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Global Financial Crisis and its Implications on the Performance of Financial Sector of Pakistan

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A B S T R A C T

The banking sector plays a vital role in the financial system of economy and its development in any country. That's why performance of banking sector is a primary concerned for researcher and academician. The present study analyses the performance of financial sector of Pakistan to judge the impact of the global financial crises on banking sector of Pakistan. For this purpose, the current study picked up convenient sampling technique, a sample of twenty listed banks at Pakistan Stock Exchange and use their annual reports from 2006-2017. Return on asset is used as a proxy variable of performance and advances, asset quality, size, deposits, investment, liquidity, solvency and crises dummy as independent variables. The fixed effect model is applied to investigate the impact of these independent variables on return on assets (ROA). The results show that not only the model is good fit, however, sufficiently explains the underline phenomenon. Crises dummy is significant, shows that there is impact of global financial crises. Advances, Investment, solvency, and size have positive effect on the performance of banking sector of Pakistan, whereas asset quality, deposits and liquidity have negative relationship with profitability of bank. The asset quality and liquidity did not ensure profitability of commercial banks in recent crises as indicated by results. During the global financial crises banking industry failed to utilize their deposits efficiently. The policy makers revisit to safeguard the banking industry and focused on solvency and size of the bank, which plays an important role to safeguard the banking sector from such disaster. This study contributes in academic literature to grasp important determinants of the global financial crises of 2007-2008 in Pakistan. Future researcher may divide crises periods into phases to get further insights to the impact of global financial crises in banking sector.

INTRODUCTION

The financial crisis is an event that is expected to lead hazardous situation that affects the whole economy. Laeven and Valencia (2008) defined financial crises, when financial and economic sector upfront by default situation. They faced difficulties when assets are depressed and lose their value in terms of market price such as customer demands increases, and bank reaches to a default situation. For

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example, the financial sector debt was increased to 22% of gross domestic product (GDP) in 1981 to 117% of GDP in 2008 (Wolf, 2009). Simply, crisis means a situation of difficult and complex time in which solution is needed. It is a panic situation in which investors dispose of their assets and withdraw money from banks in a view that if they remain in financial institution value of the assets will be declined in future. Assets are devalued up to a high extent in the crises and there is a decrease in the worth of financial institutions (Angelides, 2011). Pakistan is one of developing economy of the world and has an importance in the international market. Moreover, the banking sector of Pakistan is one of the important sectors which contribute toward the development of financial sector. Therefore, this study empirically investigates the impact of financial crises on banking sector of Pakistan, specifically listed banks on Pakistan Stock Exchange.

Background of the Financial Crisis and Banks in Pakistan

In 1997, Bill Clinton government in the US approved a house building finance on easy credit terms. All the commercial banks were directed by US Govt. to grant house financing to US citizens for a maturity period of 10 years. Different types of programs were carried out as providing down payment assistance, home buying loans so that the low-income families would be benefited with low credit rates and affordable loans. Banks mortgaged real assets and issued a loan to the people. Due to which real estate prices rapidly go up in the era of 1997-2007 however, at the time of maturity, people realized lower values of real estate, people start selling their houses to meet their debt obligations causing a sudden decline in prices of real estate in the US. Later, US citizens handover their houses to the bank against mortgage loan and major commercial banks of US were defaulted because of heavy advances against those houses. At the start, the excessive response from the public about the housing boost up the prices yet, the decline of this sector became a major cause of crises. US economy stuck in inflation and US govt. issues $700 billion bailout package to save the defaulted banks in 2007. Later, this inflation captured almost world wide economy and financial crisis occurred across the world. In USA, the banking industry has been hit badly due to mortgages backed by subprime mortgage fallen in value. At that time govt of US should have been responsible for upholding promotion accountability for proper check and balance of financial markets though, financial institutions in US were failed to promote credit scheme which resulted at last and the housing bubble burst in 2007 inspiring the subprime crises. The global financial crises affected the whole world scenario adversely with far-reaching consequences for its victims.

Basically, global financial crises started from the USA due to unwise policy made by the financial institutions of loan extensive and subprime mortgage sector especially in the housing industry and, later, extended to developed countries like Russia, China, and East Europe. But the contagion effect of loan extensive due to global economic interdependence, economy of the world was affected uncertainly and negatively. The housing market crises resulted in expulsion and these crises contributed a lot negatively to the downfall of major key business, the decline in the consumer wealth worth in trillion dollars. This worst situation led to the world economy of 2008-2012 global recession and European debt crises.
The banks play a key role in each economy of the world in financing economic activity and different segments of the market. Commercial banks cannot be avoided due to their sound operational policies and market strategies significantly impacting their financial patterns. The economy of Pakistan was also affected by the crises and liquidity difficulty to fall quickly around the world had upset the investors' confidence who seek to channelize their investment to relatively stable economies. In November 2008 International Monetary Fund (IMF) timely helped when Pakistan had already low foreign exchange reserves and was able to avoid default on her foreign debts. (Nazir *et al.,* 2012)

The financial system of Pakistan includes the Central bank, Commercial banks, specialized banks, Microfinance banks, and a mix of Non-Bank Financial Institutions including Development Financial Institutions, Investment banks, leasing companies, Moradabad and mutual funds, brokerage houses, housing finance companies and insurance companies and Pakistan Stock Exchanges etc. The State Bank of Pakistan (SBP) regulates Banks and Direct Foreign Investment (DFI) beside managing the monetary policy. The investment banks, leasing companies, insurance companies, modaraba* and mutual† funds are under the supervision of Securities and Exchange Commission of Pakistan (SECP). There are fifty-three commercial banks in the banking industry of Pakistan. Out of these thirty-six are commercial, seven are financial development institutions, four are specialized and six are microfinance banks.

Impact of Global Financial Crises on Pakistan

Pakistan is a developing economy which facing social, political and economic crises. Pakistan had good exports to USA before 2007-08, however, after crises the global demand decreases which lead to fall in GDP of Pakistan. Consequently, foreign reserves also decrease drastically and trading at stock exchange floor also got to lower position due to suppressed economy. Pakistan also suffered from illiquidity issued during the crises. Capital flight and reduction in foreign exchange were observed during the era and currency of Pakistan also devalued against US dollar, pound and euro. Moreover, deposit shrinks were also observed during the global financial crises in Pakistan due to which interest rate goes up and cost of production increases. This high cost of production becomes a barrier to Pakistan exports. A high inflation rate not only increased poverty level but also drop the 49% population living standards.

Nazir, *et al*. (2012) in their study highlighted three major points of global financial crises. First, they explained the important aspect of global financial crises, then different classes of financial crises and the impact of financial crises on banking industry of Pakistan has been evaluated. This study is concerned with the last point. It reviews the kinds of financial crises that are in four groups: Currency crises, sudden stop of capital and balance of payment, debt crises and banking crises. It presents main factors explaining financial crises. It is often an amalgamation of events, changes in volume assets and asset prices, and the supply of external financing. The macroeconomic and financial implications of crises are basically common in nature. It summarizes the main method used to predict crises. However, to predict the timing of crises is a challenging task but the researchers show some of them are vital notably macroeconomic imbalances, internal and external shocks of crises, sudden run on banks, contagion (emergence of assets busts, credit crunches, fires sale) and spill over among financial sector Gulzar *et al.*(2019).

A rapid increase in credit is one of the most important factors for the financial crises. Various factors are involved in credit booms like shocks and structural changes in markets. Shocks lead to credit booms including changes in productivity economics policies and capital flows some relate to positive productivity shocks the credit booms can be simplified by the high increase in international financial flows. The recent financial crises are the outcome of some of the factors involved in combination e.g. Rapid expansion of credit and sharp growth in house and other assets prices were related to capital flows. This study analyses the financial crisis impact on Pakistani banking sector during the time of 2007 to 2008.Our focus is to especially understand the impact of global financial crisis during 2007 to 2008 but in larger extent for better understanding in this study the data has been taken for the period started from 2006 to 2017. To evaluate the performance of financial firms on banks three proxies are used return on assets (ROA), return on equity (ROE) and Tobin's Q. Researcher widely preferred ROA to evaluate the performance measurement of firms. Overall the aim of this study is to analyzing the various factors of banks' financial performance in Pakistan, relative significance importance of these factors along with the suspected impacts of global financial crises on the banking sector of Pakistan. Therefore, in current

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* Modarabah is the Islamic mode of partnership offered by Islamic Banks

† Mutual Funds are financial firms that pool the small investments by investors and invest in larger projects

study dependent variable is ROA while independent variables are deposits, advances, liquidity, investment, assets quality, size and solvency. The stepwise correlation matrix, descriptive statistic and regression analysis methods were used. It is found that asset quality is the most influential factor of return over assets followed by bank size and solvency. Advances, liquidity, investment, and size have positive while poor assets quality and deposits have negative impact on returnover assets. The global financial crisis (GFC) result of imprudent loaning by USA bank in the subprime mortgage sector made it a global phenomenon. Though GFC mainly hit the developed countries of the world but the developing and under developing countries were not exceptional. The global economic environment suffered tremendously after August 2007 due to financial crises and it changed the whole global landscape in banking sector.

LITERATURE REVIEW

Global Financial Crises

The term financial crisis is the type of situation in which some financial institutions suddenly decline their value of assets. The prevalent financial situation in the west is due to contract liquidity in the global credit market and banking system e.g downturn in housing market of USA lending and borrowing and excessive individual and corporate debt levels cause diversified effects on the global economy. The current situation can be traced in the 20th century and become more evident in 2007-2008. It shared the feeble financial system and regulatory frame work passing through various stages. To save the stability of the financial system, initiatives are hard to be taken. Financial instability which could threaten to financial institution and Govt. bailouts are due to excessive expansion of credit plus borrower's insolvency, large capital inflows in the economy and lending excessively for real estate at domestic level (Isgut, 2014).

The financial and monetary rules and strategies play the vital role in asset price bubbles. The relaxed financial and monetary policies and innovations, maximum demand for the assets led to financial crises Hayford and Malliaris (2010). According to black swan theory of Jickling (2010), following factors contribute in the downturn enumerated in the report to congress committee, as "lack of transparency and accountability in mortgage finance, imprudent mortgage lending, market to market accounting, shadow banking system, non-banks runs, Government subprime lending, failure of risk management, financial innovation, excessive leverage, easy regulation of leverage, and housing bubble.

Financial Crises effect on worldwide Banking

Tektas, *et al.* (2005) discussed the asset and liability management in financial crises. They debated that an efficient asset liability management requires maximizing banks' profit as well as controlling and lowering several risk and their study showed how shifts in market perceptions can create trouble during crises. The following factors played the negative role in the crises: domestic financial structure, exchange rate regime, problems of supervisions and regulations internal and external macroeconomic policies. According to Rose and Spiegel (2010), external aspects hit the developing countries. In the extreme condition of domestic financial crises, consuming huge amount of fiscal cost to rescue financial institutions, some prudential initiatives can never be overstated. Sufian *et al.* (2009) in their study on 16 middle east countries and North Africa and Asia found that size, loan intensity, capitalization and efficiency have a positive link with profitability. Likewise, Rachdi (2013), conducted a research on banking sector of Tunisia to determine the impact of financial crises of 2007-08. Findings of his study suggested that the impact of financial crises on Tunisian banking sector is considerable, as the results of

dependent variables for the period were highly significant, while after the financial crises period the coefficient of ROA and ROE remain negative. Jasmine (2011), founded that profit after taxes affected by ratio to non-interest income to total assets, GDP growth rate, real interest rate and inflation rate in the banking sector of Pakistan. His results showed that there is a positive relationship between ROA and noninterest expenditure to total assets. However, this relation is negative in Hong Kong banking industry during 1992-2002.

In contrast, Hoffmann (2011) investigate US economy the determinants of bank profitability during the period of 1995-2007 using both internal and external factors. Interestingly, their result shows that the capital ratios have a negative relationship with bank profitability in the US. They argued that the bank terminating the trading chances very carefully and the bank size cost advantages do not affect the banking industry in USA. Phulpoto *et al.* (2012) conducted a research to examine the relationship between bank-specific (size, credit risk, asset management and portfolio) and macro-economic indicators (economic growth, consumer price inflation). Return on assets and Return on equity are used to measure the profitability of banks. The finding of their study indicates that the bank's specific efficient asset management and economic growth has a significant and positive relationship with profitability. The IMF working paper in 2013, states in the paper that the main reason of financial crises is credit and assets booms, and its implication on financial and banking sectors all over the world.

Al-Karim and Alam (2013), conducted a study in Jordan banking sector to evaluate their financial performances. The result indicates that ROA is negatively affected by bank size while asset management policy has a positive and significant effects on the banking performance. He also observed a negative relationship between ROA and operational efficiency.Dawood (2014), has concluded that economic growth and non-interest income to total asset ratio do not have any relationship with the profitability of bank in Indonesia. He selected data from 2002-2011 using pooled regression models that the profitability of bank has a positive relationship with total assets while the bank size and cost to income ratio have a negative relationship with profitability. Ani et. al., (2012), conducted a study in Nigeria by taking 147 banks data from 2001-2010. He used pooled ordinary least square model to investigate capital asset ratio relationship with the bank profitability. His results revealed that the more capital asset ratio, the more will be the bank profit ratio.

According to Alkassim (2005), who utilized both banks data that is conventional banks and Islamic banks of the GCC countries covering the period of 1997-2004. He incorporated internal and external factors to check the effect on the profitability of both types of banks. His results revealed that conventional banks are better performer then Islamic banks, however, interest-free lending have significant effect on Islamic banks in GCC countries, while total expenditures negatively affect the conventional bank's profitability. Similarly, research conducted in Turkey by Anbar and Alper (2011), investigated that the size of the bank has a positive effect on the profitability of bank while only external factors real interest rate positively affects commercial banks profitability in Turkey.

Global Financial Crises and Banking Sector of Pakistan

The global financial crises hit the world at that time when the economy of Pakistan was already deteriorated due to trade shock resulting from global food and fuel price hypes. They marked the Pakistan economic difficulties, slowed down in its growth along with the rise in the current accounts, fiscal deficits, a spike in inflation, pressure on the domestic currency. As a result, the world witnessed a sharp decline in economic growth from 7.3 % in 2004-2007 to 3.7 % in 2008, further decreasing to 1.7 % in 2009 as private investment was hit on security concerns bases. Pakistan received a severe setback in current account balance as its external accounts were already under stress. The current accounts put pressure on the domestic currency and widened to 9 % of GDP in 2009. Pakistan policy response clearly shows the IMF dictation and it was committed to adopt the strict monetary and fiscal policies for the

preservation of macroeconomic stability. The monetary policy was tightened as inflation rose. The IMF required a reduction in the fiscal deficit from 7.4 % of GDP in 2008-2009 to 4.2 % in 2009-2010 and further to 3.3 % in 2010-2011. The IMF monetary and fiscal policies left no chance for macroeconomic adjustments needed for economic growth and stability.

It was believed that Pakistan could survive as it was not embedded in the global financial system completely, but the result was totally contradictory. It had to be affected on the diverse counts such as failing of direct foreign investment, development aid, remittances and exports. Moreover, the twin budgetary and trade deficit, the stock market plunge, energy crises, rising food inflation linked with the global event. The balance of payment crises hit Pakistan when the entire donor community like the USA and Europe were under the heavy chain of financial crises for bailout packages, Pakistan demanded aid from Saudi Arabia and China for billion dollars financial support in November 2008, the IMF agreed to provide 7.6 billion dollars to support Pakistan economy and released the first instalment of 3.1 billion. As a result, foreign exchange boast up to $9 billion. (Ali, 2009)
Nazir, *et al.* (2012) conducted a research on the impact of global financial crises on Banks' financial performance in Pakistan. The result found that size, investment, deposits and solvency helped more effective to improve financial performance in the post-crises years than in pre-crises years. Islam, et. al. (2013) investigated the elements that affecting the financial sector worldwide and indirectly Pakistan. These elements included: World trade, exchange rate, interest rate, remittance and migration and foreign aid. Moreover,Dawood (2014) in his research paper on 23 commercial banks of Pakistan, he took both internal and external factor to check the profitability of banks. The results reveal that capital adequacy, size, cost efficiency and liquidity are the major determinants of commercial banks profitability in Pakistan.

The financial crises can be discerned in the four sectors of Pakistan. The financial sector has witnessed the addition in the remit of the 19.5 from July to April 2008–2009, due to commodity price hike, unstable conditions of the country and real estate panic, capital flows and workers" remittances etc. The global slowdown of the demand put a net positive effect on commodity prices and trade and option for capital raising has been restricted (Mahmood, et. al., 2010).In other studies conducted in Pakistan to check the impact of internal factors like loan, asset and deposit on the profitability of banks. Return on asset is used as a proxy of bank profitability and they investigated that the internal factors affect the bank's profitability in Pakistan, but bank size and total assets do not affect ROA. However, equity and deposits significantly affect the commercial bank's profitability (Javaid, 2011). Another study conducted on Pakistani commercial Banks by Ali, et. al.(2011) investigated 22 banks including both public and private sectors and took data for the period of 2006-2009. They applied regression model on ROA and ROE as the dependent variable and external and internal factor as independent variables. Their findings showed that profitability increases when economic growth increases and profit decreases when credit risk enhanced.

A comparative study of Islamic banking and conventional banking by Nisar (2015) analysed the major products of both systems, the study found that many practices that are used by the Islamic bank do not affirm Islamic principles of banking, so they need further improvement in this regard. The result shows that the performance of Islamic banks during the crises is better than the conventional bank and the growth rate is observed high than conventional banks. Empirical findings suggest that conventional banks are more profitable and more efficient than Islamic banks. However, Ongore and Kusa (2013), found that financial crises do not affect the Islamic banks in Pakistan as compared to conventional banks. They used the size of the total asset, management efficiency and risk weighted assets of the Islamic

banks credit risk measures and found that global financial crises does not affect Islamic banks. However, the global financial crises severely affect the conventional banks systems in Pakistan which affect leverage, cost of funding and credit risk of conventional banks. More recently, in context of Pakistan, Chaudhary and Abbas (2017) observed the impact of the financial crisis over the efficiency and performance of commercial banks. They applied the Data Enveloping Analysis (DEA) technique for analysis of efficiency and repression model in analysing the banks performance. They concluded that these financial crises didn't affect Pakistani banking sector's performance.

To sum up the literature review about concerned area, it is evident that there exists a strong relationship between external and internal factors with the profitability of banking sector in any economy. These internal and external factors influenced banking performance in both directions. The current research tries to fill the literature gap by testing these factors on banking profitability to investigate the impact of global financial crises in Pakistan. From the review of literature discussed in this chapter, the current study came up with few important variables that have a great concerned with the banking profitability which includes size of banks, deposits, solvency, advances, liquidity, assets quality and investment.

Research Methodology

To establish a relationship in the desired research model, current study uses panel data regarding the financial performance of the banks. The secondary data has been obtained from the financial statements of the concerned banks. The sample consists of all commercial and Islamic banks which are scheduled at State bank of Pakistan and listed at Pakistan stock exchange. The financial data of the selected banks is ranging from 2006-2017. Multiple regression models are employed to determine the performance of these commercial banks. This multiple regression techniques help us in investigating the relationship between dependent and independent variables. To fit the regression line for the data from 2006-2017, ordinary least square is used.

Data construction

The population frame of this study based on all conventional and Islamic banks which are listed on Pakistan Stock Exchange, previously known as Karachi stock exchange and there were nineteen conventional banks and four are Islamic banks listed at KSE as on December 2017. For this study, only twenty banks are selected in which sixteen are conventional and four are Islamic banks and their data was extracted from State Bank of Pakistan and Business Recorder official websites. Furthermore, the Karachi Stock Exchange website is also used to get required data set. Special attention was paid to those banks whose data was available for the period. Moreover, annual reports of selected banks were also used to collect the data.

Table No. 3.1 List of selected Banks

S/No.	Name of Banks	S/No.	Name of Banks
1	United Bank Limited (UBL)	11	Muslim Commercial Bank (MCB)
2	Askari Bank Ltd	12	Faysal Bank
3	National Bank Ltd	13	Zari Tariqyati Bank Limited (ZTBL)
4	Habib Bank Limited (HBL)	14	Bank of Punjab (BOP)
5	Meezan Bank Ltd	15	Bank of Khyber (BOK)
6	Allied Bank Limited (ABL)	16	Bank Alfalah
7	Bank AlHabib	17	Bank Islami
8	Soneri Bank	18	Standard chartered
9	Small and Medium Entreprise (SME)	19	Al Baraka Bank
10	Habib Metro	20	Dubai Islamic

Table No. 3.2 Variables of the study

S/No.	Variable Name	Formula
A	**Dependent Variable**	
	Return on Asset (ROA)	Net Profit/Total Assets
B	**Independent Variables**	
1	Deposits	Deposits/Total Assets
2	Advances	Net of Provision/Total Assets
3	Liquidity	Cash & cash equivalents/ total assets
4	Investments	Investment/total assets
5	Asset quality	Provision against NPLs/gross advances
6	Size	Log of Total assets
7	Solvency	Capital ratio: total equity/total assets
8	D01	Financial crises year dummy

Return on assets (ROA):

To find out the bank profitability, ROA is an important and useful measure for measuring the bank's profitability. Simply, this ratio evaluates the banks capability to generate profits. ROA is a financial ratio that shows the percentage of profit that a company earns in relation to its overall resources (total assets). It is often called the return on total assets is used for measuring profitability ratio (Shahzad *et al,* 2015). Generally, it gives an idea that how efficient management is at using its assets to generate more profit during the period. Moreover, it can be refer as "return on investment".

Advances:

The funds provided by the banks which are being payable less than a year to its clients. Here, the advances are measured by: Advances net of the provision of total assets.

Assets quality (AQ):

Asset quality has used the assessment of credit risk linked to a asset. These assets usually require interest payments e.g. loan given by banks. Quality of the asset depends upon the financial institutions that what kind of credit risk is given. Here, asset quality is used as an independent variable and measured by the provision against non-performing loan to gross advances of the banks.

Deposits:

The term deposit is a liability payable by the bank to the depositor. Here, deposits are used as an independent variable and measured by deposits divided by total assets.

Investment:

It refers to a total investment made in the capital market by the bank for profit purpose. It is also used as independent variable and measured by investment to total asset of the bank**.**

Liquidity:

This ratio is used to measure the ability of the firm to meet its short-term debts. Banks practice liquidity ratios can be used to understand whether to spread short-term credit or not. If the liquidity ratio is higher than the firm can pay its short-term obligations. Moreover, cash is considered the most liquid asset of the bank and any other financial institutions. In this study, the terms liquidity cash and cash equivalents are included.

Size:

This proxy is used for size (total assets) of the bank and is also independent variable in our model. It is measured by the natural logarithm of total assets.

Solvency:

It is the ability to meet bank's obligations, expressed in percentage form. This is calculated by taking up total equity of the firm and divided by total assets stated on their balance sheet. A high solvency ratio indicates that firm can meet it's short term and long-term obligations. Conversely, a low solvency ratio will prohibit the default chances in future, as there is imbalance between assets and obligations.

Crises Dummy:

To capture the financial crises year effect, a dummy variable D01 is introduced. A value 1is assigned to the year 2008 and 0 to rest of the years.

Econometric model

A simple regression model has been employed to explore the financial performance of commercial banks during the financial crises in Pakistan. This multiple regression model enabled to ascertain the impact of various independent variables on dependent variable. Here is the detailed statistical description and explanation of variables: -

$$ROA_{it} = \alpha + \beta_1 ADV_{it} + \beta_2 AQ_{it} + \beta_3 DEP_{it} + \beta_4 INV_{it} + \beta_5 LIQ_{it} + \beta_6 SIZE_{it} + \beta_7 SOL_{it} + \beta_8 D01_{it} + \varepsilon_{it}$$

where

ROA	=	return over assets (net profit after tax to total assets ratio)
ADV	=	advances (advances net of provision to total assets ratio)
AQ	=	assets quality (provision against NPLs to gross advances ratio)
DEP	=	deposits (deposits to total assets ratio)
INV	=	Investments (Investments to total assets ratio)
LIQ	=	liquidity (cash and cash equivalents to total assets ratio)
SIZE	=	size (total assets)
SOL	=	solvency (capital ratio: total equity to total assets)
D01	=	financial crises year dummy, assign 1 to 2008 and 0 otherwise.
E	=	error term
i_t	=	i demonstrates company and $_t$ demonstrate time series

The above econometric model shows that return on assets (ROA) is our dependent variable used as a proxy for the financial performance of the commercial banks. This ratio is obtained by dividing net profit after tax to the total asset. Similarly, to check the impact on ROA, advances, liquidity, deposits, solvency,

investment, size, asset quality and dummy as independent variables are used.

Results and Analysis

The method of descriptive statistics is used to find the mean, standard deviation, minimum and maximum values of each variable under consideration. It is also known as the test of "normality distribution". Correlation analysis is used to test the statistical significance of the association as it helps in determining the association between variables. Descriptive statistics of all the variables under consideration are shown in Table 4.1. It depicts number of observations, arithmetic mean, standard deviation, minimum & maximum values of the variable used in this study.

Table No. 4.1 Descriptive statistic

Variables	Mean	Std. Dev.	Minimum	Maximum	Kurtosis	Skewness
ROA	0.0069	0.0183	-0.0912	0.0341	11.7832	-2.9415
ADV	0.5461	0.1972	0.0000	1.8340	12.1368	3.0362
AQ	0.0983	0.1537	0.0000	0.7980	13.0759	3.5251
DEP	0.8169	0.2789	0.0351	2.2491	11.7895	1.1960
INV	0.3762	0.1670	0.0473	0.8980	3.2689	0.6402
LIQ	0.1257	0.0785	0.0324	0.4143	7.9968	2.0384
SIZE	5.0387	0.7897	2.1310	6.2451	4.7669	-1.2635
SOL	0.1358	0.0967	0.0273	0.7723	13.6879	3.0474

Mean represents the average value of all selected variables which are included in the study. Standard deviation shows variation or diversity in data set of each variable. Lower value of standard deviation indicates closeness to mean whereas high value of standard deviation shows that the data is extended over a large range of values. The next descriptive "minimum" is the lowest value in variables and maximum is the largest value of that variable. Kurtosis and Skewness display that how much the data is normally distributed. In short, the mean and standard deviation helps us to check the data concentration and dispersion around it. A low coefficient of standard deviation shows consistency in data while kurtosis and skewness show the normality in data set.

Table No. 4.2 Correlation result

	ROA	ADV	AQ	DEP	INV	LIQ	SIZE	SOL
ROA	1.0000							
ADV	0.0516	1.0000						
AQ	-0.5171	-0.1669	1.0000					
DEP	0.1209	0.4168	-0.3036	1.0000				
INV	0.0432	-0.0698	0.2436	0.4097	1.0000			
LIQ	0.0189	0.2933	-0.3036	0.2988	-0.2864	1.0000		
SIZE	0.3433	0.1118	-0.2534	0.1849	0.0246	-0.0019	1.0000	
SOL	-0.0936	0.3108	0.2969	-0.1135	0.0759	0.2287	-0.2759	1.0000

Correlation Analysis

The Pearson coefficient of correlation is a technique that estimates the relationship and direction of relationship among the variables. It helps to avoid the usage of overlapping independent variable. In table 4.2 the result of correlation matrix is given. It can be seen that maximum coefficient of correlation is 0.53, which is a moderate relation, while rest of coefficients is less than 0.50, which indicate that our

result is free from multi-collinearity problem. Therefore, independent variables of this study are good predictor to investigate the impact on dependent variable.

Regression Analysis

As per the nature of our data the panel regression model was applied. The panel data consist of some cross sectional units over the time and has two dimensions, therefore, the fixed effect model has been applied to estimates desired result and then random effect model is used. The Hausman test was applied to decide between the two models which one is appropriate for our desired result.

Table No. 4.3 Fixed Effect Regression

Variable	Co-efficient	Std. error	t-stat.	Prob.
C	-0.0156	0.0069	-2.26087	0.0340
ADV	0.0125	0.0064	1.95312	0.0538
AQ	-0.0941	0.0078	-12.0641	0.0000
DEP	-0.0234	0.0058	-4.03448	0.0001
INV	0.0468	0.0101	4.633663	0.0001
LIQ	-0.0328	0.0207	-1.58454	0.0956
SIZE	0.0153	0.0012	12.75000	0.0000
SOL	0.0358	0.0141	2.539007	0.0291
D01	-0.0152	0.0031	-4.903230	0.0001

The regression result of fixed effect model is presented in table 4.3, the first independent variable is advances and its coefficient is 0125, which indicates a positive impact of advances on ROA of banks' in Pakistan, however, its t-value is 1.953 and Probability is 0.0538 means it is statistically insignificant. The advances of the commercial banks have a positive impact on the banks' profitability, for which the ROA is used as a proxy for profitability of banks. The more advances of banks mean more net interest margin. Moreover, high advances by the bank show that it is operating efficiently. Our result shows that although advances are not statistically significant but has a positive link with the ROA of our sample of the study. Our results are consistent with the study of (Nazir *et al.,* 2012).

The next variable of this study is the investment that made by the commercial banks during2006-2017. Our regression result shows that investment is a significant variable as t-value for investment is 4.6336 with p-value of 0.0001, means that investment has highly significant value that brings a significant change in ROA. The theoretical justification of the result is the investment contributes in the profit of the commercial banks. The more the investment opportunities available to the bank the more will be the chances to make a profit.

Liquidity is measured by cash and cash equivalent to total assets. Its coefficient is negative but statically insignificant. It means that during the financial crises period liquidity does not ensure the profitability because the more cash and cash equivalent kept by the bank and does not utilize to contribute to the profit. That is the reason that liquidity has a negative relationship with ROA. Solvency is the measurement of the bankruptcy chances of bank. The regression result shows that solvency is a significant variable as the t- stat is 2.53 which is less than 2.96 and probability value is equal to 0.0291 significant at 95%. During the financial crises solvency of the financial sector is vibrant to ensure the existence of firm even in adverse condition as shown by our results. Dummy variable is used for the crises period which is 2008, the year of crises. The coefficient of the dummy variable of crises period is -0.0152, which shows that this negatively affect the ROA of the banking sector of Pakistan. It gets cleared from our results that the banking sector of Pakistan is hit by global financial crises in 2008 and performance of the banking sector is shock during global financial crises in 2008.These results are consistent with Shahzad *et al.* (2015)

CONCLUSION

The economy of Pakistan is one of the developing economies that has some specific issues, identified by experts and researchers recently. It is also affected by current global financial crises which cause

serious issues like low remittance from overseas, drop in foreign direct investment, unfavourable international trade, high-interest rate and low exchange rate in the international market. Few internal factors also contribute to the instability of the economy, most serious of them are the unstable political environment, low GDP growth rate which intensifies the global financial crises. Current study examined the impact of world financial crises on financial sectors of Pakistan during 2007-2008. Panel data is used to evaluate banks performance during crises. The secondary data obtained from annual financial reports of 20 banks from 2006-2017. Various descriptive of the data are measured to analyse its nature and realiblity before applying the final model of the study.

It is concluded from the results that our independent variables are good predictors to investigate the impact on dependent variable. The value of F-statistic is highly significant and good fitness and F-statistic shows there is no problem overall the model. Moreover, R-squared and Adjusted R-squared captured in our model 40% explanation in our dependent (ROA). The value of Durbin Watson is near to 2; indicates a no problem of autocorrelation in the model. The Panel regression result clarifies that there is an effect of global financial crises on the profitability of banking sector in Pakistan. Advances are not statistically significant but have a positive link with ROA. Assets quality (AQ) is highly significant and affects the profitability of commercial banks during global financial crises. However, deposits have negative impact on ROA and significantly affected the banks' financial position due to improper utilization of deposits during global financial crises while investment has highly significant change on ROA. The liquidity is statistically insignificant and has a negative relationship with ROA. Moreover, size of the bank is an important variable for ROA and has a positive coefficient and highly significant. Likewise, Solvency shows significant effects at 10% which means bank plays an important role in making profit during global financial crises.

Recommendations

1. Based on our result it is recommended that during the crisis period, solvency plays an important role to safeguard the financial performance of banking sector. The more solvent a bank is, the less adversely affected by financial distress.
2. Size of the bank has a positive link with the performance of the bank, so the larger the bank operations are, fewer shocks will be on it, as mature banks didn't affect by any financial crisis.
3. Finally, the advances also play an important role to safeguard the financial sector from financial distress. Banks should enhance their advances to divert financial shocks in the economy.

Future Research

Future study may look other important constructs that are vital for the financial performance of banking sectors, especially in developing countries. Further study may cover the time horizon breakdown into three structural periods to understand the in-depth impact of financial crisis on the banking sector.

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