CAPITAL & EARNINGS MANAGEMENT: EVIDENCE FROM THE BANKING SECTOR OF PAKISTAN

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ABSTRACT

This paper examines the relationship of loan loss provisions with the capital and earnings management in the banking sector of Pakistan. The study applies the Clustered Robust Linear Regression while examining the panel models when the data had heteroscedasticity and autocorrelation in it. This regression is used to remove the effects of these disturbances from the dataset. The study targets 25 banks (Islamic and commercial banks) from the banking sector of Pakistan. Descriptive analysis showed that the banks are engaged in the use of loan loss provisions for their capital and earnings management practices. The results of Clustered Robust Linear Regression showed a significant relationship of Tier1 and EBTLLP on the dependent variable LLP. This significant relationship depicts the strong influence of loan loss provisions (LLPs) on the capital and earnings management of the banks in Pakistan. In further research perspective, the time duration of the study can be extended, and more variables can be added. It can also include a comparative study amongst different banks in Pakistan.

Keywords: Commercial banks, Islamic banks, Panel regression, Earning management, Pakistan

1. Introduction

The various ways of financial reporting standards and disclosure of financial information are the key elements that make one bank different from the other. The use of loan loss provision is tested in Islamic as well as commercial banks of Pakistan. Loan loss provisions act as a cushion against the non-performing loans and advances. Banks use this model to manage their regulatory capital and earnings requirements. (Messai & Jouini, 2013).

Moreover, the LLPs also result in high agency costs for the banks. The banks manipulate their earnings so that they can show a positive picture regarding their performance. By applying different accounting standards, banks can do this to attract maximum number of investors and enhance their profitability. This practice is very common in the banking sector. Earnings management of a bank involves hiding of losses, increase of profits and even sometimes not disclosing the complete set of information regarding a particular transaction. Loan loss provision is a standard accounting adjustment that is consistently used by the banks to incorporate the fluctuating forecasts for the losses caused by the lending process. The study is done to examine the use of LLP's in the banking sector of Pakistan. Loan loss provisions are normally made to upgrade the estimates and calculations based on figures for the bank's consumer defaults. These estimates are calculated on the basis of average historic default rates by various ranks of debtors. It is an important tool for the banks to measure and examine their loan portfolios, to save themselves from the risk of default and scrutinize all the other matters related to lending practices. The capital and earnings management practices in the banks is an important aspect to study as it gives a great insight of how the banks function and manage their profits and losses. Basically, the purpose of LLP is to manage the loan loss reserves of the banks in order to reflect predicted futures defaults and losses on their loan portfolios. The bank managers also have motivations to utilize the loss provisions of loans for the purpose of managing the capital and earnings of the banks as well as to connect or signal confidential material regarding the forthcoming events. The objective of this study is to examine the relationship of loan loss provisions with the capital and earnings management with relevance to the Islamic and commercial banks of Pakistan. The use of loan loss provision in Islamic and commercial banks and the extent to which the banks use LLP in managing their earnings and capital requirements.

2. Literature Review

The study is about the distinct capital and earnings management characteristics and behavior persisting in the conventional and Islamic banks of Pakistan through the use of LLP's (Loan Loss Provision). The evidence from relevant literature is examined. Loan loss provisions are considered as an instrument by the bank managers for reflecting the expected losses. Though, the security regulators and federal banks diagnose that the provisions are not enough to match the actual incurred losses accurately and it may include some margin for inaccuracy. This margin for inaccuracy is used by banks for exploitation. Some previous researchers, mostly the ones who concentrated on the institutions situated in the Europe and United States, established that around one segment or another, LLPs were utilized as an instrument for earnings management, for capital management and for the purpose of signaling future objectives to the stock market (Curcio & Hasan, 2015).

Since the last few years, some of the renowned business bodies faced an abrupt collapse i.e. WorldCom (USA), Enron (USA), Bank of Credit and Commercial International (UK) and Subprime Mortgage (USA). As a result of this, studies have started focusing more on the topic of earnings management. In the studies done by several legislative governing bodies and researchers, it is figured out that the presence of earnings management practices and fragile corporate regulatory systems are primary aspects that direct towards the flagging of the monetary health of the corporations. This ultimately results in their downfall. While making use of alternative accounting practices, it has been observed that the managers use discretion which is generally (Prity Kumari, 2017).

Earnings management is only achievable at the expense of management of risk and vice versa. (Moyer, 1990) studies in the field of capital management into the ones that investigated the linkage prior to the capital adequacy regulation alteration and also the ones that investigated the connection after said modification. Before 1989, an enticement was there to deploy LLPs in order to develop the capital adequacy ratio. Conversely, those studies that observed the process of utilization of LLPs in banks during this time period, generated contradictory results.

In the studies related to capital and earnings management, there do exists a consensus LLPs are an important tool utilized for managing earnings however, the empirical evidences do not always agree to the hypothesis of capital management. Recent research states that the impact

of 2008 financial crisis on the excellence of financial reporting especially in capital and earnings management has reduced the financial distortion. According to economists, this crisis offers a perfect arrangement to examine bank managers' discretion related to reporting choices for economic stability and risk taking (Inês Pinto, 2017).

Laeven and Majnoni (2003) inspected the usage of LLPs and additional related elements for capital management. They figured out that banks made use of LLPs through inflation reserves for loan losses, when the capital levels were near to ruin the minimum capital regulations. They failed to obtain significant relation with other elements, which may include the charge-offs.

Shawtari, Saiti, Razak, and Ariff (2015) surveyed whether LLPs were utilized as an instrument to diminish instability of earnings by banks. It was also stated that, the loan charge-offs and LLPs both were together used for the purpose of income smoothing by banks. It scrutinized whether, in accumulation to LLPs, other instruments like loan charge-offs and issuances of securities were utilized for earnings management. A positive relationship was seen only between the earnings management and loan loss provisions, and determined that other elements were utilized particularly for capital management.

Many studies observed that the returns obtained from the stocks showed a negative relationship with the normal LLPs and positive relationship with the abnormal LLPs. In contrast to this, other studies concluded that LLPs are not utilized for the signaling purpose. They observed a negative relationship in between the LLPs and the forthcoming earnings for both the total sum of loan loss provisions and for the non-discretionary necessities. Evidence was also found that was contradictory in contrast to the conclusion of a positive linkage between the equity's market value and the discretionary LLPs studied by (Fonseca & Gonzalez, 2008).

The success of manufacturing companies greatly depends upon the capability of financial managers to efficiently manage the working capital components. The skill of balancing company's liquidity and profitability frequently commands the success or failure of a corporation contingent to how well is the management of disposable resources and how much judicious a corporation is in treating operational obstacles. The organizations must optimize their levels in order to preserve sustainable revenues on their investments. Directors of manufacturing companies have an incentive to report efficient working capital management to depositors. This

can result in earnings management particularly, when they work with the purpose of accomplishing the aforesaid objective (Ongoro, 2020).

Conversely, (Anandarajan, Hasan, & Lozano-Vivas, 2003) finds no proof of capital management behavior as mentioned previously. The information which was used to carry out these studies was before the Basel I accord. (Bouvatier & Lepetit, 2008) inspected if LLPs were utilized for the management of capital adequacy ratios after the employment of the Basel I accord and found evidence of the presence of capital management making use of loan loss provisions. Henceforth, on the whole, the outcome seems to be convincing that banks, exclusively after the execution of Basel Accord I did not participate in capital management behavior utilizing LLPs because of the restraints enforced by the Accord. Though, reasons for capital management are still existent and it might also be a strong and powerful incentive for banks which are bearing larger costs due to the violation of the capital needs. Subsequently, it is assumed that banks with moderately increased costs of violating the least requirements of the capital will have to get themselves engaged in more amount of capital management. The risk-based least capital needs of the bank tend to have a pro-cyclical influence on the economy of the country (Packer & Zhu, 2012).

Jacques (2010) The pro-cyclic effects which are linked with the risk-based capital have been an important point of concern in the current argument regarding the newly introduced capital requirements of bank. The decline in the asset quality of banks during periods of recurring depressions, basically, needs advanced level of provisions and might cause the capital to fall below the minimal requirements just when the capital is much expensive or merely inaccessible for weak institutions.

When the banks accounting for a greater portion of entire lending towards the economy face the capital shortages, the resulting credit reduction may have universal inferences. This paper recommends that cyclic deficiencies of capital of banks might not only be because of the risk based system of banks capital regulation, but most obviously due to the shortage of risk based regulation of loan loss provisioning practices of the banks (Pennacchi, 1988; Zhu, 2007).

Anandarajan, Hasan, and McCarthy (2007) It can be shown that a loan loss provision management is comprehensible with an upsurge of loan loss reserves during good times and a

decline in bad times lessens the profit unpredictability of banks and the likelihood of a negative jolt to the monetary capital.

Generally, banks have the capacity to smooth their profits by drawing from the loan loss reserves if the actual quantity of losses cross the anticipated losses and by contributing supplementary loan loss provisions to the loan loss reserves if the quantity of actual losses is less than the forecasted losses (Rivard, Bland, & Morris, 2003).

The benefit of income smoothing process is that it lessens the volatility of stated bank revenues and decreases the probability that they bank might have to eat into its capital. With flawless income smoothing, earnings are negligible or very little affected by the variations of credit losses over the cycle. This is realized that when loan loss provisions reimburse for the difference amongst realized credit losses and average amount of credit losses by taking positive values at the periods of cyclical growths and negative values during declines. As an outcome for this, it is concluded that the loan loss reserves increase in good times and reduce in bad times. It is also argued that the gain behind the income smoothing is that the bank is able to attain a completer capital management, since forecasted loan losses no more disturbs the bank capital (Liu & Ryan, 2006).

Cavallo and Majnoni (2002) hypothesize and figures out that the response of market towards the LLPs is optimistic (negative) in nature for banks comprising of higher (lower) quantities of big and often renegotiated loans and also that the market prediction related to loan loss provisions is more negative and further in advance of the provision for those banks having a greater quantity of renegotiated loans which are large and recurring in nature.

In fact, banks having a sufficiently higher percentage of big and repeatedly renegotiated loans, the sign of the market reaction towards the provisions for loan loss is opposite as compared to the sign of market anticipation of loan loss provisions. The market reaction is ruled by the good news and the market anticipation is dominated by the bad news, conveyed by the loan loss provision. (Greenawalt & Sinkey, 1988)

3. Data Methodology

The banking industry in Pakistan is not only limited to commercial and Islamic banks but it also includes various other banks including private and public sector banks, development banks,

government banks and some others. For the purpose of this study, the target area is the commercial and Islamic banks currently operating in Pakistan. At present, there are 22 commercial banks and 4 Islamic banks in the country. Convenience sampling is done for this study. The number of Islamic banks was more in the past but with the passage of time these banks got merged with some other banks. So, there is a total of 25 banks which includes both the Islamic and commercial banks that are currently working in Pakistan. Out of this 25, some of them are listed and some of them are unlisted. The time period under consideration is from 2010 to 2017. During this period, the financial performance of the banks is reviewed.

The variable LLP (loan loss provisions) was used as a dependent variable and TIER 1, ΔNPL, ΔLOANs, EBTLLP, LEV, GDP (control variable) are used as independent variables. It also includes LISTING and IB as the dummy variables.

The study analyses the capital and earnings management practices in commercial and Islamic banks of Pakistan. The panel data regression has been used in this study by gathering information regarding the banks operating in Pakistan. This study investigates the relationship between the banks financial performance based on its management of loan portfolios and the loan loss provisions variables. The research equation to be used is as follows:

$$LLP_{i,t} = \beta_0 + B_1\ TIER\ 1_{i,t-1} + B_2\ EBTLLP_{i,t} + \beta_3\ \Delta NPL_{i,t} + \beta_4\ \Delta LOANS_{i,t} + \beta_5 LISTING_{i,t} + \beta_6\ LEV_{i,t} + \beta_7\ GDP_{j,t} + \beta_8 IB_{i} + \beta_9 \sum_{t=2010}^{2017} T_t + \varepsilon_{it}$$

Where,

Loan loss provisions (LLP) is normalized by using total assets. It is basically an expense set aside by the banks to act as a cushion against the loan payments and uncollected loans. It helps in covering a number of factors linked with the potential loan losses which may include bad debts, customer defaults, delayed or missing payments of loan and much more. LLP is used as a dependent variable to test its impact upon other independent variables.

Tier 1 ratio is the ratio of the entire bank's capital to its risk weighted assets. It is used as a significant measure for examining the financial performance of the banks. The core equity capital of a bank comprises of all the assets a bank holds which are methodically weighted for their credit risk. The tier 1 capital is the primary capital of a bank and it is the sum of retained earnings, common stock of a bank, book value of equity, non-cumulative perpetual preferred stock any regulatory amendments to those accounts. A lagged value of this variable is used in the

study as proposed by (Ahmed, Takeda, & Thomas, 1999) to signal the availability of a capital buffer for the purpose of increasing LLP.

Earnings before taxes and LLP (EBTLLP) is used to analyze the banks capability that how it utilizes its assets to produce revenues in advance of loan loss provision and its predetermined liabilities. If the wish for income smoothing is an essential element of LLP, then it will have a positive impact on banks and a positive relationship will be observed between the two variables, EBTLLP and LLP (Anandarajan et al., 2007).

Non-performing loans (ΔNPL) is the change observed in the value of the loan that are placed under the non-performing status due to their missing payments. Change in NPL is also used as a proxy for the default risk. According to (Ahmed et al., 1999; Jacques, 2010) it is classified as a non-discretionary element of LLP. This variable is expected to have a positive impact on the bank's LLPs as an increase in the value of loan portfolio improves the relative degree and appropriateness of LLP (Fonseca & Gonzalez, 2008).

ΔLOANS represents the change in the amount of total loans. It is a control measure for the alterations in the lending profile of a bank. This variable is also expected to have positive coefficients as it is also a non-discretionary element of LLP. Both change in NPL and change in the total loans move side by side, therefore an increase in the value of total outstanding loans results in the increased size and suitability of loan loss provisions (Fonseca & Gonzalez, 2008). LISTING is a dummy variable used for determining the listing status of the banks. It uses the values of 0 or 1 for this purpose, indicating the unlisted banks with 0 and listed banks with 1. The listing status of a bank is essential as it reports a positive and significant relationship with the accounting operations (Laeven & Majnoni, 2003).

LEV is for the leverage ratio which is basically the total debt to total common equity ratio. This ratio determines the extent to which a bank's possible capital saving is influenced by minimizing risks. (Kiema & Jokivuolle, 2014). GDP (Gross Domestic Variable) is known as a macroeconomic variable and defined as the annual growth rate of national income. It is used to determine the soundness of the financial system. According to the expectations, GDP shows a negative and significant relationship to the LLP. This is evident from the findings reported by (Shawtari et al., 2015) who figured out that at the time of financial boom, the value of LLP was lower as compared during the periods of financial difficulties (Leventis, Dimitropoulos, &

Anandarajan, 2011). IB is a dummy variable used to determine the bank type. The value of 0 is used to denote commercial banks and 1 is used to denote the Islamic banks. All the variables are normalized by using the value of total assets of the banks at the beginning of the year t. Clustered Robust linear regression is used in the presence of heteroscedasticity and autocorrelation in the data set. The Robust standard errors are used to estimate the panel models. (Torres-Reyna, 2007) It is used to remove the effects of heteroscedasticity and autocorrelation.

3.1 Hypothesis Development

To test the relationship of capital and earnings management practices in banks through the usage of loan loss provisions, two basic hypotheses are developed in order to examine the significance amongst the Islamic and commercial banks of Pakistan.

Capital management hypothesis

Incentives for capital management through the use of LLPs can be credited to the motivation to enhance or to conserve the tier 1 capital ratio (capital adequacy) with the purpose to evade official capital burdens in case if the level of a bank's regulatory capital drops below the minimal regulatory needs. Previous studies in banking system, shows contradictory results regarding the ways how banks made use of LLPs in order to achieve their level of regulatory capital. (Moyer, 1990) and (Rochet, 1992) figure out that banks make use of their own discretion regarding the use of LLP at the time when levels of capital are near to violate the minimal capital needs of the bank. (Leventis et al., 2011) depicts that LLPs and loan charge-offs both are utilized for the management of capital. According to (Pérez, Salas-Fumas, & Saurina, 2008) it is also seen that managers make use of discretion in order to manipulate the level of LLP down to satisfy the regulatory capital needs. For both kinds of banks facing the issues of capital inadequacy, there is a common motivation to involve in handling via LLP, which recommends a positive relationship amongst the capital adequacy ratio and LLPs (Ahmed et al., 1999; Anandarajan et al., 2007; Leventis et al., 2011).

Therefore, the capital management hypothesis states:

H_{01}: There is a relationship between the capital management of banks and loan loss provisions.

Earnings management hypothesis

One of the implications of agency theory states that the bank managers can improve the company's performance and attain administrative rewards by means of utilizing LLP in the income smoothing process. An alternative solid motive for the usage of LLPs for the purpose of earnings management is that fewer amount of instable earnings are essential forecasters of steady prices of shares (Anandarajan et al., 2007). According to (Greenawalt & Sinkey, 1988), the managers of bank can donate extra amount of LLP to loan loss reserves during the expansionary eras while smoothing the level of earnings in declining periods, so that the instability of stated earnings can be minimized. Evidence of parallel behavior has been figured out in international studies of banks (Ahmed et al., 1999; Collins, Shackelford, & Wahlen, 1995; Fonseca & Gonzalez, 2008; Leventis et al., 2011; Pérez et al., 2008). It is also observed that both the types of banks do make use of LLPs for smoothing of earnings. In broad terms, if earnings management is viewed as an essential element of LLP, a substantial positive relationship is predicted amongst the earnings (before taxes and LLP) and LLP (loan loss provisions).

Therefore, the earnings hypothesis states:

H_{02}: There is a relationship between the earnings management of banks and loan loss provisions.

4. Results

The dataset used in the study is the unbalanced panel dataset. The following tables shows the descriptive and other tests performed on the dataset in order to give a better understanding of the model.

Table 4.1: Descriptive Statistics

Variables	Mean	Median	Std.Dev	Min	Max
LLP	0.060	0.038	0.111	0.000	0.992
GDP	0.042	0.047	0.013	0.016	0.057
EBTLLP	0.067	0.050	0.102	0.003	0.941
ΔLoans	0.065	0.049	0.085	-0.070	0.531
Tier1Ratio	0.146	0.118	0.089	-0.031	0.569
ΔNPL	0.000	0.000	0.000	-0.001	0.003
Listing	0.83	1	0.377	0	1
IB	0.16	0	0.368	0	1
Lev	34.738	23.605	32.485	1.520	162.958

The descriptive statistics involves shaping and summarizing the data in a way so that it is easily understandable. It helps in describing the basic features of the dataset. The table 4.1

reports the descriptive statistics for all the dependent and independent variables. Mean shows the average of the dataset. LLP, which is the dependent variable shows an average of 6% ranging from 0% to 9.2% whereas the standard deviation is 1.1% which shows the variation of the data from the mean. Since this value is low so it specifies that data points tend to be very close to the mean value. An average of 4.2% is reported for the macroeconomic variable of GDP. The columns of minimum and maximum represents the smallest and largest value in the dataset.

The other two variables Tier1Ratio and EBTLLP report the averages of 14.6% and 6.7% respectively. The exceeding ratio of Tier1 indicates that the banks included in this sample are well capitalized and most of them can be categorized as profitable banks which is a good sign. The average value of change in total loans given by the banks is 6.5% from -7% being the minimum and 53.1% being the maximum percentage. Whereas talking about the change in non-performing loans, the average mean value for this variable is 0% ranging from -0.1% to 0.3%. The variation from the mean is also 0% in this case. The table reports an average of 34.7% for the leverage ratio and a standard deviation of 32.4%, which is used to determine the degree upto which the data is spread out to the mean. Lastly, there are also two dummy variables used for the bank type and listing status of the banks. The dummy variable IB shows an average of 16% and listing reports an average of 83%. Since both of these are dummies, therefore the values of their minimum and maximum range from 0% to 1% respectively.

Table 4.2: Correlation matrix for variables

	LLP	GDP	EBTLLP	ΔLoans	Tier1Ratio	ΔNPL	Listing	IB	Lev
LLP	1								
GDP	0.022	1							
EBTLLP	0.988	0.029	1						
ΔLoans	-0.136	-0.051	-0.176	1					
Tier1Ratio	0.048	-0.023	0.061	0.018	1				
ΔNPL	0.024	-0.048	-0.005	-0.037	-0.089	1			
Listing	-0.286	-0.101	-0.264	-0.057	-0.288	-0.006	1		
IB	-0.158	0.007	-0.166	0.296	-0.047	0.062	-0.364	1	
Lev	-0.181	0.140	-0.148	-0.156	-0.229	-0.074	0.346	-0.210	1

General relationships amongst the variables can be observed from the correlation matrix. It is obvious that every variable will show a perfect correlation (table 4.2) when compared with

itself. The variables GDP, EBTLLP, Tier1Ratio and ΔNPL show a positive correlation with the dependent variable LLP whereas the variables ΔLoans, Listing, IB and Lev show a negative correlation with LLP. GDP, which is a macroeconomic variable has a positive correlation with the variables EBTLLP, IB and lev and a negative correlation with ΔLoans, Tier1ratio, ΔNPL and listing. EBTLLP shows a positive correlation with Tier1Ratio and a negative correlation with all the other variables. The variable ΔLoans has a positive correlation with Tier1Ratio and IB and a negative correlation with ΔNPL, dummy varibale of listing and leverage ratio. Tier1ratio shows a negative correlation with all the variables. ΔNPL shows a negative value with listing and lev and a positive correlation with IB. The variable leverage ratio and listing shows a negative correlation coefficient with the bank type dummy variable. The positive and negative signs with these variables represents the direction of the relationship of correlation coefficients. The variables showing a positive correlation depicts that with the increase in the value of one variable also causes an increase in the value of other variable whereas, the negative coeffeicients indicate that when the value of one variable increases, a downward trend is observed in the value of the other variable.

Table 4.3: Clustered Robust Linear Regression

	Coef.	Std. Err.	T	P>|t|
GDP	-0.019	0.097	-0.20	0.843
EBTLLP	1.073	0.013	85.35	0.000
ΔLoans	0.052	0.032	1.60	0.111
Tier1Ratio	-0.035	0.015	-2.33	0.021
ΔNPL	8.680	4.941	1.76	0.081
Listing	-0.010	0.004	-2.79	0.006
IB	-0.009	0.004	-2.21	0.028
Lev	-0.000	0.000	-2.62	0.010
_cons	0.004	0.006	0.59	0.553
Durbin Watson	0.821			

Evidence from (Torres-Reyna, 2007) shows the use of clustered robust standard errors when the data had autocorrelation and heteroscedasticity for estimating the Panel Models. The cluster command is applied after the regression for this model. The table 4.3 shows the results after applying the cluster command to remove autocorrelation and heteroscedasticity from the dataset. The table 4.3 shows the value of durbin watson which is 0.821, less than 2 and lies between the range of 0 to 2. This indicates the presence of a postive autocorrelation in the dataset. The figure

1 in appendix is a scatter plot which is used to detect heteroskedasticity. Since the data points are not scattered rather they are more gathered near the reference line therefore it indicates that the data is heteroskedastic. For this reason, clustered robust estimation methods are used to control and avoid the effects of autocorrelation (also known as serial correlation) and heteroskedasticity. The two tail p-values examine the significance of variables at 1%, 5%, and 10% respectively. According to the results, the p values of variables EBTLLP, ΔLoans, Tier1Ratio, Listing, IB and Lev are less than 0.05 which shows that their relationship is significant with the dependent variable LLP at 5% and they have a greater influence on it. The variable ΔNPL has a p-value of 0.081 which is significant at 10%, hence showing a significant relationship with LLP. The variable GDP having value 0.843 > 0.05 shows an insignificant relationship with the dependent variable.

Now the results are robust with no autocorrelation and heteroscedasticity in the dataset. The value of F statistic is 0.000 which depicts that overall the model is good and fit. It can be seen that only GDP shows an insignificant relationship with LLP and all the other variables are significant i.e., $p < 0.05$ or $p < 0.1$. GDP being a macroeconomic variable also has other economic factors which influence its growth rate which might serve as a reason for this insignificance. In Pakistan, major factors which includes the contribution of agriculture sector in the economy, high unemployment, political instability, exchange rate volatility and other factors like this significantly affects the GDP of the country. These factors vary from country to country and they might serve as a reason for the insignificant negative relationship of this macroeconomic variable with the dependent variable LLP in Pakistan. EBTLLP and ΔLoans have a significant positive relationship with the dependent variable which shows that they increase with the increase in the value of LLP. Loan loss provisions is basically an expense used to cover a number of factors related to the lending practices. It serves as a cushion against the losses incurred from the uncollected loans. When a bank is performing efficiently and its earnings are increasing, it is likely that more people will be willing to borrow money from that particular bank which will also increase the risk of default associated with that money. In this case, the bank will increase its amount of provisions in order to hedge this risk of loss which may occur in the form of bad debts and loan losses.

The p value of Tier1Ratio is 0.021 which means that it is significant at 5% ($p < 0.05$) with a negative coefficient. Tier1Ratio represents the capital adequacy requirements of a bank. It is the core capital of the bank which includes the equity capital and retained earnings of a bank. Since the retained earnings are also the form of reserves of a bank, so when one form of reserve is increasing the bank doesn't need to keep higher amount of other reserves. The reason for the negative relationship between Tier1Ratio and LLP is that with the increase in the bank's core capital its amount of reserves increases, as a result of which the value of provisions decrease. This variable has a significant relationship with LLP which shows that it has a greater influence on it. ΔNPL has a value of 0.081 which shows that it is significant at 10% i.e. ($p < 0.1$), depicting a significant positive relationship of this variable with LLP. Other variables which include Listing, IB and Lev show a negative relationship with the dependent variable. Listed banks are more strictly regulated as compared to the unlisted banks due to which their loans are more regulated. As a result of this, their amount of provisions kept for the loans are also less due to better regulation system. Since the dataset contains more listed banks therefore an increase in the number of listed banks decreases the amount of loan loss provisions. IB shows a negative relationship with the dependent variable LLP because of the different mechanism of Islamic banking system.

In a banking system, a bank's savings are its deposits and a bank's assets are its loans. When the amount of deposits (savings) increase with the bank, it means it has a greater amount of money with it due to which it doesn't need to keep some extra reserves. This is the reason for the negative relationship of Lev with LLP. The coefficient value of Listing, IB and Lev shows that with an increase in the value of LLP, a decrease is observed in the values of these variables. However, the significance level of all these variables is 5% ($p < 0.05$) which shows that all of them have a significant relationship with the dependent variable.

5. Conclusion

In this study, the relationship of loan loss provisions is tested with the capital and earnings management practices of banks in Pakistan. Initially the fixed effects model was used to analyze the dataset but due to its shortcomings the Clustered Robust Linear Regression was used which estimates the panel models.

According to the panel data analysis, the variable Tier1Ratio is used to analyze the relationship of capital management of banks with the loan loss provisions. This variable shows a significant relationship with the dependent variable which validates that banks do use LLP in their capital management practices. EBTLLP (earnings before taxes and LLP) is a variable used for the earnings management behavior of banks. A significant relationship is observed between the earnings management practices of banks through the use of LLP. Some variations might exist in the way how each bank makes use of the loan loss provisions for managing their capital and earnings, but this can be evidently derived from the study that both the commercial and Islamic banks do make use of LLP for their capital and earnings management practices.

For future study guidance, a comparative study can be done among the banks in Pakistan which compares that which type of banks show more evidence regarding the use of LLPs for their capital and earnings management. The study can also be done from the aspect of enhancing the loan portfolios of the banks and minimizing their risk with the help of loan loss provisions.

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APPENDIX

Figure 1: Scatter Plot