

THE EFFECT OF MACROECONOMIC & BANK SPECIFIC FACTORS ON BANKS PROFITABILITY: AN EMPIRICAL EVIDENCE FROM BANKING INDUSTRY OF PAKISTAN

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Article History: Received on 28th February 2020, Revised on 23rd March 2020, Published on 2nd June 2020

Abstract

Purpose of the study: In the emerging environment of the banking sector, profitability is the main principle of the banks. The objective of this study to scrutinize the impact of banks on specific indicators such as asset size, credit risk, capital adequacy, and macroeconomic indicator such as the interest rate on the profitability of banks. Profitability is usually shown as a function of internal and external determinants.

Methodology: To consider the determinants of bank's profitability panel data has been used from 2003 to 2018 which belongs to 17 commercial banks for VIF, LSDVM, and Hausman test. The data is collected from the secondary source through financial reports of the banks. The dependent variable is ROE and the independent variables are in two categories bank-specific variables and macroeconomic variables and analysis has been carried out in E-views software.

Main Findings: The results reveal that the micro-economic factors that are deposits, asset quality, asset size, and liquidity have a significant impact on the bank's profitability. While macro-economic factor gross domestic product (GDP) has a positive impact on the bank's efficiency. However capital adequacy ratio, inflation has a negative effect on the bank's profitability. Ours insights give the conclusion that the bank's profitability being resolute by the significantly considered the above factors.

Application of this study: This study contributes toward the banking sector for policymakers in order to construct the best capital configuration of the firm. This study also suggests that which element is having more importance while making capital configuration for the firm.

The originality of this study: Profitability is usually shown as a function of internal and external determinants. The number of studies is available related to other industries but fewer studies are available related to the banking sector of Pakistan so this research work provides the technique while making the best profitability configuration for banks of Pakistan.

Keywords: *Bank Profitability, Asset Size, Return of Equity, Liquidity, Gross Domestic Product.*

INTRODUCTION

The profit of banks has associated with the development and improvement of an economy. For the development of deposits, two major functions of a commercial bank are the mobilization of deposit and extension of credits. The two main funds sources of banks are the rate of interest and other service charges. Banks charge a high rate of interest from the borrowers against loans and credit. The administration to borrowers and depositors, banks have a desire of accomplishing focused on rates of return. Aside from giving credits, banks likewise create benefits from the investment. In an offer to expand their income, each bank attempts to structure its assets and liabilities in a path as to yield the highest returns, remembering the risk includes and subject to a few requirements ([Albertazzi and Gambacorta, 2009](#)).

As money related to middle people, banks assume a vital part in the operation of an economy. Banks are the sole suppliers of assets, and their steadiness is of foremost significance to the budgetary framework. The assets of a bank are categorized into two main parts the earning assets and the non-earning assets. Loans and investments are earning assets, whereas total reserves of banks and non-interest earning deposits with the Central Bank and fixed assets are non-earning assets the non-earning assets consist of fixed assets,. Profits are often generated by earning assets ([Athanasoglou et al., 2008](#)).

A large portion of the banks' liabilities is payable on request, yet it is known by banks that on the normal, clients will ordinarily interest for a little extent of the funds deposited at any given time. Thus, given satisfactory finding is made to cover such withdrawals, they adjust of the provisions can be given as an advance to credit-commendable clients of the bank.

The main part of the benefits made by banks emerges from the distinction between the expenses of funds stored by clients and the charges on Loans to borrowers. For the most part, investors get brought down rates of interest for correlation with the rate charged on advances. In light of the previous, we can say that the more cash banks can loan the higher their profit ([Asutay&Izhar, 2007](#); [Karim, 2010](#)).

This work tends to assess the major determinant of bank's profitability in Pakistan. Though many factors have been examined or listed to be the ingredients that affect bank's profitability among which are bank interest-free rate, deposit, bank capital base, credit risks management, liquidity ratio, loan to deposit ratio, and capital adequacy. The factors discussed above see their effects on the bank's profitability in Pakistan.

RESEARCH OBJECTIVES

To find out the key determinants of a bank's profitability

1. To determine the effect of bank-specific and Macroeconomic determinants on banking profitability.
2. The main objective is to see the impact of bank-specific indicators Such as Asset size, Credit Risk, Capital Adequacy, and a macroeconomic indicator such as interest rate (Discount rate) on the profitability measures.

LITERATURE REVIEW

[Molyneux and Thornton, \(1992\)](#) Worked on eighteen European nations to know about profitability. The study showed banks follow the old US concentration. [Goldberg and Rai, \(1996\)](#) Find out the association of performance and the market structure of the American bank. On the other also worked on the European bank, it has been showing that concentration and profitability were highly significant and being upgraded to the efficient hypothesis structure and the old performance structure (SCP). [Aigner, Lovell, et al., \(1977\)](#) Find out the X-inefficiency and scale-inefficiency concluded half-normal distribution of errors.

[Guru, Staunton, et al., \(2002\)](#) Explained that some commercial banks are more successful than other banks because in profitability, performance disparities due to change in management that is controllable by internal components. The market interest rate as represented by the base lending rate was applied as a measure of capital scarcity. They send out that bank profits based on interest income and interest disbursements, the divergence between the loan and deposit rates may have been a more appropriate determinant of profitability compared to only one market interest rate. [Mamatzakis and Remoundos, \(2003\)](#) Analyzed the strategic planning of the bank's straightly impact to considered variables in which equity to asset ratio, personal expenses, and loan to assets. They came to know in market economies of scale play an important role in which external factor included that has a significant impact on profitability. [Naceur \(2003\)](#) investigated the bank's profitability and net interest margin through the microeconomics and macroeconomics factors of the Tunisian banking sector overtime period of 1980-2000.he found that the bank profitability and net interest margin has greatly impacted by large capital and the overhead. Another result revealed size has a negative and significant impact on the net interest margin. Macroeconomics variables inflation and rate do not influence the bank's profitability and interest margins.

[Haron, \(2004\)](#) Revealed that elements which are added productivity of Islamic banks. Factors include funds invested in Islamic securities, liquidity, total expenditures, and borrowers of funds giving highly significant internal variables with income which is established by an Islamic bank as well as external factors like market shares, interest rate, and the size of bank effect on the bank's profitability.

[Kosmidou, Tanna et al., \(2005\)](#) observed the effect of bank-specific features, macroeconomic circumstances and financial market arrangement of UK possessed commercial banks' profits, measured by return on average assets (ROA) and net interest margins (NIM). An unbalanced panel data set of 224 remarks, cover the period 1995 2002, provided the stability for the econometric examination. [Athanasoglou, Delis et al., \(2006\)](#) studied bank profitability on the base of bank-specific and macroeconomics variables of South-Eastern European sectors over the period 1998 to 2002 by using an unbalanced dataset. His investigation revealed the exclusion of liquidity, all bank explicit variables affect bank profitability in the projected way. The observed result showed the laborious agreement on the bank's solidity and efficient working of see countries. The foremost emphasis on the credit institution's structure and financial level modification of SEE countries at a wider level of examination, the SEE countries give evidence that interrelation among the microeconomic aspect as well as with political disputes political and economic issues. [Aburime \(2008\)](#) Reported that the regression results disclose that actual interest rates, inflation, monetary policy, and conversation rate rule are major macroeconomic factors of bank success in Nigeria. Banking sector growth, stock market growth and financial configuration are insignificant; and the association among commercial taxation policy and bank profitability in Nigeria is indecisive. Examine macroeconomic factors of bank profitability in Nigeria. So, in parliamentary process to maximize the profitability and stability of banks in Nigeria, the CBN should recompense significant attention to these macroeconomic pointers. Through the sustained acceptance and application of

sound macroeconomic values, the CBN should attempt to always meet its main duty of providing a sound macroeconomic environment for all sides of economic movements, particularly banking.

[Athanasoglou, Brissimis, et al., \(2008\)](#) Worked on the internal and external factors to find out the profitability of the bank. Capital and explored risk credit both have a strong impact on lowering bank profitability. They also mentioned the size of the bank does not influence the bank's economics of scale. The macro factor inflation and cyclical output effect on bank profitability. [Sufian and Habibullah \(2009\)](#) Described that during the period under study the results indicate that the impact of size is not uniform across the various criteria used. The empirical findings suggest that size has a negative impact on return on average equity (ROAE), while the reverse is true for return on average assets (ROAA) and net interest margins (NIM). Equally, for the impact of macroeconomic indicators, we resolve that the variables have no significant impact on bank profitability, except for inflation which has a negative relationship with Bangladeshi banks profitability.

[Anbar and Alper, \(2011\)](#) Explored that to measure the bank profitability we consider the two determinants which are bank-specific and microeconomic. They say we can measure the profitability through return on asset and return on equity as a function of bank-specific and microeconomic determinants. They say that even if the size of credit portfolio and loans under follow up have a negative and significant impact on bank profitability. [Ali, Akhtar, et al., \(2011\)](#) Explained that ROE and ROA are used to evaluate the profitability and to limit the effects of bank-specific and macroeconomic indicators of profitability. The efficient asset management and economic growth, establish a positive and important relationship with profitability in both models (measured by ROA & ROE). The high credit risk and capitalization lead to lower profitability measured by the yield on assets (ROA). The operating efficiency tends to demonstrate the higher profitability level as measured by yield on equity.

[Curak, Poposki et al., \(2012\)](#) investigated the bank profitability keeping firm and macroeconomic determinants applied in 16 banks over the time period of 2005 to 2010. The outcome should the foremost variable for bank-specific is operating expense management and greater impact by solvency risk and liquidity risk whereas macroeconomic factor-like economic growth and banking system modification showed significant influence on the profitability of a bank in the Republic of Macedonia.

[Riaz&Meher \(2013\)](#) discovered that bank profitability contributing factor of external and internal determinants which are related to the country-specific macroeconomics and bank-specific microeconomics factor included. researched on the bank profitability. The main focus on macroeconomic and macroeconomic factors. They found that bank performance has a major impact on the capital and explored risk credit has a great impact on lowering bank profitability. They also mentioned the size of the bank does not influence the bank's economics of scale. The macro factor inflation and cyclical output effect on bank profitability. [Francis \(2013\)](#) Specified that his work was to look into the fundamental aspects of commercial bank profitability in Sub-Saharan Africa. Employing the cost efficiency model, bank profitability was estimated using panel random-effects method in a static frame. The explanatory variables are growth in bank assets, growth in bank deposits, capital capability, operational efficiency (inefficiency), and liquidity ratio as well as the macroeconomic variables of growth in GDP and inflation. The results obviously show that both bank-specific, as well as macro-economic aspects, explain the dissimilarity in commercial bank profitability over the survey period. These results indicate the significance of both bank-level as well as the macroeconomic aspects in explaining commercial bank profitability in Sub-Saharan Africa.

[Ashraf et al., \(2017\)](#) Investigated that bank's performance significantly impacts the asset size and financial risk has a negative association with return on asset whereas a positive impact on return on equity. In the study, they came to know the external variable's effect on bank profitability. Worked on the determinants of bank's profitability in Nigeria, panel data being used 1998 to 2006 including 1255 observation. His result showed that the bank's profitability greatly impacts the real interest rate and inflation whereas financial structure, bank development have insignificant influence. He suggests to increase the bank's profitability and stability State Bank of Nigeria (CNB) should focus on the macroeconomic issues.

[Bapat, \(2018\)](#) explored that competitive advantage by Macroeconomic factors made a company face problems related to a local, regional, and international organization. Through profitability, a company gains a competitive advantage that provides a way to the company to explore new opportunities to achieve better performance in the future, and banks want to continue it. Competitive advantage effect many types of research and researchers of the company because it impacts all departments and areas of the organization. It increases productivity and brings success to the banking industry.

METHODOLOGY

To consider the determinants of bank profitability, we used panel data, A data set that gets up both time series and cross-sectional elements is known as a panel of data or longitudinal data. Timespan is selected from 2003 to 2018 which belongs to 17 commercial banks. The data is collected from the secondary source through financial reports of the banks whereas the data for macroeconomic are obtained from WDI and analysis has been carried out in E-views software. The basic framework for the panel data is set according to the following regression model.

To complete the aim and objectives of this study, the following model is proposed.



Model: Return on Equity (ROE)

$$ROE = \alpha + \beta_1 AS_1 + \beta_2 LIQ_2 + \beta_3 DP_3 + \beta_4 CAR_4 + \beta_5 AQ_5 + \beta_6 GDP_6 + \beta_7 CPI_7 + \epsilon$$

VARIABLES

In our study, various variables are used to find out the determinants for the bank's profitability. ROE is considered as dependent variables. Macroeconomics and bank-specific two types of independent variables are included. Further in internal variables bank-specific and in external economic growth and inflation are under observed.

Dependent Variable: With regard to (ROE) were employed to assess the bank's effectiveness. ROE is net income/shareholder equity. The values are measures calculated in percentage. The ROE is employed to analyze the bank's profitability or represents a return from shareholder's equity. The above model has been used by various studies includes ([Staikouras, 2004](#); [Masood, 2015](#); [Mahmud et al., 2016](#), [Anjom& Karim, 2016](#); [Islam & Rana, 2017](#); [Curak&Poposki, 2013](#))

Independent Variables: Independent variables are categorized into two groups:

- a) Bank-Specific variables,
- b) Macroeconomic variables.

Bank Specific (Internal) Variables: The bank-specific variables are variables that are connected to the assessment of administration and the bank's strategic objectives. In order to calculate the effectiveness of banks, the jumble-sale bank-specific variables explained below: Asset size, Liquidity, Asset Quality, Deposit, Income expenditure structure, Capital adequacy.

Asset size (log A)

A significant variable jumble-sale in finance writings is asset size and the entire assets logarithm signifies bank size and represented by (log A). The bank's entire assets jumble-sale as a proxy for the size of the bank. This proxy refers to [White, Sondhi, et al., \(2003\)](#).

Liquidity

Liquidity is a factor to know about the efficiency of the company, it is the bank's ability to fulfill its responsibility for short term debt.

$$\text{The formula for return on equity is : } \frac{\text{liquid asset}}{\text{total asset}}$$

Deposit

Bank's main earning depends upon the deposit,

$$\text{The formula for return on equity is : } \frac{\text{deposit}}{\text{total asset}}$$

Return on equity (ROE)

ROE is the ratio of net profit divided by shareholder equity. Its mean focus on the company's profit shown\ how much profit engender income through shareholder equity.

$$\text{The formula for return on equity is : } \frac{\text{Net profit}}{\text{Equity}}$$

Asset Size

An important variable asset size for the banking industry and the entire assets logarithm signify bank size and signified by (log A). The bank's entire assets used as a proxy for the size of the bank.

Capital Adequacy Ratio (CAR)

It is a ratio to measure the ability of the firm to control losses and grip risk disclosure with shareholders.it strengthens the firm's capability to control risk and boost up its activity.

$$\text{The formula for capital adequacy ratio is : } \frac{\text{Equity}}{\text{Total asset}}$$

Asset Quality

The quality of assets is the estimation and valuation of the risk which may be in the shape of a loan link with the precise asset it shows how the firm effectively managing its credit risk.

$$\text{The formula for capital adequacy ratio is : } \frac{\text{loan}}{\text{Total asset}}$$

Gross Domestic Product

GDP is the widest measurable factor of a state's total trade and industry activities. Definitely, GDP signifies the regulatory value of all services and commodities formed indoors a nation's geographical boundaries completed in an identified period of time.

The formula for GDP is

$$\text{Consumption} + \text{Investment} + \text{Govt. expenditure} + (\text{export} - \text{import}) = \text{GDP}$$

D.V ROE

H1 = There is a significant relationship between bank profitability and asset size

H2 = There is a significant relationship among bank profitability and capital adequacy

H3 = There is a significant relationship among bank profitability and asset quality

H4 = There is a significant relationship among bank profitability and liquidity

H5 = There is a significant relationship among bank profitability and deposit

H6 = There is a significant relationship among bank profitability and net interest margin

H7 = There is a significant relationship between bank profitability and GDP

H8 = There is a significant relationship between bank profitability and Inflation

FACTUAL RESULTS AND DISCUSSIONS

Table 1: Descriptive Statistics legends should be clear and apply it for all tables

Variable	Mean	Median	Mode	S.Deviation	Mini	Maxi	Count
ROE	0.223679	0.17	0	0.836757584	-1.98941	8.2	187
AS	18.49878	19.0023885	20	2.995470636	0	21	187
CA	0.099153	0.05403831	0	0.138668686	0	0.93075179	187
DEPOSITS	0.615926	0.7525742	0	0.314649972	0	1.134170027	187
AQ	0.689697	0.89742678	0	0.386306788	0	1.329529351	187
LIQUIDITY	0.111531	0.09944005	0	0.07610799	0	0.912333498	187
GDP	4.698039	4.4	4.846321	1.808657154	1.595981	7.667304	187
CPI	10.57814	9.06332737	7.444625	3.882045381	7.2	20.28612109	187

Source: Author's self-calculation

Descriptive statistics is the technique in which we perform the analysis. The analysis, which we made is relevant to the mean, standard deviation, minima, and maximum value of all of the dependent and the independent variable. So we bring first the dependent variable which is Return on equity. As it is shown in the above diagram: asset size has his highest value into the mean. The value of the mean is 18.49878. And the independent variable capital adequacy has his lowest mean value. The value of the mean is 0.099153. The highest value of the standard deviation is CPI. The value of this variable is 3.882045381. The lowest value in the standard deviation is liquidity. The value of the liquidity is 0.07610799. The minimum value of the majority of variables is 0. The maxima value is of CPI that is 20.28612109.

The correlation between the Asset size and the ROE is 0.8292. This correlation is positive and insignificant. The correlation between the capital adequacy and the ROE are -0.1424. This correlation is negative and insignificant. The correlation between the capital adequacy and the asset size are -0.0658. This correlation is negative and insignificant. The correlation between the deposits and the ROE is -0.2178. This correlation is negative and significant at a level of 1%.

Table 2: Correlation Matrix legends not clear

	ROE	AS	CA	DEPOSITS	AQ	LIQUI	GDP	CPI
ROE	1.0000							
AS	0.8292	1.0000						
	0.259							
CA	-0.1424	-0.0658	1.0000					
	0.0519**	0.3707						
DEPOSITS	-0.2178	0.1963	0.053	1.0000				
	0.0027***	0.0071***	0.4715					
AQ	-0.1645	0.0455	-0.113	0.1694	1.0000			
	0.0245**	0.5367	0.1235	0.0204**				
LIQUIDITY	-0.0365	0.1386	-0.0472	0.1245	-0.0621	1.0000		
	0.6199	0.0585*	0.521	0.0895*	0.3981			
GDP	0.0362	-0.0872	-0.1356	-0.0117	0.3135	0.1434	1.0000	
	0.6227	0.2354	0.0642*	0.874	0.0000***	0.0503**		
CPI	-0.0945	0.1422	0	0.1126	0.3001	-0.1003	-0.1951	1.0000
	0.1981	0.0522*	0.7756	0.1249	0.0000***	0.1719	0.0075***	

*, **, ***explains that correlation value is significant at 10, 05 and 01% correspondingly
 Source: Author's self-calculation

The correlation between the deposits and the asset size is 0.1963. This correlation is positive and significant at a level of 1%. The correlation between the deposits and the capital adequacy is 0.053. This correlation is positive and insignificant. The correlation between the asset quality and the ROE is -0.1645. This correlation is negative and significant at a level of 5%. The correlation between the asset quality and the asset size is 0.0455. This correlation is positive and insignificant. The correlation between the asset quality and the capital adequacy is -0.113. This correlation is negative and insignificant.

The correlation between the asset quality and the deposits is 0.1694. This correlation is positive and significant at a level of 5%. The correlation between the liquidity and the ROE is -0.0365. This correlation is negative and insignificant. The correlation between the liquidity and the asset size is 0.1386. This correlation is positive and significant at a level of 10%. The correlation between the liquidity and the capital adequacy is -0.0472. This correlation is negative and insignificant.

The correlation between the liquidity and the deposits is 0.1245. This correlation is positive and significant at a level of 10%. The correlation between liquidity and asset quality is -0.0621. This correlation is negative and insignificant. The correlation between the GDP and the ROE is 0.0362. This correlation is positive and insignificant. The correlation between the GDP and the asset size is -0.0872. This correlation is negative and insignificant.

The correlation between the GDP and the capital adequacy is -0.1356. This correlation is negative and significant at a level of 10%. The correlation between the GDP and the deposits is -0.0117. This correlation is negative and insignificant. The correlation between the GDP and the asset quality is 0.3135. This correlation is positive and significant at a level of 1%. The correlation between the GDP and the liquidity is 0.1434. This correlation is positive and significant at a level of 5%.

The correlation between the CPI and the ROE is -0.0945. This correlation is negative and insignificant. The correlation between the CPI and the asset size is 0.1422. This correlation is positive and significant at a level of 10%. The correlation between the CPI and the capital adequacy is 0. This correlation is positive and insignificant. The correlation between the CPI and the deposits is 0.1126. This correlation is positive and insignificant. The correlation between the CPI and deposits is 0.1126. This correlation is positive and insignificant. The correlation between the CPI and the asset quality is 0.3001. This correlation is positive and significant at a level of 1%. The correlation between the CPI and GDP is -0.1951. This correlation is negative and significant at a level of 10%.

The variance inflation factor is used to measure that the independent variables are correlated with each other. Either they produce whatever problem or not. It can be checked that if the VIF is greater > than the 5, then there is a problem. If the VIF is less < then 5 at that place is no problem with the independent variables.

Table 3: VIF: Variance inflation factor Test

Variable	VIF	1/VIF
AQ	1.36	0.734079
GDPGR	1.29	0.772954
CPI	1.24	0.804539
DEPOSITS	1.1	0.910744
AS	1.09	0.917503
LIQUIDITY	1.08	0.921961
CA	1.04	0.962713
Mean VIF	1.17	

Source: Author's self-calculation

In the above table, the mean value of VIF is 1.17. This $1.17 < 10$. So there is no problem in correlation.

Table 4: LSDVM

Number of obs =	187
F(23,163) =	2.2
Prob> F	0.00023

ROE	Coefficients	P-value
AS	0.0419249	0.065*
CA	-0.6427817	0.349
DEPOSITS	-0.1806653	0.053*
AQ	-0.3820474	0.037**
LIQUIDITY	1.99E-02	0.082*
GDP	0.0375021	0.031
CPI	-0.0089412	0.592
_cons	-0.2901011	0.596

Source: Author's self-calculation

One unit change in the value of the asset size which is 0.0419249, causing a positive impact on the value of the return on assets. This value of co-eff. is significant. One unit change in the value of capital adequacy which is -0.6427817, causing a negative impact on the value of the return on the assets. This value of co-eff. is insignificant. One unit change in the value of the deposits which is -0.1806653, causing a negative impact on the value of the return on assets. This value of co-eff. is significant. One unit change in the value of the asset quality which is -0.3820474, causing a negative impact on the value of the return on assets. This value of co-eff. is significant.

One unit change in the value of the liquidity, which is 1.99E-02, causing a positive impact on the value of the return on assets. This value of co-eff. is significant. One unit change in the value of the GDP which is 0.0375021, causing a positive impact on the value of the return on assets. This value of co-eff. is insignificant. One unit change in the value of the CPI which is -0.0089412, causing a negative impact on the value of the return on assets. This value of co-eff. is insignificant.

One unit change in the value of the asset size which is 0.0419249, causing a positive impact on the value of the return on assets. This value of co-eff. is significant. One unit change in the value of capital adequacy is -0.6427817, causing a negative impact on the value of the return on assets. This value of co-eff. is insignificant. One unit change in the value of the deposits which is -0.1806653, causing a negative impact on the value of the return on assets. This value of co-eff. is significant. One unit change in the value of the asset quality which is -0.3820474, causing a negative impact on the value of the return on assets. This value of co-eff. is significant.

Table 5: Fixed Effect Model

Number of obs =	187
Number of groups	17
Obs per group	
min=	11
avg=11	0.1294
F(7,163)=	1.64
Prob> F	0.0264

ROE	Coefficients	P-value
AS	0.0419249	0.065*
CA	-0.6427817	0.349
DEPOSITS	-0.1806653	0.053*
AQ	-0.3820474	0.037**
LIQUIDITY	1.99E-02	0.082*
GDP	0.0375021	0.031**
CPI	-0.0089412	0.592
_cons	-0.1969409	0.667

Source: Author's self-calculation

One unit change in the value of liquidity, which is 1.99, causing a positive impact on the value of the return on assets. This value of co-eff. is significant. One unit change in the value of the GDP, which is 0.0375021, causing a positive impact on the value of the return on assets. This value of co-eff. is significant. One unit change in the value of the CPI which is -0.0089412, causing a negative impact on the value of the return on assets. This value of co-eff. is insignificant.

Table 6: Fixed Effect Model

Number of obs =	187
Number of groups	17
Obs per group	
min=	11
avg=	11
max =	11
Prob> chi2	0.0044

ROE	Coefficients	P-value
AS	0.0405252	0.049**
CA	-0.7922607	0.079*
DEPOSITS	-0.4982087	0.014**
AQ	-0.3749579	0.035**
LIQUIDITY	-6.11E-01	0.452
GDP	0.0391176	0.288
CPI	-0.0073069	0.663
_cons	0.0799293	0.859

One unit change in the value of the asset size which is 0.0405252, causing a positive impact on the value of the return on asset. This value of co-eff. is significant. One unit change in the value of the capital adequacy is -0.7922607, causing a negative impact on the value of the return on asset. This value of co-eff. is significant. One unit change in the value of the deposits is -0.4982087, causing a negative impact on the value of the return on assets. This value of co-eff. is significant.

One unit change in the value of the asset quality which is -0.3749579, causing a negative impact on the value of the return on asset. This value of co-eff. is significant. One unit change in the value of the liquidity, which is -6.11, causing a negative impact on the value of the return on the asset. This value of co-eff. is insignificant. One unit change in the value of the GDP, which is 0.0391176, causing a positive impact on the value of the return on assets. This value of co-eff. is insignificant. One unit change in the value of the CPI is -0.0073069, causing a negative impact on the value of the return on assets. This value of co-eff. is insignificant. One unit change in the value, which is -0.0927185, causing a negative impact on the value of the return on the average assets. This value of co-eff. is significant.

Table 7: Fixed or Random: Hausman Test

	Coefficients			
	(b)	(B)	(b-B)	Sqrt (diag (V_b-V_B))
	Fixed	Random	Difference	S.E.
AS	0.0413551	0.0405252	0.0008299	0.009119
CA	-0.7819527	-0.7922607	0.010308	0.4966769
DEPOSITS	-0.1998819	-0.4982087	0.2983268	0.2102454
AQ	-0.3062786	-0.3749579	0.0686793	.
LIQUIDITY	2.12E-01	-6.11E-01	8.23E-01	3.17E-01
CPI	-0.0140997	-0.0073069	-0.0067928	.

Source: Author's self-calculation

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients systematic

$\chi^2(6) = (b-B)'[(V_b-V_B)^{-1}](b-B)$
 = 14.50

Prob> $\chi^2 = 0.0045$

(V_b-V_B is not positive definite)

The value of the prob> χ^2 is less than 5%, then H1 will be accepted.

Our results are in the line of following studies ([Ashraf et al., 2017](#); [Lipunga, \(2014\)](#); [Abbasoglu et al., 2007](#); [Francis, 2013](#)) these studies also suggested that there is a significant relationship between bank profitability and asset size of the firm and larger banks have the high Return on asset (ROA).

CONCLUSION

In the emerging environment of the banking sector, profitability is the main principle of the banks. This investigation is conducted to examine the profitability of the banking sector of Pakistan. For this intention fixed effect model (Panel data set) is being functioned on data of acquired 17 banks' financial statements over the time period 2003 to 2018. Our outcomes showed that asset size has a major and positive impact on the bank's profitability.

Results also revealed that larger banks have a high Return on assets (ROA). on the other hand, the affirmative and weighty variable of asset size indicates the economies of scale. It is found capital adequacy ratio has an insignificant impact on Return on asset (ROA) which indicates that equity/total asset negative relation with risk disclosure and less ability to measure the ability of the firm to control losses.

The positive impact of the factor asset quality (loan/total asset) showing the bank appropriately manages its credit risk power and handles estimation and valuation of the risk. Liquidity (liquid asset/total asset) of the bank also revealing the good sign of holding the liquid asset in return getting high profit by properly tackling cash. The bank is greatly affected by the significant liquidity factor link with the higher profitability of banks. Deposit (deposits/total asset) has a positive and significant impact on the bank's profitability showing the main source of bank and lowers the cost of funds. Besides this macro-economic factor Gross domestic product positive and significant association on the bank's profitability. Our

suggestion is to properly function on the significant factors for getting higher returns and profit and boost up the efficiency of the banking industry of Pakistan.

LIMITATIONS AND STUDY FORWARD

The limitation of this study is, as we covered seventeen commercial banks whereas broader picture also can be covered by having more banks such industrial banks, exchange banks agricultural banks, and utility banks so for further research studies above said banks also can be considered in order to understand the broader picture of banks under one umbrella.

ACKNOWLEDGMENT

Authors' will get financial support for publishing to this manuscript from the institute under research fund once this paper will publish.

AUTHOR'S CONTRIBUTION

Dr. Khurram and Dr. Ramyar were responsible for carrying out the overall research and report preparation as a whole, while Miss Fairoz and Dr. Mamta subsidized in the data collection and analysis whereas Mr. Devender carried out analysis part as well and proofreading.

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