

## Influence of Bank Specific and Macroeconomic Factors on Profitability of Commercial Banks: A Case Study of Pakistan

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### Abstract

The intended aim of study is to identify the influence of bank specific and macroeconomic factors on profitability of commercial banks in Pakistan over the period of 2007 to 2011. Return on assets and return on equity are used as dependent variable. Deposit to assets, bank size, capital ratio, net interest margin and nonperforming loans to total advances are utilized as bank specific measures. Inflation, real gross domestic product and industry production growth rate are macroeconomic factors. By employing descriptive statistics, correlation and regression analysis researcher conclude that bank size, net interest margin, and industry production growth rate has positive and significant impact on the ROA and ROE. Nonperforming loans to total advances and inflation have negative significant impact on Return on assets while real gross domestic product has positive impact on ROA. Capital ratio has positive significant impact on ROE.

**Key words:** Return on Assets, Return on Equity, Inflation, Capital Ratio, Nonperforming loans

### 1. Introduction

Banking industry is an essential part of the economy; it plays an important role as intermediary to serve the economy. Growth in economy is influenced by the performance of banking sector. Recently banking institutions are facing the environment that is changing rapidly and competition is increasing at local as well as international level. Banks are the primary source of funds for general public, government administration together with business industrial sectors. Countries whose banking system is going into profit can successfully manage the financial distress and make a better contribution in the consistency of financial system. Therefore it is useful to investigate what are the major factors which can affect the profitability of banks. Banks use our saving to make them productive equipment by applying investment techniques. If a financial system of any economy is productive then it gives progress to the profit, attract more savings from customer and provide the better quality services to the public.

A lot of changes have been occurred in banking sector of Pakistan since 1947. State bank of Pakistan Act 1956 encouraged the private sector to establish the financial institutions. On June 1974 all bank of Pakistan nationalized by the government. Privatizations in 1992 attract the local as well as foreign investor to establish banks in Pakistan. Banking sector of Pakistan is the mixture of Public, Private, specialized, Islamic and foreign banks. At the end of 2011 there were 38 listed banks in Pakistan. Which consist on group of 5 public banks, 22 private banks, 7 foreign banks and 4 specialized banks. State Bank of Pakistan is the regulatory authority of these banks. Total assets of banking sector at the end of 2011 were Rs 8295 billion. This means 15% growth as compare to 2010. Total liabilities of overall banking industry was at the end of 2011 RS 7486 billion which were Rs 6490 billion in 2010 so it also showed 15% growth. Total deposits increased form Rs 5.5 trillion to Rs 6.3 trillion in 2011 that indicate 14.7% growth rate. Growth rate of total advances was 1% in 2011. At the end of 2011 profit after tax showed a growth of 58.3%.

#### 1.1 Problem Statement

Banking is a rapidly growing industry. Every bank is trying to enhance overall performance plus profits to occupy a better position in financial system. This study will identify the key elements that have impact on the performance of banks.

#### 1.2 Aim of study

The aim of this research is to determine and monitor bank specific or internal as well as macroeconomic or external

determinants of profitability and extent to which they affect the profitability of commercial banks of Pakistan for a period of 2007 to 2011.

### *1.3 Objectives of study*

Primary objective of this study is to give the answers of following questions.

- (1) What are the main bank specific internal factors that affect the profitability of commercial banks in Pakistan from 2007 to 2011?
- (2) What are the main macroeconomic external factors that affect the profitability of commercial banks in Pakistan from 2007 to 2011?

### *1.4 Significance of Study*

This study does not only helpful for the bank managers but also valuable for other stakeholders such as public, government, State bank of Pakistan and other financial institutions. This extensive study of determinants of profitability of commercial banks is most important from point of view of managerial together with regulatory views. From the managerial view it is important to investigate the determinants associated with success to figure out the actions that can push up the performance of banks. Regulators of banks are interested in protection along with soundness of the banking system and they are protecting the confidence of public. Other stakeholder can also get benefit from this study to know that how banks are performing. Whether they should put their money in banks or invest in other business and what factors that can affect performance of banks. Next Section will explain the literature review of other studies related to this topic from all over the world. Section 3 will explain the data and research methodology while section 4 reveals the results & discussions and last sections describe the conclusion and recommendations.

## **2. Literature Review**

This section presents the review of the previous studies that determine the factors to affect the performance of banks in a specific country or in a group of countries. Most of the researchers used both internal and external variables in their studies.

Ali, Farhan, and Zafar (2011) examined the bank specific and macroeconomic determinants of profitability for commercial banks in Pakistan. They use ROA and ROE as profitability measures. This study used the descriptive statistics, Pearson correlation and regression analysis as Statical techniques. They suggested that ROA has a positive relationship with size, total deposits to total assets ratio and operating income/total assets ratio, on the other hand ROA has negative association with capital and credit risk. ROE is positively related with capital, operating income/total assets ratio and total deposits to total assets ratio. GDP is one factor that has significant impact on the profitability of banks.

Alper and Anbar (2011) conducted a study to find out what are the factors that affect the profitability of banks in turkey during the period 2002 to 2010. They used the panel data analysis. They find that ROA is positively affected by Asset size, Non-interest income/assets and Real interest rate, while ROA is negatively affected by loan/assets. Other factors such as capital ratio, deposits/assets, net interest margin, GDP and inflation are not much associated with banks profit.

Anum and Qudous (2012) analyzed the determinants of profitability of banks by utilizing data from 2005 to 2009 on quarterly basis. They applied the regression technique to find out the result. They found that internal factors such as credit risk, interest income and advances have significant impact on the profitability of banks. Bank size has not significant impact on the profits. This study showed no external factor form import, export, discount rate and inflation much associated with bank profits.

Ayadi and Boujelbene (2012) they discussed in their study the factors of profitability of Tunisian banking sector for the period 1995-2005. They found that Bank size significantly and credit risk and liquidity insignificantly associated with the profits of Tunisian banks. External factors GDP and Inflation have negative relationship with profitability of banks.

Shaher, Kasawneh, and Salem (2011) conducted their study in Middle East region to examine the factors which have influence on the overall performance of the banks. They implied the factor analysis techniques (PCA). They proposed that bank characteristics (Bank size, size & duration of deposits & duration of loans, concentrations in lending activity, Net charge off loan ,bank capital and bank operating cost) has significant impact on the profitability on

banks.

Safarli and Gumush (2012) conducted a study to determine the internal & external factors affecting the Azerbaijan banking sector. CAMELS' model was used to evaluate the performance and Panel data regression analysis was used to determine the determinants of profitability. They concluded that Inflation and GDP has negative relationship with performance of banks.

Ali, Zakaria, and Husni (2011) conducted their study to evaluate the factors affecting the Jordan Islamic banks over the period 2005-2009. Multiple Linear regression model was applied in this study and concluded that ROE has significant relation with total equity/total asset and total income/total asset while has unfavorable connection with bank size, total liability/total assets, GDP, inflation and exchange rate.

Sufian and Razali (2008) conducted their study in Philippines to investigate the factors associated profitability of banks covering the period 1990 to 2005. In this study Multivariate regression model was used. Their study showed that profitability of banks has negative association with bank size, credit risk and expenses management on the other hand having a positive relationship with non-interest income, capitalization and inflation. While the other macroeconomic factors such as Money supply, stock market capitalization has insignificant impact on the performance of banks.

Saona (2011) investigate the relationship of bank specific & macroeconomics variable with profitability of US banking industry over the period of 1995-2007 with the help of GMM system estimator. He concluded that only one factor capital ratio has negative significant relationship with performance of banks. Bank size due to diseconomies of scale has negative relationship with profitability of banks.

Qin and Pastory (2012) conducted their research on Tanzania banking sector from 2000-2009 by applying regression model and found that liquidity and assets quality has positive relationship while non performing loan and capital adequacy has negative relation with performance of banks.

Babalola and Abiodun (2012) examined the factors affecting the performance of banks in Nigeria .Three decomposed models with aggregate model were applied .This study depicts the result in two ways as in short run Capital adequacy ratio while in long run size of bank has significant impact on the performance of banks. By using ANOVA test they observed that there is no major difference among the commercial banks of Nigeria.

Atif, Shafique, and Razi (2012) investigate the determinants of profitability of Islamic banks in Pakistan. They used five variable inflation, GDP, industrial production rate, unemployment and interest rate in their research. By applying regression analysis they revealed that only interest rate is the factor that has significant impact on Return on assets and Return on equity.

Azam and Siddiqui (2012) observed the profitability of foreign & domestic banks in Pakistan. They found that foreign banks are more profitable as compared to domestic banks in Pakistan and also concluded that inflation and GDP more affected the domestic banks as compared to foreign banks.

Olwency, and Mamba (2009) used the capital adequacy, liquidity management, assets quality and income diversification as internal factors while foreign ownership and market concentration used as market factors that affect the banking sector of Kenya. By employing multiple linear regression method they concluded that all internal factors have significant Impact on bank's profit while no market factor effect the performance of banks.

Javaid, Anwar, Zaman and Gafoor (2011) investigated the factors that have great influence on the profitability of banks in Pakistan from 2004 to 2012. They employed Pooled ordinary least square method to conclude result by using Equity, loans, deposits as independent and ROA as dependent variable. They found that equity and deposits have significant impact on ROA. Loans have insignificant but positive relation with ROA.

Gul, Irshad and Zaman (2011) examined the bank specific and macroeconomic factors that affect the profitability of banks in Pakistan form 2005 to 2009. They used assets, equity, loans and deposits as independent variables while ROA, ROE and NIM as dependent variables. By employing pooled ordinary least square method they concluded that banks with higher assets, deposits, loans and equity has higher profitability.

Now one thing is clear from this literature review that there are a lot of internal and external factors that can affect the profitability of commercial banks .So in this study researchers will try to find out the major factors that have significant impact on the profitability of commercial banks in Pakistan from 2007 to 2011.

### 3. Data and Methodology

Policy and Hunger (2004) refers methodology as a way to obtaining, arranging and examining the data. Research methodology is an investigation strategy used to systematically resolve the issues related to study. Accumulation of

facts and figure is called data. Primary and secondary are two ways to collect the data. Primary data is first hand data that we collect first time form observations or individuals. Secondary data is second hand data which we use in research that has been gathered already.

### 3.1 Population

Population consist of 38 commercial banks which are listed at State Bank of Pakistan at the end of 2011

### 3.2 Sample

Out of 38 commercial banks 25 commercial banks are selected as sample by researchers for the purpose of this study on the basis of convenient sampling.

### 3.3 Data sources

Researcher uses the secondary data source. Researcher extracted the data of the year 2007,2008,2009,2010 and 2011 Data of bank specific variables were collected from financial statements of concerned banks which are available at their websites and statistical bulletin of financial statement analysis issued by state bank of Pakistan to accomplish the research.

In this study Researcher uses the E-view software to adopt the statistical techniques. Researchers used three techniques.

1. First one is descriptive statistics to calculate mean. Median and standard deviation of all the variables.
2. Correlation analysis to check the dependence of variables upon each other.
3. The regression analysis technique employed to check the significant or insignificant impact of independent variable on the dependent variable.

### 3.4 Variables

#### 3.4.1 Dependent Variables

##### 1. Return on assets

$$\text{Return on Assets} = \frac{\text{Net Profit after tax} \times 100}{\text{Total Assets}}$$

Alksim (2005), Bashr and Hasan (2004), Ban Nacur (2003) and Kosmidou (2008) used ROA as dependent variable. This exhibits the actual effectiveness associated with administration in order to making use of the overall asset for getting the return from them. This show the actual earnings produced from each rupee of asset. It is best way of measuring profitability.

##### 2. Return on equity

$$\text{Return on Equity} = \frac{\text{Net Profit after tax} \times 100}{\text{Total Shareholder equity}}$$

Laevn and Majnoni (2003) and Davis and Zhu (2005) used ROA as dependent variable in their study. It displays the rate of return which bank management gets by investing the money of stockholder in productive projects. This ratio also shows the risk of banks for capitalizing its assets how much relying on the funds of shareholders.

#### 3.4.2 Independent variables

##### 1. Internal determinants

These measures are within the control of bank's management. They are calculated from the balance sheet and income statement of banks.

##### 2. Bank size

Wasiuzaman and Tarmzi (2010) and Brismis and Dlis (2005) It is measured by taking the natural logarithm of overall assets of a bank. Size oo bank is helpful to catch the possible economies of scale. By large size banks can save their cost specially the fixed cost (research & development), banks whose size is large can pay less for their inputs.

### 3. Capital ratio

$$\text{Capital Ratio} = \frac{\text{Total shareholder equity} * 100}{\text{Total Assets}}$$

Abruand mendes(2002), Demrguç-Kunt and Huzingha (1999) and Bashr (2000) used this as independent variable. This shows that how much participation of equity in total assets. Increase in capital ratio refers to the amount of own funds available to support a bank's business and therefore bank capital act as safety net in the case of adverse development. Higher bank's capital ratio can take the advantage of higher profitability.

### 4. Nonperforming loan to advances ratio

$$\text{Nonperforming loan to advances} = \frac{\text{Nonperforming Loans} * 100}{\text{Total Advances}}$$

Vong and hoi (2009), Ramadan, kilani and kaddumi (2011) and Ali,Akhtar and Sadaqat (2009) used it in their research .It express the quality of loan portfolio of a bank. It shows percentage of NPL as gross advances made by a bank and evaluates assets quality based on loan portfolio. It indicates the credit quality. Increased exposure to credit risk is normally associated with decrease in firm profitability. Banks can improve profitability by screening and monitoring of credit risk and such policies involve the forecasting of future level of risk.

### 5. Deposits to assets ratio

$$\text{Deposit to Total Asset} = \frac{\text{Total Deposit} * 100}{\text{Total Assets}}$$

Dietrich and Wanzenried(2009), Javaid et al (2011) have already used it .This ratio exhibits the actual portion of total deposits to total assets. Deposits are the fundamental source for the financing of banks. While the deposits increase bank's profitability increases. But it depends upon how bank is converting its liability of deposits into the earning assets.

### 6. Net interest margin

$$\text{Net Interest Margin} = \frac{\text{Total Interest Income} - \text{Total Interest expense} * 100}{\text{Total Assets}}$$

It shows the income capacity of banks by its primary action by employing assets. It presents the net interest as a difference between the interests paid on the deposits and received on advances.

#### 3.4.3 External determinants

Which are beyond the control of management of a bank.

##### 1. Inflation

Levine, Boyd and Smith (2000), Haron and Azmi (2004) used inflation in their study. Inflation represents change in the general price level of goods and services in economy. It can affect the ROA & ROE. Inflation is a significant factor that can affect the costs and revenue of banks. If the banks predict the inflation in best manner then they can adjust interest rates that can provide good return on loans. As it can increase or decrease the interest rates.

##### 2. Real Gross domestic product

Uhomobhi (2008) Ali et al (2011) has already used it as independent variable GDP is a pivotal Environmental condition that can change the demand and supply of loans and deposits in the country. As the high GDP attract the investor to invest in country that increase the business of banks, low GDP decreases the return of banks and affect the loan portfolio of banks.

##### 3. Industry production growth

Atif et al (2012) used in their research. This measure shows the total percentage add up in the output of industrial sector (includes manufacturing, mining, and construction).

### 3.5 Empirical Model

$$ROA = \beta_0 + \beta_1 DA + \beta_2 NIM + \beta_3 NPL + \beta_4 CR + \beta_5 INF + \beta_6 GDP + \beta_7 IPGR + \mu$$

$$ROE = \beta_0 + \beta_1 DA + \beta_2 NIM + \beta_3 NPL + \beta_4 CR + \beta_5 INF + \beta_6 GDP + \beta_7 IPGR + \mu$$

Where,

ROA represent the Return on Asset

ROE represent the Return on Equity

DA represents the Deposit to Total Asset Ratio

NIM represents the Net Interest Margin

NPL represent the Non performing loan to total advances Ratio

CR represents the Capital Ratio

INF represents the Inflation

GDP represent the Gross domestic product

IPGR represent the Industry Production Growth Rate

$\mu$  represent the error term

$\beta$  represents the intercept

## 4. Results and Discussions

Tables 1, 2 and 3 explain the results that have been found by applying descriptive statistics, correlation and regression technique. Descriptive statics of study are given in table 1. The values of Mean, Median, Maximum, Minimum and standard deviation of dependent and independent variables of sample of 25 firms are calculated from 2007 to 2011. Mean tells the central location of observations and standard deviation describes the variability. Mean is also stated as a measure of central destination (Becker 1995). The arithmetic mean is description of the typical value of a series of observations, which is calculated as the sum of all the numbers in the series divided by the count of all numbers in the series. On the other hand standard deviation is a measure of deviation of data from mean. If Standard deviation of data is higher then range (difference between the highest and lowest values) of values is also higher within the sample (Ghazal). Median tells about the middle value of the set of value.

The mean of dependent variables return on assets & return on equity is 0.16312 & -0.27704 respectively. Form ROA point of view it is indicated that averagely Pakistani banks are getting 16 rupees on utilizing the assets of 100 rupees, but the mean of ROE is in negative. Which displays that banks management is not utilizing the funds of equity in a good way. On the other hand standard deviations of both variables are 2.03768 & 1.609736 respectively which show that ROA has more fluctuations as compared to ROE. ROA has a wide range of values from -6.4 to 3.74, its Median is 0.69. Range of ROE is from -14.74 to 0.66 and its median value is 0.07.

Five internal and three external variables are used in analyses. Mean of deposits to total assets ratio is 74.70538 and its standard deviation is 9.725829, which shows good assets management. of banks. Banks are attracting depositor when deposits of banks increase then their lending capacity increase; due to this boost total assets increases. Mean of nonperforming loan to total advances is 11.99668 and its standard deviation is 10.11822 which is not a good sign for banks because it is high percentage of nonperforming loans to advances. Banks can face the credit risk. Banks are not managing loan portfolio very well. Average of capital ratio is 12.46892 bank in our sample who has maximum 53.31 capital ratio and least capital ratio is -3.1 and its standard deviation is 9.256915 this is good for banks, average of this ratio indicate that banks have sufficient funds to handle the negative situations in banking business.

INF, GDP and IPGR are three external variables are used in this research. Mean of inflation in these five years of Pakistan is 13.36% as compared to china and India it is very high. Average of inflation in china and India is 5.53% and 8.87% respectively. Standard deviation of inflation is 4.116858. Its maximum value is 20.3 and minimum value is 7.6. Mean of GDP is 3.04% which in china is 10.5% and India 7.8%. High GDP growth is good for country. GDP has effect on many factors which are closely associated with supply and demand for loans and deposits Maximum value 3.7% and minimum value is 1.7%. On the other hand standard deviation of GDP is 0.736305. The mean of Industry production growth rate is 3.72% and standard deviation is 3.266501. Mean of IPGR is good in Pakistan which is not very low. In India IPGR is 4.8%, higher IPGR is better for bank's profitability.

Table 2 shows the result of correlation of independent variables. BS represent the Banks size that is natural log of total assets has the negative association with the capital ratio, inflation and industry production growth rate. It explains that as the inflation and industry production growth rate increases banks total assets which mostly consist on the

advances are decreased, While BS has positive relation with deposits to assets ratio, GDP, net interest margin and NPL. Its means that as the Banks size increases its NPL and interest margin also increases and in the high GDP the bank's assets increases. Capital ratio has inverse relation with net interest margin, industry production growth rate and NPL But having the direct relation with GDP and INF. GDP has an unfavorable association with inflation and net interest margin.

Table 3 exhibits the findings of regression analysis. To examine the impact of internal and external factors on the profitability of banks researcher used regression model. That is already used by many researchers Ali et al (2011) and Anum and Qudous (2012). R Square for ROA is 0.5084 which means that 50% of sample describes ROA, While 50% variation in dependent variable is explained by the independent variable of the model. The 50% variation in ROA remains unexplained by the independent variables of the study. This model has F statistics 14.9973. F-Statistics shows the overall significance of the model. Its Constant coefficient is a negative value, which is -21.5138. This model generates the higher R square & F statistics as compared to ROE. R Square for ROE is 0.30838. This means that 30% variation in dependent variable is explained by the independent variable of the model. The 70% variation in ROA remains unexplained by the independent variable of the study. This model has F statistics 6.46528. This model generates the low R square & F statistics as compared to ROA. BS has positive and significant impact on the both performance measure of banks. This result is consistent with Ali et al. (2011), Alpr and Anbar (2011), Ayadi, and Boujelbene (2012) Shaher et al. (2011) Babalola, and Yisau (2012) but not consistent with Anum and Qudous (2012) and Sufian, and Razali (2008). ROE has negative association with Bank size. It is similar to the result that is obtained by Ali et al (2011). This would put significant impact in this way large banks pay the fewer amounts for their inputs. On the other hand large banks give maximum return by minimizing their fixed cost. Capital ratio has positive but insignificant relation with return on assets that is consistent with the result of Alpr and Anbr (2011) but not consistent with Rahman, Farzand, and Iqbal (2012). Empirical findings of research suggested that capital ratio has positive significant impact on ROE. It means that banks with larger equity generate more profit. This result contradict the findings of Dietrich and Wanzenried(2009) and Saona (2011), on the other hand consistent with Goggard, Molyneux, and Wilson(2004). This positive impact indicate that as equity increases it gives better return to the banks. Deposit to total assets has positive but insignificant impact on the ROA and ROE which are performance measured. Supported with Alkassim, F. A. (2005) and contradicts the suggestions of Rahman et al. (2012). Net interest margin ratio has positive and significant impact on the firm performance. it means that if bank is paying less interest expense as compared to interest income they can get good return from assets and shareholder equity. It is not consistent with result Alper, and Anbar (2011). Nonperforming loans to total advances has negative but insignificant impact on ROE while has unfavorable and significant relation with the ROA. That is supported by the Sufian and Razali (2008) and not consistent with the Qin & Pastry (2012) who find that NPL has positive relation with performance. Form the external determinants inflation has significant impact on ROA but insignificant impact on the ROE. GDP has positive but insignificant impact on the ROE and positive significant impact on the ROA. GDP has positive relation with profitability new business opportunities can be produced in a country as GDP going up. Industry production growth rate has positive and significant impact on the ROA and ROE. It indicates that rise in the production of industry is increasing the profitability of banks.

## 5. Conclusions and Recommendations

This study has investigated the influence of bank specific and macroeconomic factors on profitability of commercial banks in Pakistan over the period of 2007 to 2011, measured by return on assets (ROA) and return on equity (ROE). This part demonstrates the actual results gathered from this study. Firstly, among the two profitability measures, ROA model generates the high R-square and F Statistic as compared to ROE. This explains that the bank specific and macroeconomic variables selected for this study has given a much better explanation of return on assets rather than return on equity. One of the important findings from this study is that some of the determinants have significant influence on profitability. From the regression models, it is seen that BS, represented the natural log of assets of banks, is found to have positive significant impact on the profitability. Nonperforming loans represent the credit management having a negative insignificant impact on the ROA but negative significant affect on ROE. Other bank specific measures Deposit to total assets have favorable but insignificant impact on both profitability measures ROA and ROE. Capital ratio has significant association with ROE but insignificant with ROA. Net interest margin ratio has positive and significant impact on the firm performance.

Macroeconomic appears to promote greater earnings. Specifically, the macroeconomic environment IPGR is observed to have a positive and significant influence on both profitability indicators ROA and ROE. Higher the IPGR increase the profit of business. Higher growth rate of GDP seems to have a strong positive and significant impact on performance measure ROA and GDP has positive impact on ROE. Third macroeconomics factor inflation which have insignificant but positive impact on ROE while has strong negative association with ROA. This means that in high inflation there is decline in the profitability of banks.

### 5.1 Recommendation

Recommendations are that further research addressing a longer period of time with having a broader selection of financial and economic conditions can expose some new issues. This study can be extended by including more banks or by including all banks around the globe. Future research could include more variables such as taxation and regulation indicators and exchange rates. A comparative analysis of Islamic banking and conventional banking may be included in further research. There is also an opportunity to study the determinants of Banking System for Foreign and Domestic Banks in Pakistan

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## List of Tables

*Table 1*  
 Descriptive statistics

	ROA	ROE	DA	NIM	NPL	CR	IPGR	GDP	INF
Mean	0.16312	-0.27704	74.70568	3.2704	11.99968	12.46792	3.72	3.04	13.36
Median	0.69	0.07	77.45	3.44	8.98	9.39	4.6	3.1	13.4
Maximum	3.74	0.66	90.85	7.17	51.56	53.31	8	3.7	20.3
Minimum	-6.4	-14.74	42.17	-3.69	0	-3.1	-1.9	1.7	7.6
Std. Dev.	2.03768	1.609736	9.726829	1.777054	10.11882	9.259615	3.256136	0.733968	4.103794
Skewness	-1.40506	-6.75783	-1.18291	-0.56239	1.428341	1.615714	-0.56964	-0.93737	0.410206
Kurtosis	4.764545	56.21897	4.11225	4.114829	5.298091	6.255558	2.41538	2.523739	2.454307
Jarque-Bera	57.34565	15702.77	35.59463	13.06235	70.00965	109.5874	8.540275	19.48669	5.056538
Probability	0.000009	7E-08	0.00098	0.001457	0.000004	0.000067	0.01398	0.000059	0.079797
Sum	20.39	-34.63	9338.21	408.8	1499.96	1558.49	465	380	1670
Sum Sq. Dev.	514.8655	321.3148	11731.79	391.5823	12696.43	10631.82	1314.7	66.8	2088.3

*Table 2*  
 Correlation

	BS	CR	DA	GDP	INF	IPGR	NIM	NPL
BS	1	-	-	-	-	-	-	-
CR	-0.5857	1	-	-	-	-	-	-
DA	0.3579	-0.7699	1	-	-	-	-	-
GDP	0.0677	-0.0391	0.0207	1	-	-	-	-
INF	-0.0063	-0.0040	0.0210	-0.9405	1	-	-	-
IPGR	-0.0795	0.1105	-0.0096	0.0663	-0.2835	1	-	-
NIM	0.1721	0.1015	-0.0044	-0.1404	0.1389	0.0270	1	-
NPL	0.0280	-0.120	-0.0638	0.0561	0.0484	-0.1752	0.5371	1

*Table 3*  
*Regression Analysis*

Variables	ROA		ROE	
	Return on asset		Return on equity	
	Coefficient	t-Statistic	Coefficient	t-Statistic
C	-21.51386	-4.63211	-14.90129	-3.42393
BS	0.567895	4.26875*	0.292135	2.343456*
DA	0.005427	0.23146	0.039806	1.811898
CR	0.013426	0.466552	0.076139	2.823586*
DGP	2.042406	2.77015*	0.828489	1.199191
INF	0.306536	-4.84728*	0.138925	1.078371
IPGR	0.135363	2.430446*	0.116337	2.229186*
NIM	0.240534	2.503806*	0.235676	2.618066*
NPL	-0.084012	-4.84728*	-0.023959	-1.47525
R-squared	0.50843		0.308381	
F-statistic	14.99732		6.465289	
Observations	125		125	

\*Level of significance of T-statistic is 5%

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