reducing feasible investment opportunities and therefore the growth potential of the economy”. The key point of financial institution is the spread between Loan and deposits rate differences. When the lending rate is high and deposits rate is low then which results in higher the profitability for the financial institution but on the other hand it will discourage the depositor. Because the depositors getting low return on their savings and also discouraging for the borrowers because the financial institution charging high interest rate. If the financial institution doing the same then it would reducing the saving confidence on depositor and borrower will try to avoid to borrow from financial institution. Which resulting in reducing the investments opportunities because the saving money not contributing to the economy. Financial system of developing countries showing larger spread difference as compare to the developed countries. Based on the balance sheet and profit & loss information the author derived two data base. One data base developed on basis of quarterly data from 1974-1988 and other on the basis of monthly data from 1991-1996. In the period 1974-1980 the spread between loan and deposits increasing steadily and then start decreasing during the period 1981-1988 reached to 19 percent and again decreased during the period of 1991-1996. The evidence provided by the author clearly suggest that the during 1974-1980 spread

increased and then during the 1981-1990 significantly decreased. This showed that the loan quality during the period remained stable and reserve ratio requirement decreased and consistent spreads and cost lower the productivity of the state bank.

A study of Maisal, Robert (1978) showed that “ financial markets is the degree and rapidity with which financial institution react to new information and shift funds among asset and liability classes so as to equalize marginal cost and returns. Many analysts assume that markets are efficient, that transaction and information costs are negligible or unimportant, and that borrowing and lending hedging and arbitrage are simple and available at or close to risk free rates. As a result, they believe that they can successfully predict the results of all types of markets actions and reactions without concern for institutional forces”. The financial markets are so efficient that they get rapidly information and on the basis of information they are making quick decision regarding the fund management such as assets, liability, cost and income. When all the information readily available then it reduces the cost and increase efficiency of transaction such as hedging and arbitrage without taking any risk on the basis of available information analyst predict their results of any market without considering the forces. The study conducted by author on the basis of cost and revenue of cross section banks during the period 1962-1975 estimation made on the basis of net rate of income and cost of book value of assets. The net rate is the difference between the gross revenue from assets minus cost of asset and rates are net of servicing, processing and overhead cost. The result showed that major

shift occurred during the period of 1970-1975. Net returns of assets considerably differ when computed on the basis of average.

The study of Demirgüç-Kunt, Harry (1999) showed the " differences in interest margins and bank profitability reflect a variety of determinants: bank characteristics, macroeconomic conditions, explicit and implicit bank taxation, deposit insurance regulation, overall financial structure, and underlying legal and institutional indicators. A larger ratio of bank assets to gross domestic product and a lower market concentration ratio lead to lower margins and profits, controlling for differences in bank activity, leverage, and the macroeconomic environment. Foreign banks have higher margins and profits than domestic banks in developing countries, while the opposite holds in industrial countries. Also, there is evidence that the corporate tax burden is fully passed onto bank customers, while higher reserve requirements are not, especially in developing countries". The study showed that variation between spreads and profitability comprised of various determinants. Such as economic conditions, regulations and financial structure. As the banks have a high ratio of asset with respect to gross domestic product and have small profit margin and banks profits. Because of debts and economic conditions. Foreign banks usually have greater margin of profits as compare to the local or domestic bank in the developing countries and different outcome for industrial countries. This study also evidence that corporate tax had a direct burden on the bank customer because bank transfer the tax burden to their customer while reserve requirement of central bank doesn't not have a significant effect on banks. The data collected at the level of

banks for 80 institutes and period comprised of 1988-1995 on the size and decomposition of banks spreads and profits. Regression technique had been used to find out the determinate of interest rate spreads and banks profitability. Taxation and regulation have big impact on bank customer and overall bank position. The banking system varies from country to country around the world in size and composition and structure. All banks have different influence of macroeconomic conditions, regulation and market conditions. Several countries data had been used for analysis to find out the bank characteristics and conditions which affect the banks performance such as interest margins and profitability. Some variable have positive relationship with each other and some of them have a negative relationship with each other i. e. reserve ratio to profitability.

The study of Samuelson Paul A, (1945) showed that the “ banking system as a whole is not really hurt by an increase in the whole complex of interest rates. It is left tremendously better off by such a change. If a bank were a university, nobody would doubt that it would be made better off by an increase in the interest rate. At worst, it could continue to hold all existing gilt-edge securities to maturity and be no worse off. As these matured, the proceeds could be invested at higher rates with a resulting increase in income. It would be better off in the sense that ceteris paribus it could hire more teachers per year, spend more money on buildings and stadia, and engage in more research. The only exception would be in the limiting and unrealistic case where all its money was invested in perpetuities. But even here it would be no worse off. In every other case it would be better off”. The

increase in the interest rates usually not affects the performance of bank, its actual effect on the borrower. When the interest rate increases then borrower will bear the effect of increase interest rate. But it would not affect the bank performance . The reason is that the bank pay low return to depositors and charge more to borrower as interest rate increases. So, both depositor and borrower will bear the cost. In this article author taken the example of university. If this loan given to the university it certainly impact on the university performance because of increase in the interest rates. As the interest rates increases it would become more costly for the university and difficult to pay to the bank on time. The increase in the interest rates would not hurt university as its decreases capital value. This change would have a better impact on university.

The study of Coleman George W, (1945) showed that the " banking system would recover these losses over a period of time, the length depending upon the maturity distribution. During that period, it would be " frozen in" to a given maturity pattern. The earnings of the banking system upon the existing portfolio would increase. He states that " immediately after interest rates have risen and capital values have scaled down, all parts of the portfolio, old as well as new, began to earn the higher rates". The rise in the interest rates bank can come up with some loss on the portfolio such as investing in the securities of longer period. The bank can recover this cost over the period of time and get desired returns and also increase in the capital of the bank. When the investment is carried at cost then it would amortize cost. It means banks amortize the investments over the period of

agreement until it becomes zero. When the interest rate rise it would have immediate effect and bank re-prices the portfolio on the current interest rate and gets benefit of the opportunity. The objective of the study to find that increase in interest rate would not a sufficient impact on banks. Its directly influence on the saver or borrower. Which ultimately result in decrease in saving and investment. The management of bank continuously monitoring and updating their portfolio policies to minimize such risk.

The study of Khawaja, Musleh, (2007) showed that “ Interest spread of the Pakistan’s banking industry has been on the rise for the last two years. The increase in interest spread discourages savings and investments on the one hand, and raises concerns on the effectiveness of bank lending channel of monetary policy on the other”. The interest rate spreads in banking sector on the upward move. When the interest rate increases its discourages the depositor and borrower. Such as saving and investments. Banks giving low returns to depositors which results in discouragement and getting high return from borrower by charging high interest rates inclusive of spreads. Spreads are much high in Pakistan. When spreads taken into account ultimately the interest increase and banks gets high returns on lending and investments. The depositor not has any other option to save his money and also the strict requirement of SBP capital requirement. The industry has rapidly merger and acquisition. This results in decrease in the option for saving. In this study author used data of 29 banks. Variant model had been used to check variables relationship. The results showed that inelasticity in deposits supply have positive impact on interest rate spreads. To lower the

spread margin central bank play a vital role to reduce the spread and other alternative would be the financial intermediary which lower the spreads.

The study of Chirwa, Montfort, (2004) highlighted the importance of " financial liberalization in facilitating economic development and growth. While there is no complete agreement on the removal of financial repression, usually characterized by control of interest rates, imposition of credit ceilings, and credit rationing, leads to significant amelioration of growth prospects, the dominant view is that financial liberalization and growth usually go together". Financial liberalization had a great influence on improving the economy and increasing growth. There is no certain agreement made on the financial repression. The management made certain tool and polices to control the interest rate impact on credits. Such as by applying tool of checking limits and there purpose of credit extension. The good control over the interest rate would have a significant on the performance of economy and growth of the country. Financial liberalization and growth of the economy work to gather and run head to head and boost the development of economy. The determinants of interest spread and bank profitability have been often used in the model. In portfolio choice bank trying to maximize their good portfolio. This maximizes the profitability of the banks. Bank usually made feasible choice of assets and liabilities with respective tenor interest rate. This study used monthly panel data from banking system between 1989-1999. the findings of that study showed that the after liberalization the interest rate significantly increased. The main

cause of that increase was the increase in nonfinancial cost, provision for doubtful debts, taxation and variation in the inflation rates.

The study of Marisel Peter, (2002) showed that in the " world of endogenous money, the central bank's role in monetary policy is reduced to the setting of a very short term official rate of interest, which indicates the price at which it will make liquidity available to the banking system. However; it is changes in market rates that affect behavior; and so the ability of the central bank to influence anything at all depends, first, on the interaction between official and market rates. In this paper, we use a vector autogressive error correction model to explore the response to changes in the central bank rate of three short-term market rates that have been featured previously in this journal in debates about the demand for endogenous money". The main responsibility of the state bank is to control or reduce the rates which affect the price and liquidity of the banking system and affect the availability of liquidity of the banking organizations. The fluctuation in the market interest rates will affect the function of the banking system and as well as the behavior of the consumer and economy. In this study autoregressive correction model had been used by the author to find out the responses of interest rates changes and its effect. When spread between Corporate – Government bond increases then the market assume that the risk on the bond increases. When they see then they try to predict the coming slowdown and recession in the economy. After testing they have found that it would have a positive effect on the economy. They have used the Autoregressive model to test the fluctuation in prices and interest rates. The result of the

paper showed that the short term interest rates have a significant impact on the banking system as compare to the long term interest rates. Short term interest rates were the major instrument of the monetary policy of the central bank. In monetary policy central bank advice the interest rates which would affect the banking system as well as the overall economic activities of the country.

2. 1: Chapter Summary

The impacts of interest rate changes have a significant impact on the bank profitability. When interest rate changes it would result in increase or decrease in the interest income. The Pakistan banking industry use Karachi Interbank Offered Rate (KIBOR) for earning assets to find out the interest income. The major portfolio reprice on 6 M KIBOR. Bank is exposing to interest rate risk. But usually bank hedge against interest rate risk to minimize its impact on bank performance. The major impact of interest rate changes would affect the depositors and borrowers. Because when interest rate changes it would discourage the saving and investment decision.