



Interest Rate and Its Effect on Bank's Profitability

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ABSTRACT

The study conducted to check and examine the market interest rate effect on the bank's profitability in public and private sectors of Pakistan. For the better understanding of effects, the sample was divided into two categories. 1) Public sector banks: Comprises of four nationalized banks and 2) Private sector banks: contains six private sector banks for the study. The Islamic banks were not included in the sample. Bank lending rates were taken as a proxy for interest rate while Return on Assets (ROA) and Return on equity (ROE) were taken as a profitability of the banks. The regression model was used in the study to witness the effects of interest rate on profitability. The results show that the interest rate has more effects on both ROA and ROE in private banks as compared to the public sector banks.

KEYWORDS: Interest rate, ROA, ROE, private sector, public sector

INTRODUCTION

Interest is considered to be very phenomenal factor in financial market. In today's market of liberalization, the worldwide financial markets have led to enhance the volatility in the global economy. Consequently a numerous researchers, practitioners and policy makers have keen interest in the impact of bank profitability and rate fluctuations. The evaluation of trade off among the stability of the market rate of interest and policies becomes more expected. Beside this type of evaluation, different policies makers would be able to put suitable weight of the interest rate strategies, with other links. As a result, the discussed paper examines the interest rate effect on bank's profitability in the Pakistan banking sector by using regression technique (2008-2012).

The increased volatility of the company's market interest rate is caused by the changed in unexpected interest rate and is the major contributor in financial market. According to English (2002), to measure the effect of changes in bank's profitability, it is mandatory to evaluate and asses the overall fluctuations of interest rate on the economy and to depict the implications of interest rate on cash flow. According to our research area (Pakistan), the study focuses the overall impact of interest rate on commercial bank's profitability by using regression techniques.

LITERATURE REVIEW

In early literature, the interest rate was normally used to expose the bank's financial position. The net interest margin rate of the banks is very sensitive to fluctuate. According to Shiller and McCulloch (1987) and Samuelson (1945) the general market situation, the bank's profit increase rapidly with increase in interest rate of banks. Samuelson (1945) stated "The banking system as a whole is immensely assisted rather than hindered by an increase in the interest rate and commercial banks would profit more than savings banks". In the same way, Hancock (1985) originated a very relevant proof for the study when they observed that with the enhancement of interest rate, the output and employment reduce even at the level of collective.

Ben Naceur and Goaid (2008) observed the impact of particular variables associated to commercial banks of Tunisia in addition to macroeconomic indicators along with effect of financial structure on banks profitability in Tunisia from 1980-2000. They concluded that Capital ratio has positive and size has negative effect on Profitability. There exists little or zero effect of macro-economic components on the profitability of banks in Tunisia. Advancement in money markets has posted positive effect since banks in Middle East and North Africa countries have developed their income through the income generated from the intermediation and the administration of arrangement of stock that compensates the reduced margin to compare the ownership structure (Naceur and Omran, 2011). In the same way, (Sufian and Habibullah, 2009) posit that privately owned banks perform superior as contrasted with publically owned banks.

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Athanasoglou et al. (2008) examined the impact of bank's inside components, industry related elements identified with macro economy on the productivity of banks in Greek amid 1985-2001. The evaluated results demonstrated that capital, credit risk, working exp , inflation and manufacturing development, business cycle (cyclical yield) have the positive and also huge impact, where as there is a negative impact of size on the banks' profitability (Delis and Kouretas, 2011).

The bank's sensitivity with net interest margin, profitability and term structure set across product specializations. Hanweck and Ryu (2005) examined that the changes of interest rate are most sensitive with bank's portfolios which are related to the net interest margin. According to finding of Basel Committee on Banking Supervision (2004), the changes in net interest margin are negatively related to the interest rate volatility but it will show positive result because of the increase in yield curve. The scale of the effect depends upon the assets and liabilities composition.

Dietrich and Wanzenried (2011) examined the effect of profitability components (industry particular, macroeconomic & banks particular) before and after emergency in Switzerland amid 1999-2009 for 372 business banks. It was viewed as that from 1999-2006 was pre-crisis time and 2007-2009 was well thought-out to be as emergency time , averages of ROA, ROE and Net interest margin have been used as profitability indicators as average values are utilized to catch the progressions amid the time. By utilizing GMM estimator method, it was reasoned that banks which are equipped demonstrate lofty profitability as contrasted with less capable banks, development in credit volume that is over the normal, influences decidedly on profitability (Ramadan et al., 2011). There is negative effect of advanced financing expenses and positive effect of diversification on banks profitability.

Sufian (2011) stated the effect of banks inside aspects and macroeconomic components on the banks' profitability during 1992-2003 in Korea. Liquidity has negative effect on banks profitability with minor liquidity level, to establish superior profitability. Banks who focused more towards diversification has positive effect on profitability. Size depicted positive where as there is a negative effect of financial crisis on the profitability of Korean banks. Banks in Korea showed extra profitability during the period of before-crisis as compared to after-crisis.

As reveals in the study of English (2002) and Hanweck and Ryu (2005), the fluctuations of the interest rate have significant effect on bank's net income incurred by interest. Furthermore, slope of the yield curve also have a positive impact and it is a most famous over view in the financial market observation including. The short term interest rate is closely related to the return on the bank's liabilities which will quickly adjust with the changes by interest rate in financial market. With that part of the discussion, returns on assets of the bank are more likely to be closed with long term interest rate and slowly get adjusted with the changes in the market rate. In the sustaining period, when the yield curve is steeper, one can expect the net interest margin to be higher.

Moreover given the slope of yield curve, whenever there happens an increase in short and long term interest rate is always subjected to reduce the income for the time being, signifies that the maximum adjustment of the asset and liability yields. According to the study of English (2002) the margin of net interest of commercial banks and rates of market interest found supportive in the view of relationship among the slope of the curve and market interest rate on net interest margin of the banks.

Saunders and Schumacher (2000), experienced the dealer model on countries in Europe and United States, 614 banks were taken up for data as sample size for 1988 to 1995 as sample period. Across the countries the volatility, interest rate and regulatory requirements have positive effects on bank's net interest margin.

METHODOLOGY

Sample:

The banking sector of Pakistan is the population of the study. The sample is divided into two categories i.e. Public sector Banks; First Women Bank, National Bank of Pakistan, The Bank of Khyber and The Bank of Panjab were taken in the sample. The second is Private sector banks; Allied Bank, Bank Al Habib, Bank Al Falah, Askari Bank, Faysal Bank and Habib Bank were taken from the private banking sector.

Variables:

Return on Assets:

The return on assets is treated as the dependent variable of the study. The return on assets has been calculated by the following equation:

$$ROA = \frac{Net\ Income}{Total\ Assets}$$

Return on Equity:

The return on equity is also the second dependent variable of the study. The variable is calculated by the following equation:

$$ROA = \frac{Net\ Income}{Shareholder\ equity}$$

Hypothesis

H₁: The interest rate has a significant effect on return on assets of the bank.

H₂: The interest rate has a significant effect on return on equity of the bank.

Public Sector Banks:

Table 1: Regression analysis of Interest Rate and Return on assets

	Return on Assets					
	B	T-value	F-statistics	P-value	R ²	R
Constant	.812	2.129		.012		
Interest Rate	.873	7.604	51.993	.000	.251	.449

The above table shows the regression results of interest rate and return on assets of public sector banks. The value of β for interest rate is .873, which means that 1 unit change in the dependent variable will lead to change about .873 unit change in the independent variable. The f-statistics value is 51.993 which is shows that the model is highly significant. The standard for f-statistics is 4. If the value is less than 4 then the model should be change and if more than 4, then the model is feasible for the study. The p-value of interest rate is 0.000, which shows that the interest rate has a significant effect on return on assets of the public sector banks in Pakistan. The value of R² is .251, it means that in Pakistan public sector banks, the interest rate have 25 percent effects on return on assets. The profitability of public sector Pakistani banks is affected about 25 percent by the changes in the interest rate in the market. The value of R is .449, means that interest rate and return on assets are 45 percent correlated to each other.

Table 2: Regression analysis of Interest Rate and Return on equity

	Return on Equity					
	B	T-value	F-statistics	P-value	R ²	R
Constant	2.444	6.385		.000		
Interest Rate	.344	4.665	22.568	.000	.138	.398

The above table shows the regression results of interest rate and return on assets of public sector banks. The value of β for interest rate is .344, which means that 1 unit change in the dependent variable will lead to change about .344 unit change in the independent variable. The f-statistics value is 22.568 which is shows that the model is highly significant. The standard for f-statistics is 4. If the value is less than 4 then the model should be change and if more than 4, then the model is feasible for the study. The p-value of interest rate is 0.000, which shows that the interest rate has a significant effect on return on assets of the public sector banks in Pakistan. The value of R² is .138, it means that in Pakistan public sector banks, the interest rate have 14 percent effects on return on assets. The profitability of public sector Pakistani banks is affected about 14 percent by the changes in the interest rate in the market. The value of R is .398, means that interest rate and return on assets are 40 percent correlated to each other.

Private Sector Banks

Table 3: Regression analysis of Interest Rae and Return on assets

	Return on Assets					
	B	T-value	F-statistics	P-value	R ²	R
Constant	1.471	6.116		.000		
Interest Rate	.608	9.455	91.042	.000	.344	.515

The above table shows the regression results of interest rate and return on assets of public sector banks. The value of β for interest rate is .608, which means that 1 unit change in the dependent variable will lead to change about .608 unit change in the independent variable. The f-statistics value is 91.042 which is shows that the model is highly significant. The standard for f-statistics is 4. If the value is less than 4 then the model should be change and if more than 4, then the model is feasible for the study. The p-value of interest rate is 0.000, which shows that the interest rate has a significant effect on return on assets of the private sector banks in Pakistan. The value of R^2 is .344, it means that in Pakistan private sector banks, the interest rate have 34 percent effects on return on assets. The profitability of private sector Pakistani banks is affected about 34 percent by the changes in the interest rate in the market. The value of R is .515, means that interest rate and return on assets are 52 percent correlated to each other.

Table 4: Regression analysis of Interest Rae and Return on equity

	Return on equity					
	B	T-value	F-statistics	P-value	R ²	R
Constant	2.421	11.125		.000		
Interest Rate	.362	6.469	41.171	.000	.192	.413

The above table shows the regression results of interest rate and return on assets of public sector banks. The value of β for interest rate is .362, which means that 1 unit change in the dependent variable will lead to change about .362 unit change in the independent variable. The f-statistics value is 41.171 which is shows that the model is highly significant. The standard for f-statistics is 4. If the value is less than 4 then the model should be change and if more than 4, then the model is feasible for the study. The p-value of interest rate is 0.000, which shows that the interest rate has a significant effect on return on assets of the private sector banks in Pakistan. The value of R^2 is .192, it means that in Pakistan private sector banks, the interest rate have 19 percent effects on return on assets. The profitability of private sector Pakistani banks is affected about 19 percent by the changes in the interest rate in the market. The value of R is .413, means that interest rate and return on assets are 41 percent correlated to each other.

Conclusion

The objective of this research paper was to analyze the effect of interest rate in the market and its effects on the profitability. The study sample was divided into two group i.e. public sector banks and private sector banks. The regression results for public sector shows that the interest rate has significant effects on the profitability (ROA) in the public sector banks of Pakistan (Alternate accepted). The value of R2 shows that in case of public sector banks the interest rate effect the profitability (ROA) about 25 percent. In the case of return on equity (ROE) in public sector, the interest rate has significant effects on profitability (Alternate accepted). But in case of ROE the interest rate only affect 14 percent the profitability. In private sector banks the interest rate has significant effect on their return on asset (ROA). But here the R^2 value is very big than as in public sector banks. The R^2 value for ROA in private banks is 34 percent which is high than public sector bank's ROA. In ROE of private banks the interest rate affects significantly the profitability about 19 percent. We can conclude that in both different proxy of profitability in both public and private sector, the interest rate affect the private sector the most.

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