CAPITAL UNIVERSITY OF SCIENCE AND TECHNOLOGY, ISLAMABAD

Micro and Macroeconomic Determinants of Profitability: The Case of Bank Sector

by

Muhammad Awais Akram

A thesis submitted in partial fulfillment for the
degree of Master of Science

in the

Faculty of Management & Social Sciences
Department of Management Sciences

2018

This thesis is dedicated to my Parents, who encouraged me when dreams broke down my Friends and my Teachers

CAPITAL UNIVERSITY OF SCIENCE & TECHNOLOGY

ISLAMABAD

CERTIFICATE OF APPROVAL

Micro and Macroeconomic Determinants of Profitability: The Case of Bank Sector

by

Muhammad Awais Akram

(MMS143030)

THESIS EXAMINING COMMITTEE

S. No.	Examiner	Name	Organization
(a)	External Examiner	Dr. Syed Zulfiqar Ali Shah	IIU, Islamabad
(b)	Internal Examiner	Dr. Muhammad Mazhar Iqbal	CUST, Islamabad
(c)	Supervisor	Mr. Nasir Rasool	CUST, Islamabad

_____
Mr. Nasir Rasool
Thesis Supervisor
November, 2018

_____
Dr. Sajid Bashir
Head
Dept. of Management Sciences
November, 2018

_____
Dr. Arshad Hassan
Dean
Faculty of Management & Social Sciences
November, 2018

Author's Declaration

I, **Muhammad Awais Akram** hereby state that my MS thesis titled "**Micro and Macroeconomic Determinants of Profitability: The Case of Bank Sector**" is my own work and has not been submitted previously by me for taking any degree from Capital University of Science and Technology, Islamabad or anywhere else in the country/abroad.

At any time if my statement is found to be incorrect even after my graduation, the University has the right to withdraw my MS Degree.

(Muhammad Awais Akram)

Registration No: MMS143030

Plagiarism Undertaking

I solemnly declare that research work presented in this thesis titled "**Micro and Macroeconomic Determinants of Profitability: The Case of Bank Sector**" is solely my research work with no significant contribution from any other person. Small contribution/help wherever taken has been dully acknowledged and that complete thesis has been written by me.

I understand the zero tolerance policy of the HEC and Capital University of Science and Technology towards plagiarism. Therefore, I as an author of the above titled thesis declare that no portion of my thesis has been plagiarized and any material used as reference is properly referred/cited.

I undertake that if I am found guilty of any formal plagiarism in the above titled thesis even after award of MS Degree, the University reserves the right to withdraw/revoke my MS degree and that HEC and the University have the right to publish my name on the HEC/University website on which names of students are placed who submitted plagiarized work.

(Muhammad Awais Akram)

Registration No: MMS143030

Acknowledgements

All praises and thanks are for Almighty Allah, the Merciful, the only Creator of the universe and the Source of all knowledge and wisdom, who blessed us with health, thoughts, talented teachers and helping friends.

I feel highly privileged to express my gratitude to my sincere and honorable supervisor Mr. Nasir Rasool, Capital University of Science & Technology for his keen interest, untiring guidance, creative criticism and sympathetic attitude throughout the study. Without his enthusiastic scholarly guidance, this thesis would not have seen the light of day at best in its present form.

Abstract

The purpose of this study is to examine the impact of micro and macro economic variables on banks performance. The sample of the study consists upon 20 banks listed on Pakistan Stock Exchange for the period of 2003-2016. The study used panel data and applied OLS regression model. Bank specific variables are bank size, capital adequacy, credit risk, management efficiency, liquidity risk and business mix indicator. Macro economic variables are interest rate, money supply and industrial production. The study conclude that industrial production, business mix indicators, bank size, capital adequacy and credit risk have significant impact on the profitability of banking sector in Pakistan.

Keywords: Micro and macro variables, Bank profitability.

Contents

List of Tables

Chapter 1

Introduction

Investors are always concerned to the profitability of the organization. There are different internal & external factors which can affect the profitability of the organization. Prior researchers have examined the association between profitability and macroeconomic variables professed that large amount of research are being done on this subject. Macroeconomic research while explaining a connection between risk and its expected result recommends that risk can be specified in microeconomic terminologies with the use of certain characteristics of underlying security. Empirical learning shows that profitability has a direct relation to the characteristics of firm like cash flow/price, earning/price, size and some other financial indicators like book to market equity.

1.1   Theoretical Background

Considerable research has investigated the macro and micro-economic variables and profitability factors; nevertheless, the literature reveals a glitch of concepts and has high room for investigation. It is still a challenge in banking sectors to blow away negative confusion and contribute positively in stabilizing the financial system. However, confusion in the prior literature, has failed in explaining a stabilized financial system.

An effectively progressing financial management system is a key success factor for the business that is being responsive of the tits and tats of businesses financially and it is also one the factors that a good business needs in order to grow financially with excellent performance. Business owners should be able to balance income, expenditures and the debts in a manner that it does not cause any effect on the sustainability and growth of the organization financially. Ross (1976) claimed that the normal return of a monetary resource can be displayed as a direct capacity of different full scale financial elements or hypothetical market records. Kwon and Shin in 1999 articulated that a country's economy influences the execution of associations and by expansion the most powerful full scale financial factors are GDP, loan fees, swelling and market hazard.

Financial performance of the organization is assessed on the basis of its tendency to accompany a certain level of achievement. Prior evidence has shown that both the micro and macro factors have a great influence on performance. Micro factors include capital size, size of liability, size of banks credit, policy rate of interest, risk exposure, quality management, labor productivity, bank size and age, ownership and concentration and the structure of the organization that influence the financial performance of the bank. On the contrary, macro factors are inclusive of only inflation and the economic growth that over all affects the financial performance of the industries. However, there are certain other factors that have a considerate role in determining the financial performance, for instance, certain income and operating expenditure attributes, capital law, vigorous, multi-functional reporting and analysis tool that all must be put together to utilize the profit information in a very actionable manner (Vong & Chan, 2007).

Almajali et al. (2012) argued that there are many different tools to measure financial performance of the organization. ROS (Return on Sale) disseminates information on the relation of the company's income depending on its sales, while, ROA (Return on Assets) describes the company's ability to fully make use of its assets and ROE (Return on investment) explains the investments that in return investors take. The company gets the return on its equity and it is also one of the most important factors in taking decisions for the successful stock investments

(Livy, 2013). ROE (Return on Equity) explains how the company turns its investor's contribution or income to its profit. Also it can be explained through analyzing what percentage of the profit a company gets from every financial division of equity that is being invested within the company. If the company is a big corporation then the equity is named as "return on stockholders" and the same principles are being followed regardless of the fact that how is the business been structured. On equity return higher is a good preference (Price, 2012). ROE do not mention such specifications like how much of the amount should be distributed among shareholders; also it depends on the decision of the company regarding the dividend payments and the rise of stock price. It's a good sign of indication that the company is now capable enough in generating the return smoothly despite of the fact that the risk of the investment is being done (Berman, Knight and Case, 2013). ROA support will be required to measure the financial performance of the organization.

1.2 The Effect of Micro and Macroeconomic Factors on Financial Performance

There are two broad categories of economic variables namely; internal or micro and external or macro factors. These two factors actually affect the financial institutions performance in terms of profitability (Sehrish et.al 2011). Internal factors are greatly influenced based upon decision of the banks management and the objectives of the policy. Internal factors include bank size, risk management, capital and expenses that influence the bank profitability management directly, as most of this information is radically confidential. Apart from these; there are certain internal factors like credit or liquidity that are also specific factors of bank and are related very closely to bank management specifically risk management. The need of risk management in the banking sector arises with the inherent nature of the banking business. The two main causes of bank failures are low quality of asset and the meager liquidity that are the key sources of risk in credit and liquidity

risk that attracts great focus of attention of the researchers to do an analysis on its impact on bank profitability (Staikouras and Wood, 2004).

The external factors mostly focus on the variables of macroeconomics that reflects the economic and legal environment, supporting the operations of the banks. The external factors that effect on the profitability of bank are the economical and institutional situations and background respectively. The macroeconomic environment includes inflation, rates of interest and business cycle output. The variables that are specific to industry and represents market characteristics are market concentration, industry size and ownership status (Athanasoglou et al., 2006).

Many studies have shown that external factors are mostly affected by the performance. For instance, Gompers and Lerner, (1998) explained that if the GDP growth is higher in value than it attracts more opportunities for entrepreneurs, consequently, leading to higher funds of the venture. There are many studies executed on this subject and they show that the external factors have a great affect on performance of the organization. Gompers and Lerner (1988) have claimed a direct relationship between GDP growth and the opportunities meaning if the GDP growth is higher it gives more opportunities to the entrepreneurs leading higher investment for the venture funds. Firms are being affected badly with the inflation since they hold on their investment with the passage of time between achievement and exit. Interest have also shown significant impact on the equity as it calculates and determines the cost of borrowing that has its impact on the return of equity (Nielsen, 2011).

1.3 Research Gap

Profitability is one of the most important purposes of financial management and to maximize the owner's wealth. A non-profitable business cannot exist whereas only a profitable business has the ability to reward its owner for a large return on investment. Hence profit earning is the main goal of business in order to ensure the sustainability of business in rapidly changing market conditions (Malik, 2011). This paper fills the gap in the literature by comprehensively analyzing the firm

specific internal factors (micro) and external factors (macro) that are affecting the profitability of banks in Pakistan as the comprehensive study in this regard has not been conducted. As banking industry is one of the components of financial system, and hence being relevant within macroeconomic context it is necessary to analyze the impact of macro factors on the performance of banking sector. The study also extends the previous research by taking into consideration the core operating activities such as firm size (S), capital adequacy (CA), credit risk (CR), management efficiency (ME), liquidity risk (LR) and business mix indicator (MB). Literature shows that most of studies in Pakistan analyzed the only a few major determinants of profitability of banking sector. The research delves the major critical internal as well as external factors (interest rate, money supply and industrial production) that are affecting the performance of banking industry of Pakistan.

1.4   Problem Statement

Notably, there is a need to conduct an intensive investigation on macro and micro economic factors in the context of profitability, specific to the banking industry. Currently, banks lack the ability to display higher profits and market shares with structured costs. They fail to reach significant levels of profitability and unveil lower bank performance. There also exits a variation in profitability from commercial level to public banks and variation also exits due to certain change profitability factors. On the other side, if it's been overcome by macroeconomics shocks, there is a certain pressure over the policy makers to strengthen the financial stakeout to avoid any such instability within the financial sector that could be immediately avoided in a time when the economy is in recession phase. The system may have to be checked if the bank's reaction is against these shocks to aggravate recession. The fact is being there that there are certain cycles and swings with in the financial institutions that actually effects the economic activities.

1.5   Research Question

- What are certain macro factors that affect the profitability of the commercial banks in Pakistan?

- What are certain micro factors that affect the profitability of the commercial banks in Pakistan?

1.6   Research Objective

The purpose of this study is:

- To observe the impacts of macro factors influencing profitability of Pakistani banks.

- To observe the impacts of micro factors influencing profitability of Pakistani banks

1.7   Significance of the Study

The findings of this study are of particular importance to various sectors. The various scholars and other researchers interested in the financial performance of commercial banks will benefit from the findings of this study. The findings will add to the body of knowledge in this field, mainly, to the banking sector in Pakistan.

This study will contribute in understanding the decisions taken in making investment that sheds light on various factors, like micro and macro that gives the returns of assets. Research investigation is deemed helpful in understanding the consequence of the factors on financial performance of the micro financing banks in Pakistan and thus investors take advantage of it fully through the available investment opportunities with these fluctuating variables.

The study also helps the managers in the financial institutions to carefully plan and forecast by taking full advantage of the fluctuations that takes place within

the external and internal factors and affects return on assets. It also provides a better understanding on affecting performance, financial institutions managers that can easily mitigate losses with a view to make sure banks remain stable to serve the purpose and as long as this continues they will maximize the value of the shareholders' and growth of the economy that is for sure a good deal.

The findings of this study will be helpful for the policy makers in the field of regulation and supervision. This study will definitely be a great help for the government on how the financial and economic policies influence the banking industry performance and hence it fully contributes in the improvement of the macroeconomic policy making. The government also plays a very significant role in creating a well-established environment for the operations of the businesses. This study is very helpful in providing lessons on how many legal, regulatory and procedural needs can create impact on the finance sector in many general ways as they attempt to imitate. The study findings are also very useful in offering inputs in reviewing the policy and legal framework and effectively influence the formulation of economic policies by the statuary bodies and the central bank of Kenya hence guiding the directions of the operations of macroeconomic variables for the future need.

This study has provided a platform in taking quality decisions for the academics and researchers that sets a debate among them all specially the policy makers, academicians and the professionals that acts as a base for the further research regarding the macro and microeconomic variables affecting the return on assets and the financial performances of the institutions.

1.8 Plan of the Study

The current introduction section of this discussion is followed by a review of literature. This literature paves the way for theoretical framework and help in hypothesis development. Methodology segment then comprises research model along with the argument of dataset, sample, population and method to be employed. This

segment is tracked by empirical results and in the end conclusion along with debate and more research guidelines are placed.

Chapter 2

Literature Review

The chapter here discloses an extensive review of the existing empirical research studies, examines theoretical frameworks, and explores the selected micro and macro determinants of financial performance, specifically Return on Equity & Assets.

During the review of available literature, it is evident that the profitability factors can be drop down into two distinct groups; macro-economic or micro-economic. The research scholars have been interested in determining the impacts of the macro or micro economic factors, in order to increase the profitability levels. As, this study investigates both categories, micro determinants originate from bank specific and industry specific variables affecting financial performance. The two most significant factors of bank related performance are inclusive of financial risks and the operating efficiency. The research investigations have revealed; size, liquidity, risk management, leverage and management of expense, as the most apparently employed internal factors, for measuring the bank specific performance. This part starts with literature on profitability and then it will discuss the microeconomics and macroeconomics factors effecting profitability.

2.1 Empirical Review

During the review of available literature, it is evident that the profitability factors can be drop down into two distinct groups; macro-economic or micro-economic. The research scholars have been interested in determining the impacts of the macro or micro economic factors, in order to increase the profitability levels. As, this study investigates both categories, micro determinants originate from bank specific and industry specific variables affecting financial performance. The two most significant factors of bank related performance are inclusive of financial risks and the operating efficiency. The research investigations have revealed; size, liquidity, risk management, leverage and management of expense, as the most apparently employed internal factors, for measuring the bank specific performance. This part starts with literature on profitability and then it will discuss the microeconomics and macroeconomics factors effecting profitability.

2.1.1 Profitability

The main objective of the organization is to generate the profits, out of the products/service it sells. The profit is the value, which remains after all the expenses are deducted from the revenue generated. An organization makes an expense, for instance, during the execution of the business activities, as the generation of a product. The profitability is thus, the ability of an organization to generate profits. In the current globalised scenario and economic climate, organizations are convinced to develop long-term and short-term strategies as a function of generating profits (Saunders & Cornett, 2006). In the essence of the growing market competition, the increased business saturation and compacted margins, the financial institutions need to understand how the branches, customers, officers, channels, products and the services are contributing to the market.

Profitability can be measured by the organization via financial ratios. The most manifesting ratios as envisage from prior literature, include; return on equity, net interest margin and return on investment (Flamini et al., 2009; Naceur & Goaied, 2008; Saona, 2011). On the other hand, internal and external factors are

used to determine the profitability of the banks. A variation in these internal and external factors can be seen, with respect to the difference of banks, nature, managerial activities and decisions and the choices of the stakeholders. Insights from the profitability studies, demonstrates, that the factors as deposit liabilities size, bank credit portfolio constitution and size, policy adopted for the interest rate, risk related exposures, quality of the management, age and size of the banks, ownership structure and concentration of the banks, structural affiliation and the productivity of the labor are the critical elements that influence the profitability of banks.

Nevertheless, there are other factors that may contribute on the profitability levels within an organization. These factors are inclusive of multi-dimensional reporting, acknowledgement of the operating and income expenses, capital allotment, etc (Gounder & Sharma, 2012). The profitability levels are dependent on the aforementioned variables and they show different impacts on the different period of times.

Due to the utmost significance of the bank profitability as the macro and micro-economic disciplines, the academicians, management of banks, regulatory authorities of banks, and the research scholars are displaying interests, on the factors that impact the banking profitability (Athanasoglou, Brissimis & Delis, 2005). The economic analysts and the senior management of the banks are concerned to accomplish the profitability objectives for the financial institutions. Profitability of the commercial banks posits a significant impact on the growth of the economy, this serves as the main reason that the banks are focused at nourishing their profitability levels.

2.1.2 Microeconomic Factors

Presumably, the estimation of business size is representative of the banks capability to serve its respective stakeholders comes into action. The production capacity of the bank, the numerous services the bank provides, the quality and quantity of services that the banks may offer to its prospects, at a given time determines the

size of the banks (Sritharan, 2015). Meaningfully, the banks management groups, diversity and the amount of assets, the bank have with respect to its competitors serves a significant marker for the banks. The sizes of the banks are evaluated, to make conclusions concerning the diseconomies/economies of the scale for the banks, in the banking sector.

If a bank is having a large size, than it is capable enough to manage its operational costs and work under the economies of scope and scale. The banks with the larger capacity have the capability in generating massive goods at a contemptible rate, when compared with the market competitors, small business firms (Kigen, 2014). The large sized banking firms, has gained experience over time, their skill set are nourished and modified and they have greater market knowledge, when compared to the small sized firms. The small firms face a challenge to manage a huge amount of costs, due to their small size and lesser capacity.

Previous research studies, has examined the association between the organizational profitability and the size of the organization. Considerable literature displays that the impact can be both positive as well as negative (Onounga, 2014; Mule, Mukras and Nzioka, 2015 Shepherd, 1972). Onounga (2014), argued that a positive nexus exist, in between the two aforementioned variables. The author advocates, which the government needs to, develop stringent policies that influence the banks to increase the number of assets and the capital base. The assets here, refers to those assets that increase the size of the banks. The assets and capital base, when advance, the bank's profitability will eventually increase as a sequence. Mule, Mukras and Nzioka (2015), explained that a positive association exists in between the return on equity, profitability and firm size. The authors concluded that the unit changes in the size of the firm are directly proportional to return on equity.

Nevertheless, there are several research scholars, which explained that negative associations are prevalent in between the size of the firm and the profitability. Shepherd (1972), argued, as the size of the firm increases, the diseconomies of scale take place. Likewise, the study by Niresh and Velnampy (2014) examined the relationship between the profitability and the size of the firm. The results of the study showed that the firm size has no profound effect on the profitability

of the firm. The research investigation herein, will examine whether the size of firm, as evaluated through the logarithm of total assets, posits an impact on the commercial banks profitability.

The capital adequacy/capital structure is concerned with the organizational liability composition. To be more specific in defining, capital structure, the term evaluates the number of financial resources involved in making total financial obligations for a company (Brealey and Myers, 1992; Gitman, 1997 and Weston & Brigham, 2000). Capital structure play a critical role for any firm, it provides an opportunity, to increase the organizational profitability and the overall value, for an organization. A company acquires the financial resources through a number of sources, for instance; issuing share security, exploiting the debts, acquire massive or small amounts of debts, etc. Firms need to have numerous sources to fulfill its financial needs. The combination of the liabilities, enable the organization in advancing the profitability, market value and the overall efficiency.

Rafiq et al (2008) showed that in Pakistan chemical industrial sector, the management prefers the equity instead of debts. There is a trend visible in the chemical industry; the firms that have a large size are more convinced to borrow debts, as they are fearless of their accounts to get bankrupt. Nevertheless, the small firms are concerned about the bankruptcy and thus acquire limited debts from the lenders. Rafiq et al (2008) notified that the chemical industrial sector, demands massive cash flows, thus in Pakistan, there is a high dependency on the debts, rather than the equity in order to finance new projects. The authors argued that the bankruptcies are concerned with the fixed direct costs and with a smaller fraction from the total firm value. However, in Pakistan, the process of bankruptcy appears as a slow one; therefore, the forms are convinced to acquire the equity based financing rather than debts, as the firms have no fear from the bankruptcy costs.

Abor (2005) collected the data from the firms listed in GSE and investigated the association between the profitability and the capital structure of the organizations. The research investigator collected the data from 1998-2002, with the selection of twenty-five organizations as a sample. The researcher applied the regression

analysis, to examine the impact of functions as return on equity (ROE) and capital structure. The results of the study demonstrated that the capital structure is the variation of the equity and debts that are applicable on the organizational operations'. The author argues that capital structure is a feature of marketing, due to the notion that the different firms launch the numerous of securities, and in distinct illustrations, inclined to advance the market value at the end. It has been concluded, that numerous of studies has revealed the effect of the capital structure, in increasing the profitability of the organization. The studies have shown the impacts, in the form of theoretical or experimental perspectives. Abor (2005) argued that the decisions related to the capital structure are critical for the business firms, as it provides them an opportunity to boost up their profit margins, acquire higher returns and combat with the stiff market competition. Capital structure decisions, when taken appropriately, the market value can be maximized. It is thus concluded that the firms, that has high profitability and returns, are found to be dependent on the short-term debt, as a constituent of the total debt. It has been argued that the organization prefers to consume the short-term debts, apart from the long-term debts. The review of literature, has the insights that there is a negative association between the return on equity and long-term debt, nevertheless, the positive association emerge in between the return on debt and the total debts.

The risks associated to the borrower defaults are referred to as the credit risk and reveals the failure of the acquirer to honor the obligations to the service debts. The credit risk occurs in the situation, the acquirer is unable to fulfill the obligations within the allotted time (Gestel and Baesens, 2008). There exists a higher credit risk, when the borrower pays the current debts, through the utilization of the future cash flows. The borrower compensates the investor through the assumption of credits risks, either through the debt obligations or through the interest payments. There is a close association between the return of investment and the credit risks, with the significant correlation between the perceived credit risks and the bond yield.

Hakim and Neaime (2001) were interested to examine the impacts of credit, capital and liquidity on the performance of the banks, inhabitant in Lebanon and Egypt. The analysis of the study reveals that the banks have stringent laws and regulations, with respect to the risk management actions. Hosna Manzura and Juanjuan (2009) evaluated the profitability through the measure of return on equity (ROE), in the condition, when the organization had higher amounts of the non-performing loans. The study showed distinct results for different banks.

Njanike (2009) argued that those organizations that are incapable to perform the credit risks evaluation and assessment, they usually suffer from the financial crises. Kithinji (2010) on the contrary, notified that the higher constituent of the bank's profit are influenced by the factors other than the non-performing loans and the credit risks. Aduda and Gitonga (2011) notified that the credit risks managed effectively, posit a considerable impact on the organizational profits. Aruwa and Musa (2012) evaluated the impacts of the different types of risks (including credit risk) on the bank performance. The research findings showed that a strong and significant association exists in between the financial performance of the banks and the different risk components.

Boahene, Dasah and Agyei (2012) examined the association between the bank's profitability and credit risk. The analysis revealed a positive association in between the variables. Gakure, Ngugi, Ndwiga and Waithaka (2012) analyzed the role of the techniques based on the credit risks management and their impacts on the financial performance of the banks. The study illustrated that the banks are incapable to accomplish their financial objectives, as they fall short to assess the credit risks associated to the non-performing loans. Kolapo, Ayeni and Oke (2012) showed that the credit risk analysis, posit a considerable impact on the financial performance of the bank. The study adopted the cross-sectional design; however, the researchers were unable to capture the appropriate method of analysis.

In the contemporary business scenario, the business organizations are focused at escalating their overall profitability. Profits can be acquired from any type of business firm; enterprise, firm, company, etc. It is basically, the ability of the organization to efficiently utilize the available resources and generate valuable outcomes.

The most evident tool adopted by the business organization is the profitability ratios, in order to assess the organizational bottom line. The best ratio to analyze the performance and the efficiency of the organization is the profitability ratio (Eskandari, 2007). Prior work in the literature shows that the association between the firm's profitability and efficiency turns out to be positive. If the organizations are currently, having the lower level of management efficiency, then ultimately they face a threat from the declining profit margins. The profitability ratios can be distinguished into two distinct types namely; return ratio and the margin ratio. The margin ratios are concerned with the conversions of the sales dollars into the profits. Nevertheless, the returns ratios are used to inculcate the firm's profitability by way of the shareholders returns. The ratios can be used to evaluate that how a company effectively consumes the liabilities and the assets the company has internally. Through the measure of the efficiency ratio, the organizational turnover of receivables, equity usage and quantity, liability repayments can be analyzed. The association of the liquidity and the profitability was reviewed empirically. The researcher collected the sample of Saudi Arabian 929 firms that were stock listed. The association in between the liquidity and the profitability was assessed through the cash conversion cycle and current ratio.

Eljelly (2004) examined the relationship between the firm's liquidity levels and the profitability by means of current ration. The data was analyzed through the application of the regression and correlation model. The study revealed the negative association between the aforementioned variables. The study showed that relationship between the variables is intense across the firms with longer cycles of cash conversions. Eljelly (2004) argued that the cash gap/ cash conversion cycle length were more fruitful at calculating the liquidity, instead of the current ratio. The researcher also concluded that the firm size was an important variable impacting the firm profitability level.

Lazaridis & Tryfonidis (2006) conducted a primary analysis of 131 firms embracing cross section study design. The data was collected from the Athens Stock Exchange, listed firms during the time period of 2001-2004. The results of the study showed statistically positive results, while determining the profitability through

the cash conversion cycles and the gross operating profits. The components were also assessed namely accounts payable, inventory and the accounts receivable.

Shim and Siegel (2000) explained the accounting liquidity, as capacity of an organization to liquidate its short term debts till it get mature, for a period of one year. In the current globalised scenario, the presence of adequate liquidity is significant for the business organization, in order to assure the long term persistent business firm presence. The working capital policy of the company relies on the two most crucial concepts; liquidity and solvency. In the current scenario, the business firms need to focus on managing the working capital, as a significant factor of financial administration. The net working capital is a monetary value achieved by the firm, at the time when the amounts of the current liabilities are lesser than the organizational current assets. There is a threat of insolvency, if the organizations are unable to accomplish a acceptable working capital benchmark.

Preferably, the organization needs to manage the current assets up to the desired level, so that they are at the safer side. Chandra (2001) argued that the organizations having higher liquidity levels are safe and demonstrates a strong financial strength. Nevertheless, the research investigation by Assaf Neto (2003) revealed that higher the level of firm the liquidity, the more financial issues, the organization faces. This is the possible explanation, that the firm has the current assets, profitable to the lower extent, as compared to the fixed assets. Furthermore, the organizations are having the current assets, which demands cost investments for maintenance, in turn the profitability level reduce substantially.

On the other hand, the research investigation by Arnold (2008) has revealed recompense for holding the cash. For instance, it becomes easier for the organization to make payments for the employee salaries, taxes, and materials. The cash flows for future are not certain, and in this situation, the holding cash help the company, to have a safer margin, for any upcoming downturns. Lastly, the owning cash help the organization to have cash at the back end and can make the immediate cast investment. Therefore, the financial management requires creating a balance ion between the desired liquidity levels with the adequate return for the organization.

Perobeli, Pereira and David (2007) reported that the firm can make decisions related to the liquidity levels in the following manner. If the firm applies higher amount of resources on the current assets, the levels of profitability substantially increases, with an increased risk of solvency. The organization having the declining levels of net working capital, will eventually leads to an increase in the profitability. In this stance, the organization has the option to transit the existing long term funds into the less profitable assets.

The economic theory states, that the profitability and risks has a positive association. Therefore, if the level of the liquidity increases, the level of risks will reduce and ultimately result in lower profits. In the stance, the working capital strategy appears less risky in context. The returns are reduced, if the financial risks are higher, sacrificing the safety margin of the organization. On the contrary, if the working capital is less in amount, then the insolvency risk will rise substantially, but will accomplish higher rate of returns. In this situation, the volume of the funds that are invested in those assets, that are expected to show lower levels of profitability.

The business mix indicator is the representative of the numerous the business activities that the sole organization is performing. For instance, if a company is engaged at manufacturing and selling the automobile cars, is also engaged in having a financial wing that aid the customers to finance the automobile purchase they want to make. Thoughtfully, it is challenging to analyze accurate valuation among those organizations that are engaged in innumerous business activities.Mustapha A. Akinkunmi (2017) examined the factors of the Nigerian Bank's profitability, within the data available for the time duration of 2001 to 2015. Prior research empirical investigations are not worthy enough to conclude about the factors that impact the level of the business performances of the banks. The results of the studies are mixed in context and unconvincing with respect to the estimation techniques, sample period and different countries.

In the context of the ROA model, it is analyzed that the credit risk, efficiency ratio, capital adequacy and business mix indicator are considered to have a significant impact on the performance of the bank, after Nigerian bank capitalization. The

study shows that the business mix indicator posit the coefficient value of 0.0149. On the contrary, the analysis of the ROE model exhibit that the actions variables that were part of the study had no significant association on the performance of the banks, apart from the efficiency ratio. Therefore, the business mix indicators are revealed to posit a non-significant association between the variables. Likewise, the NIM model, there was only two rations that posit a significant impact on the profitability of the banks, namely; credit risk and the efficiency ratio, after the Nigerian banks underwent the capitalization.

Birindelli & Ferretti, (2015) examined the impact of the company-level aspect for the period of 2006-2012, in the European banks. The analysis was based on the panel data model, with the application of the generalized least squares method, regression analysis and the Hausman test. The indicators of profitability, as used by the researcher, are ROAE and ROAA. The profitability factors are revenue diversification, credit portfolio, structure and level of capital, funding and the efficiency. The results of the study demonstrate that the profitability of the banks has a significant association to the business mix indicators. However, the net profit margins of the banks were declining. Therefore, the banks need to focus on the feed based services, as this could the banks an opportunity to increase the competitive advantage for the banks, and create a revenue stream for them. This makes it clear that the product diversification when increase, increases the selling options for the organization and this in turn raise the level of the profit margins.

2.1.3 Macroeconomic Factors

The review of the literature reveals that the interest rate fluctuations posit a critical impact the profitability of the banks. There are two main categories of loan rates; the interest rates added on the banks and the depositor's interest rate. The term spread refers to create a distinction in between the loan rate and the deposit rate. The level of the banking spread distribution serves as a crucial indicator of the financial sector efficiency. This thus reflects the banking costs of intermediation, for instance, the normal profits. The costs are mainly forced by several factors namely institutional, regulatory and macroeconomic on which

the banks operates its functions, while the other costs are based on the internal features, that the banks consumes for themselves. It has been argued that the management efficiency of the costs, serves to be the most significant factor that impacts the profitability of the banks. Therefore, it can be concluded that the banks need to focus on the interest rate indicators of the banks.

Presumably, if the market interest rates are inflating than supposedly, the banks are focused at inflating their prices and that eventually leads to a rise in the costs associated to the other sectors outside the banking sectors costs. The main significant reason, for increasing the banking products price, is the inflation (Brockway 1989, 53). As the costs of the business rise, than the defaulting risks at the end of the borrowers eventually increases. This is a possible explanation, that why the interests rate pose an indirect impact on the default risk of securities, real estate holdings and the risk of loans (Madura and Zarruk, 1995).

Hansonand Rocha (1986) notified that the interest rate is one of the significant macroeconomic variables used to evaluate the performance of the banks. The authors have presented a review on the interest rate spread. The study examined the role of the explicit and the implicit taxes in increasing the distribution and the level of the spread. The study explained the costs and profits of the bank, in cohesion with the impacts of inflation, market structure and the scale economies. The study revealed a statistically significant and positive relationship between the inflation and the interest margins.

Current investigations reveal that the researchers are interested in examining the regularities launched by the banking authorizes across international destinations. The evaluation of the cross-country data helps in evaluating such association. Study conducted by Bartholdy, Boyle, and Stover (1997) collected the data from 13 OECD countries, examined the interest rate data for the 1985-1990, duration. The results of the study showed, if the banks have the explicit deposit insurance, then the level of the deposited interest rates automatically reduces, with a decline of 25 points. Barth, Nolle and Rice (1997) examined the data from 19 countries in 1993, and showed the effect of the banking authority on the ROE as a control variable for numerous market and banking features. The research findings show

that there is no significant association in between the bank concentration, presence of the (explicit) deposit and the deviance in the banking authority to the ROE.

Beckmann (2007) signified the association between the interest rate and the performance of the banks. The author professed that the interest rates when show a dampening impact on the credit demand, as a sequence the credit quality reduced massively. This eventually reveals a negative association between the ROA and the interest rate.

Performances of the banks are supposed to be impacted by the interest's rates, which are the important determinant of the bank's portfolio. In the study by Brechling and Clayton (1965), the increasing interest's rate persuades the FIs to reorganize the portfolios and reduce the amounts of the liquid assets (treasury bills, cash in hand). This further cause a rise in the amount of investment, turn them into the advances and the interest-bearing securities. This approach up brings a change within the earning power of certain assets, which are visible in the portfolio. This will further cause a rise in the earning capacity for the interest-bearing securities.

Money supply is generated through a set of foreign assets and domestic credit. The composition of the domestic credit is based on the central bank credit for both the government and the public (Hossain and Chowdhury, 1998). Akomolafe, Danladi, Babalola, and Abah (2015) demonstrated a study in order to evaluate the monetary value effects on the performance of the commercial banks, resident in Nigeria. The researcher through the micro-panel analysis configured that the money supply and the interest rates are the commonly used variables of the monetary value. The study explained that the banks used the profit before tax (PBT) as a key variable that determined the performance. The researchers adopted the random effect, fixed effect and the pooled regression models as part of the analysis. On the other hand, the application of the Hausman test showed that the most appropriate model is the fixed effect regression. The study analysis revealed, that the monetary policies and the banks profits has a positively significant association, taking the factors as interest rates and monetary supply. Nevertheless, the interest rate has shown the value that appeared statistically insignificant at both the 0.01 and 0.05

probability levels. In this perspective the current study will test the hypothesis for the appropriateness of the fixed regression model.

Amidu and Wolfe (2008) conducted a study on the banks of Ghana for the period of 1998 to 2004. The analysis of the study showed that the lending behaviors in the banking industry of Ghana are impacted notably by the change in the money supply and the economic indicators of the economy. The results of the study revealed that the inflation and prime rates of the central banks were impacted negatively by the lending of the banks. The results came out to be insignificant with respect to the inflation rate, while positive for the prime rate.

Maysami et al. (2004) professed that the short run and the long run association among several macro-economic variables among the indices of the Singapore Stock Market indices (namely; property, hotel and the finance index). The data was gathered from 1995 to 2001. The study findings revealed positive association amongst industrial production, stock index and the inflation. Humpe and Macmillan (2009) examined the macroeconomic variables namely; money supply, interest rate based on the treasury bills, production index and the consumer price index. The researcher used these variables to recognize the stock return trends across US and Japan through the application of co-integration for the duration of 1963-2005. The research findings showed that the industrial production has the positive relationship while the long-term interest rates and the consumer price index are negatively related. Also, a negative association is revealed in between the treasury bills rate of interest and the consumer price index. In case of US, the money supply turned out to be negatively associated. On the other hand, for Japan, industrial production came out to be statistically significant with positive association and monetary supply revealed the negative association with the stock price.

The macroeconomic variables are based on the external factors as the political, economic and legal scenarios, in which the banks are operating. The institutional background and the economic conditions of the banks, in the external environments of the banks are influencers of the bank profitability. These factors influence the cyclical, interest rate and the inflation outputs. However Athanasoglou

et al., (2006) mentioned that the factors differ from industry to industry and they are mostly depending on the market conditions. Some of these are the industry size, the ownership status and the market concentration. Considerable literature has shown that the external factors impact the performance of the banks. In the research by Gompers and Lerner (1998), it is affirmed that the economies having higher GDP, attracts the entrepreneurs to invest and launch their ventures and the entrepreneurs are found interested at gather the venture funds. The organizations are found to have a negative association with the inflation rates as they embrace the investments for a period of time. It has been argued that the interest rates are influencers of the costs of borrowing and demonstrates a significant effect on the return on equity (Nielsen, 2011).

2.2 Theoretical Framework
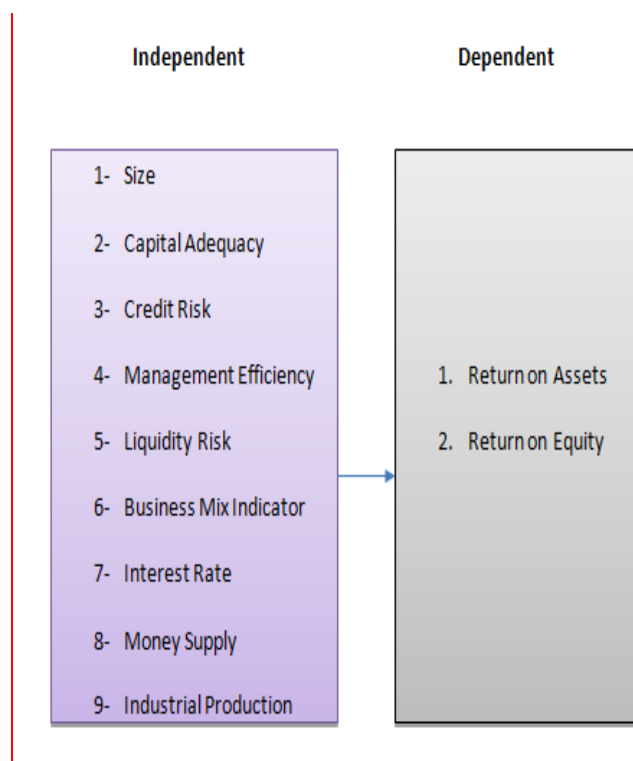
2.3 Hypothesis

H_1: Business Mix Indicator is positively significant with bank profitability.

H_2: Capital Adequacy is positively significant with bank profitability.

H_3: Credit Risk is positively significant with bank profitability.

H_4: Industrial production is positively significant with bank profitability.

H_5: Interest rate is positively significant with bank profitability.

H_6: Liquidity Risk is positively significant with bank profitability.

H_7: Management Efficiency is positively significant with bank profitability.

H_8: Money Supply is positively significant with bank profitability.

H_9: Size is positively significant with bank profitability.

Chapter 3

Data Description and Methodology

3.1 Data Description

In the study herein, the data is collected from the 20 commercial banks, to conduct an extensive empirical analysis. The banks listed in the Pakistan Stock Exchange (PSX) are chosen for the purpose of the current research investigation. The data is collected for the time duration, 2003 to 2016. A total of 36 banks are listed across the Pakistani's stock exchange and out of them the study herein is taking 20 banks for discussion and analysis on the availability of data. The income statements and the balance sheets will be taken, for the purpose of calculating the microeconomic factors. For the analysis of the macroeconomic variables, the international monetary fund as part of the International Financial Statistics will be retrieved. The independent and dependent factors for the current study are inclusive of the following:

3.1.1 Dependent Variables

3.1.1.1 Returns on Assets (ROA)

ROA is taken as a measure of the bank's profitability. In the study here, the ROA is a dependent variable. Marimuthu (2008) notified that a number of variables can be used to calculate the profitability of the banks, out of which the ROA appears as the most appropriate and important one. According to Petria et al (2013)

$$\text{ROA} = \frac{\text{EBIT}}{\text{Total Assets}}$$

3.1.1.2 Returns on Equity (ROE)

ROE is a variable that is required to evaluate the profitability of the banks, and is the dependent variable in this study. In the research investigation by Al-Matari (2014), ROE was taken as a significant and key determinant of the organizational performance. According to Petria et al (2013)

$$\text{ROE} = \frac{\text{Net Income}}{\text{Total Equity}}$$

3.1.2 Independent Variables

3.1.2.1 Business Mix Indicator (BMI)

Business Mix Indicator (BMI) indicates as other operative income divided by total assets. Business Mix Indicator (BMI) is a microeconomic determinant and the sixth independent variable of the study. According to Petria et al (2013)

$$\text{BMI} = \frac{\text{Non-interest Income}}{\text{Total Assets}}$$

3.1.2.2 Capital Adequacy (CA)

Capital Adequacy (CA) indicates as total equity divided by total assets. Capital Adequacy (CA) is a microeconomic determinant and the first independent variable of the research. According to Petria et al (2013)

$$CA = \frac{\text{Total Equity}}{\text{Total Assets}}$$

3.1.2.3 Credit Risk (CR)

Credit Risk (CR) indicates as impaired Loans (NPLs) divided Gross Loans. Credit Risk (CR) is a microeconomic determinant and second independent variable of research. According to Petria et al (2013)

$$CR = \frac{\text{Impaired Loans (NPL)}}{\text{Gross Loans}}$$

3.1.2.4 Industrial Production (IP)

Industrial Production (IP) indicates as annual data of industrial production index. Industrial Production (IP) is a macroeconomic determinant which is also acts as the last independent variable in this research. According to Petria et al (2013)

$$IP = \text{Annual data of industrial production}$$

3.1.2.5 Interest Rate (IR)

Interest Rate (IR) indicates as one-year interest rate. Interest Rate (IR) is a macroeconomic determinant and the seventh independent variable of this research. According to Petria et al (2013)

$$IR = \text{One year KIBOR rate}$$

3.1.2.6   Liquidity Risk (LR)

The Liquidity Risk (LR) indicates as loans divided by customers' deposits. Liquidity Risk (LR) is a microeconomic determinant and the fourth independent variable. According to Petria et al (2013)

$$LR = \frac{\text{Gross Loans}}{\text{Customer's Deposits}}$$

3.1.2.7   Management Efficiency (ME)

The Management Efficiency (ME) indicates as the cost to income ratio. Management Efficiency (ME) is a microeconomic determinant and the third independent variable in research. According to Petria et al (2013)

$$ME = \frac{\text{Total Operating Cost}}{\text{Net Income}}$$

3.1.2.8   Money Supply (MS)

Money Supply (MS) indicates as annual data of money supply. Money Supply (MS) is a macroeconomic determinant and the eighth independent variable for this research. According to Petria et al (2013)

$$MS = \text{Log of annual data of money supply}$$

3.1.2.9   Size (SIZE)

Size (SIZE) indicates as logarithm of total assets. Size (SIZE) is a microeconomic determinant and the fifth independent variable in research. According to Petria et al (2013)

$$SIZE = \text{Log of total assets}$$

3.2   Methodology

In the study herein, there are 20 cross sections, with 14 time series. Therefore, the data including the time series data (T) and the cross-section (N) is referred to as the panel data. Simply, in the panel data the total number of observations are based on the formula of $N \times T$. With the aforementioned formula, the total of 280 observations will be taken as the part of the study.

Firstly, the data normality is examined, with the assistance of the kurtosis and skewness. Rosli & Fauzi (2016) notified that the data is revealed as normal, if the value of skewness is between +1.96 to -1.96. The authors notified that the kurtosis is affirmed in the normal ranges, if the value is between the ranges of +2 to -2. After the initial examination of the data through the kurtosis and skewness, the next task is the application of the panel data model, to determine the association between the independent and dependent variable. The application of the OLS pooled model to conduct the empirical analysis, with the adoption of the following equation.

$$Y_{it} = \alpha_i + \beta X_{it} + \mu_{it}$$

The equation shown above is part of the pooled regression analysis model. Y is referred to the dependent variable, i is a symbol representative of the cross-section, time period is represented by t and X is taken as the independent variable. The aforementioned equation is further clarified as:

$$Y_{it} = \alpha_i + \beta_1 S_{it} + \beta_2 CA_{it} + \beta_3 CR_{it} + \beta_4 ME_{it} + \beta_5 LR_{it} + \beta_6 BM_{it}$$
$$+ \beta_7 I_{it} + \beta_8 MS_t + \beta_9 IP_t + \mu_{it}$$

The model is having a shortcoming, with respect to the evaluation of the diversification effect. Therefore, to evaluate the diversification effect, the other model is being applied and that refers to as the Random or Fixed Effect Model as part of the Haussmann Test. The researcher has structured a hypothesis as follows:

H0: The Random Effect Model appears as significant.

H1: The Fixed Effect Model appears significant.

The null hypothesis will be rejected, if the p-value appears below the value of 0.05.

An equation is derived, evaluating the fixed cross-sections based, with the help of the Fixed Effect Model as under:

$$Y_{it} = \alpha_i + \beta X_{it} + F_i + \mu_{it}$$

F_i is representative of the fixed cross sectional effect that is specific to the chosen firm. A new equation is framed incorporating, all the variables taken in the study in the following manner.

$$Y_{it} = \alpha_i + \beta_1 S_{it} + \beta_2 CA_{it} + \beta_3 CR_{it} + \beta_4 ME_{it} + \beta_5 LR_{it} + \beta_6 BM_{it}$$
$$+ \beta_7 I_{it} + \beta_8 MS_t + \beta_9 IP_t + F_i + \mu_{it}$$

However, random mean effect equation is as follows:

$$Y_{it} = \alpha_i + \beta X_{it} + \varepsilon_i + \mu_{it}$$

ε_i is reflective of the random cross sectional effect and specific to the chosen firm. After the addition of all the variables under consideration, the equation is shown as under;

$$Y_{it} = \alpha_i + \beta_1 S_{it} + \beta_2 CA_{it} + \beta_3 CR_{it} + \beta_4 ME_{it} + \beta_5 LR_{it} + \beta_6 BM_{it}$$
$$+ \beta_7 I_{it} + \beta_8 MS_t + \beta_9 IP_t + \varepsilon_i + \mu_{it}$$

In lieu of analysis, micro and macroeconomic determinants of profatability, two statistical models fixed and random effect model are being considered. The first equation is Returns on Assets (ROA) has the proxy of profitability of bank. The second equation is Returns on Equity (ROE) has the proxy of profitability of bank. First of all, the Hausman test will be run so one can chose among the random and fixed effect models. Both equations are tested separately.

Macro and micro economical variable cant be tested at the same time due to the effect of overlapping (Chen, 2018). That's why these variables are tested separately. First of all, the effect of macro-economic variables will be tested on the proxies of profitability. Equation is as follows.

$$Y_{it} = \alpha_i + \beta_1 \text{IP}_{it} + \beta_2 \text{IR}_{it} + \beta_3 \text{MS}_{it} + \mu_{it}$$

After that the effect of micro-economic variables will be tested on the proxies of profitability. In the second part, residuals of these proxies will be taken as dependent variables. To check the effect of micro variables on profitability equation is as follows.

$$Y_{it} = \alpha_i + \beta_1 \text{BMI}_{it} + \beta_2 \text{CA}_{it} + \beta_3 \text{CR}_{it} + \beta_4 \text{LR}_{it} + \beta_5 \text{ME}_{it} + \beta_6 \text{SIZE}_{it} + \mu_{it}$$

Chapter 4

Descriptive Statistics and Empirical Analysis

4.1 Descriptive Statistics

The Study examines the connection amongst micro and macroeconomic determinants and profitability of the banks listed on the Pakistan Stock Exchange (PSX).In the study herein, the data is collected from the 20 commercial banks, to conduct an extensive empirical analysis. The banks listed in the Pakistan Stock Exchange (PSX) are chosen for the purpose of the current research investigation. The data is collected for the time duration, 2003 to 2016.In the data set there are a total of 280 frequencies of the observations, as the data is inclusive of 14 frequencies of the time series amongst each frequency taken for cross section.The descriptive statistics of the variables are listed below in Table 4.1.

Mean is an average value that is utilized to check the information's central tendency that is in discussion. Mean is very well explained in light of the fact that each value and its set of values is incorporated into mean yet this extent is influenced on the grounds that it is constantly influenced by the values in information extremely.

TABLE 4.1: Descriptive Statistics.

Stats	Mean	Median	S. Dev	Variance	Skewness	Kurtosis	Min	Max
CA	0.092	0.069	0.081	0.007	1.863	1.067	0.031	0.543
CR	0.114	0.09	0.106	0.011	1.770	1.327	0	0.63
ME	2.913	1.689	5.773	33.327	1.503	1.765	-12.277	53.897
LR	0.537	0.556	0.121	0.015	0.342	-0.212	0.189	0.893
SIZE	19.123	19.35	1.259	1.585	0.285	-0.714	15.464	21.569
BMI	0.0004	0.0004	0.0004	0	1.332	1.504	0	0.0022
IR	0.0872	0.09156	0.3382	0.00114	-0.431	-0.675	0.03865	0.1311
MS	1.692	1.554	3.637	4.594	1.951	1.455	0.652	4.532
IP	0.0113	0.0112	0.048	0.002	0.144	0.805	0.010	0.012
ROA	0.017	0.012	0.003	0	1.540	-1.605	-0.072	0.037
ROE	0.158	0.165	0.956	0.913	1.334	-1.555	-0.047	0.347

The descriptive Analysis that is shown in the Table 1, it's been noticed that the independent variable that is Size (SIZE) has the maximum mean value of 19.123 while another independent variable Business Mix Indicator (BMI) has the lowest value of mean of 0.0004.

Median is defined as the intensity to observe the focal propensity of the dataset and is considered as measure of direct extent. Median is a value in a dataset that holds the highest proportion of dataset from the lower half to its central value is known as median. This measures the intensity to be influenced by the extraordinary values of datasets.

The descriptive analysis that is shown in Table 4.1, the observations shows that independent variable Size (SIZE) has the maximum median value of 19.351 while another independent variable Business Mix Indicator (BMI) got the lowest value of median of 0.0004.

Standard deviation is used to measure the extent of a scattered data set. The lower estimated standard deviation explains that the data points in the data set have a tendency to be near to the mean value. Alternatively, the highest value of standard deviation explains that the data points in the data sets are widely spread to give the final touches to the quality of scope extensively.

The descriptive analysis in Table 4.1 describes the independent variable Business Mix Indicator (BMI) that has the standard deviation of 0.0004 that is the lowest value that clearly describes that the data point in the Business Mix Indicator (BMI) has the tendency to be closer to its mean. Furthermore, the Independent variable Management Efficiency (ME) got the highest standard deviation value of 5.773. This value is high as compare to the variables that are in the data set that means that the data points in Management Efficiency (ME) has the values spread over the wide variety of range.

Variance is defined as the estimation of the numbers spread between numbers with in a dataset. The variance has the tendency to measure the extent of each number in the dataset to check how far each number within the defined set from its mean is. Zero variance has the value that shows no variability and all the data points

within the dataset are same. On the other side higher the value of variance, higher is the variability.

An asymmetric statistic distribution in the statistics is known as Skewness. In this distribution the curve seems to be twisted on either side to the right or left. Skewness can also be measure to estimate the degree to which the distribution varies from normal distribution. The skewness can either be positive, negative or unidentified. As per Rosli and Fauzi (2016), the adequate measure for skewness is from +1.96 to -1.96. From each of the descriptive analysis that is shown in Table 4.1, the observation shows the independent variable Money Supply (MS) has the highest skewness value that is of 1.951 and the independent variable that is Interest Rate (IR) has the lowest skewness value that is -0.431. The values from the above table explain that the skewness lies between the standard ranges for all the variables. As per Rosli and Fauzi (2016), the adequate value of kurtosis ranges from +2 to -2.

Kurtosis is defined as the statistical measure that is used to illustrate the distribution, skewness of the data observations circulating around mean,here and there alluded to as the volatility of volatility. Kurtosis is also used in most part in the field of statistics that depicts the charts trends. The kurtosis value can either be negative or positive. A positive values defines the heavy side of the data that is the heavy tails (large number of data tails) while negative value explains the light-tails(i.e less data in tails).

The descriptive analysis that appears in Table 4.1, shows that the independent variable Management Efficiency (ME) has the highest kurtosis value of 1.765 and the independent variable i.e. Size (SIZE) shows the lowest skewness value of -0.714. It's been observed from the table above that the values of kurtosis lie between the standard ranges for all variables.

Data normality is observed by the value of skewness and kurtosis. Rosli and Fauzi (2016) indicate that the data is considered to be normal if its values of skewness are within the range of +1.96 to -1.96 and +2 to -2 for the values of kurtosis. The descriptive analysis in table above shows the skewness and kurtosis values for all

the variables within the defined and acceptable range. The information collected for this research study is considered to be normal.

4.1.1 Empirical Analysis

In lieu of analysis, micro and macroeconomic determinants of stock prices, two statistical models fixed and random effect model are being considered. The first equation Returns on Assets (ROA) has the proxy of profitability of bank. First of all, the Hausman test will be run so one can chose among the random and fixed effect models. Test summary of Hausman test is given beneath:

TABLE 4.2: Test Summary-Hausman Test.

Chi-Sq. Stats	Chi-Sq. df	P-Value
0.0000	9	1.0000

The above table shows the P-value is 1.00 which is more than 0.05. The Hausman test suggests that the Null hypothesis is accepted and the Random Effect Model is appropriate. The findings of random effect model are given in Table 4.3.

From above Table 4.3 it is observed that Interest Rate (IR) is negatively and significantly affecting the profitability of banks (ROA) with coefficient value of -0.000513 which means that one unit increase in Interest Rate (IR) will decrease the profitability of banks (ROA) by 0.000513. Money Supply (ME) is positively and significantly affecting the profitability of banks (ROA) with coefficient value of 0.000163 which means that one unit increase in Money Supply (MS) will increase the profitability of banks (ROA) by 0.000163. Business Mix Indicators (BMI) is negatively and significantly affecting the profitability of banks (ROA) with co-efficient value of 16.12635 which means that one unit increase in Business Mix Indicators (BMI) will decrease the profitability of banks (ROA) by 16.12635.

TABLE 4.3: Impact of Micro and Macroeconomic determinants on ROA (Random Effect Model).

Variables	Coefficient	P-Value
C	-0.029725	.04202
IP	-0.008186	0.5567
IR	-0.000513*	0.0363
MS	0.000163*	0.0094
BMI	-16.12635*	0.0000
CA	0.045191*	0.0001
CR	-0.070358*	0.0000
LR	0.001321	0.8483
ME	0.000063	0.8325
SIZE	0.003036*	0.0268
R-Square	0.793515	
Durbin Watson	1.103872	
F-Statistics	0.00000	

Capital Adequacy (CA) is positively and significantly affecting the profitability of banks (ROA) with coefficient value of -0.045191 which means that one unit increase in Capital Adequacy (CA) will increase the profitability of banks (ROA) by 0.045191. Credit risk (CR) is negatively and significantly affecting the profitability of banks (ROA) with coefficient value of 0-0.070358 which means that one unit increase in Credit risk (CR) will decrease the profitability of banks (ROA) by 0.070358. Size is positively and significantly affecting the profitability of banks (ROA) with coefficient value of 0.003036 which means that one unit increase in Interest Rate (IR) will decrease the profitability of banks (ROA) by 0.003036. Rests of variables are insignificantly affecting the bank profitability (ROA).

The second equation Returns on Equity (ROE) has the proxy of profitability of bank. First of all, the Hausman test will be run so one can chose among the random and fixed effect models. Test summary of Hausman test is given beneath:

TABLE 4.4: Test Summary-Hausman Test.

Chi-Sq. Stats	Chi-Sq. df	P-Value
0.0000	9	1.0000

The above table shows the P-value is 1.00 which is more than 0.05. The Hausman test suggests that the Null hypothesis is accepted and the Random Effect Model is appropriate.

The findings of random effect model are given in Table 4.5 below.

TABLE 4.5: Impact of Micro and Macroeconomic determinants on ROE (Random Effect Model).

Variables	Coefficient	P-Value
C	-0.790212	0.5440
BMI	-498.3201*	0.0000
CA	1.278141*	0.0016
CR	-0.076190	0.7757
IP	-0.051169	0.9171
IR	-0.020647*	0.0172
LR	0.130488	0.5929
ME	-0.025398*	0.0175
MS	0.002929	0.1856
SIZE	0.060834	0.2076
R-Square	0.445565	
Durbin Watson	1.856542	
F-Statistics	0.00000	

From above Table 4.5, it is observed that Business Mix Indicator (BMI) is negatively and significantly affecting the profitability of banks (ROE) with coefficient value of -49803201 which means that one unit increase in Business Mix Indicator (BMI) will decrease the profitability of banks (ROE) by 498.03201. Capital adequacy (CA) is positively and significantly affecting the profitability of banks

(ROE) with coefficient value of 1.278141 which means that one unit increase in Capital Adequacy (CA) will increase the profitability of banks (ROA) by 1.278141. Interest Rate (IR) is negatively and significantly affecting the profitability of banks (ROE) with coefficient value of -0.020647 which means that one unit increase in Interest Rate (IR) will decrease the profitability of banks (ROE) by 0.020647. Management efficiency (ME) is negatively and significantly affecting the profitability of banks (ROE) with coefficient value of - 0.025398 which means that one unit increase in Management efficiency (ME) will decrease the profitability of banks (ROE) 0.025398. Rests of variables are insignificantly affecting the bank profitability (ROA).

According to modern research, macro and micro economical variable can't be tested at the same time due to the effect of overlapping. That's why these variables are tested separately. First of all, the effect of macro-economic variables will be tested on the proxies of profitability. After that the effect of micro-economic variables will be tested on the proxies of profitability. In the second part, residuals of these proxies will be taken as dependent variables.

The first equation is "Returns on Assets (ROA) has the proxy of profitability of bank". First of all, effect of macro-economic variables will be tested on ROA. Hausman test will be run to choose among the random and fixed effect models. Test summary of Hausman test is given beneath:

TABLE 4.6: Test Summary-Hausman Test.

Chi-Sq. Stats	Chi-Sq. df	P-Value
0.0000	9	1.0000

The above table shows that the P-value as 1.00 which is more than 0.05. The Hausman test suggests that the Null hypothesis is accepted and the Random Effect Model is appropriate.

The findings of random effect model are given in Table 4.7 below:

TABLE 4.7: Impact of Macroeconomic determinants on ROA (Random Effect Model).

Variables	Coefficient	P-Value
C	0.047791	0.0167
IP	-0.036318*	0.0491
IR	-0.000121	0.6542
MS	0.000112	0.2288
R-Square	0.489306	
Durbin Watson	1.648655	
F-Statistics	0.00000	

The observations in Table 4.7 form above shows that Industrial Production (IP) shows negative and significant effect on the profitability of the bankw (ROA) at 10 percent. The coefficient value for the Industrial Production (IP) is -0.036318 which means that one unit increase in Industrial Production (IP) will decreases the profitability of the banks (ROA) by 0.0363 units. The P value for Industrial Production (IP) is 0.0491 which is less than 0.05 and shows that Industrial Production (IP) have a significant effect on the profitability of the banks (ROA).

The observations form Table 4.7 shows that Interest Rate (IR) shows negative and insignificant effect on the profitability of the banks (ROA). The Coefficient value for the Interest Rate (IR) is -0.000121 which means that one unit increase in Interest Rate (IR) will decrease profitability of the banks (ROA) by 0.00076 units. P value for Interest Rate (IR) is 0.6542 that is greater than 0.05 and means that Interest Rate (IR) doesn't have any significant effect on the profitability of the banks (ROA). These results are in line with the previous study of (Nolle and Rice, 1997). The research findings show that there is no significant association in between the bank concentration, presence of the (explicit) deposit and the deviance in the banking authority to the ROA & ROE.

The observations in Table 4.7 show that Money Supply (MS) shows positive and insignificant impact on the profitability of the banks (ROA). The coefficient value for

Money Supply (MS) is 0.000112 which means that one unit increase in Money Supply (MS) will eventually increase the profitability of the bank (ROA) by 0.000112 units. P value for Money Supply (MS) is 0.2288 that is higher than 0.05 and means that Money Supply (MS) don't have any significant effect on the profitability of the banks (ROA).

R-Square shows that how much variation in dependent variable is caused by the independent variables. Falk and Miller (1992) contended that the value of R square must either be higher or equal to 0.10. Table 4.7 above shows that R square value is 0.489306 that implies 48.93% variation in profitability of the bank (ROA) is explained by the macroeconomic indicators. The rest of the variation is explained by various elements which are not included in this research.

The Durbin Watson statistic is a number that tests for autocorrelation in the residuals from a statistical regression analysis. Field (2009) suggests that values under 1 or more than 3 are a definite cause for concern. Table 4.7 above shows the Durbin Watson measurements as 1.648655 that implies that no autocorrelation exists within variables.

F-tests can evaluate multiple model terms simultaneously, which allows them to compare the fits of different linear models. Table 4.7 above shows that the P-Value of F-Statistics is 0.0000 which is less than 0.05. It provides sufficient evidence to conclude that your regression model fits the data better than the model with no independent variables.

In the above analysis there are two variables which are insignificant and one variable is significant. It means the insignificant variables are not affecting the bank's profitability ROA. By using general to specific approach, the insignificant variables will dropped down and only Industrial Production (IP) will be used to calculate the residuals of Return on Assets (ROA) to be used as dependent variable in testing the effect of micro economic variables.

In the second part, effect of micro-economic variables will be tested on the residuals of ROA. Hausman test will be run to choose among the random and fixed effect models. Test summary of Hausman test is given beneath:

TABLE 4.8: Test Summary-Hausman Test.

Chi-Sq. Stats	Chi-Sq. df	P-Value
14.864595	6	0.0213

The above table shows that the P-value is 0.0213 which is less than 0.05. The Hausman test suggests that the Null hypothesis is rejected and the Fixed Effect Model is appropriate.

The findings of fixed effect model are given in Table 4.9 below.

TABLE 4.9: Impact of Microeconomic determinants on ROA (Random Effect Model).

Variables	Coefficient	P-Value
C	-0.055586	0.4825
BMI	-14.17828*	0.0011
CA	0.047723*	0.0655
CR	-0.081620*	0.0000
LR	0.020765	0.1933
ME	-0.000177	0.7866
SIZE	0.002963	0.4464
R-Square	0.534242	
Durbin Watson	1.881792	
F-Statistics	0.000000	

The observations for Table 4.9 show that Business Mix Indicator (BMI) is negatively and significantly affects the profitability of the banks (ROA). Coefficient value for Business Mix Indicator (BMI) is -14.17828 which means that one unit increase in Business Mix Indicator (BMI) will decrease the profitability of the banks (ROA) by 14.27828 units. P value for Business Mix Indicator (BMI) is 0.0011 that is lower than 0.05 and means that Business Mix Indicator (BMI) is significantly affecting the profitability of the banks (ROA). These findings are in contrast with the previous research of (Birindelli & Ferretti, 2015).

The observations from Table 4.9 show that Capital Adequacy (CA) is positively and significantly affects the profitability of the banks (ROA). Coefficient value for Capital Adequacy (CA) is 0.047723 which means that as one unit increase in Capital Adequacy (CA) will increase the profitability of the banks (ROA) by 0.047723 units. P value for Capital Adequacy (CA) is 0.0655 that is higher than 0.05 but lower that 0.10 and means that Capital Adequacy (CA) is significantly affecting the profitability of the banks (ROA) at 10 percent. In light of these results it is understood that Capital Adequacy significantly impacts the profitability of banks. These findings are in contrast with the previous research of (Abor, 2005). He argued that the decisions related to the capital structure are critical for the business firms, as it provides them an opportunity to boost up their profit margins, acquire higher returns and combat with the stiff market competition. Capital structure decisions, when taken appropriately, the market value can be maximized.

In the observations from Table 4.9 the Credit Risk (CR) is negatively and significantly affects the profitability of the banks (ROA) negatively and significantly. The Coefficient value for Credit Risk (CR) is -0.081620 which means that increase in one unit increase in Credit Risk (CR) decreases the profitability of the banks (ROA) by 0.0677 units. P value for Credit Risk (CR) is 0.0000 that is lower than 0.05 and means that Credit Risk (CR) is significantly affecting the profitability of the banks (ROA). In light of these results it is understood that Credit Risk (CR) significantly impacts the profitability of banks. These findings are in contrast with the previous research of (Njanike, 2009). He argued that those organizations that are unable to perform the credit risks evaluation and assessment, they usually suffer from the financial crises.

The observations from Table 4.9 shows the Liquidity Risk (LR) is positively but insignificantly effects on the profitability of the banks (ROA). Coefficient value for Liquidity Risk (LR) is 0.020765 which means that one increase in Liquidity Risk (LR) will increases the profitability of the banks (ROA) with 0.020765 units. P value for Liquidity Risk (LR) is 0.1933 that is more than 0.05 which means Liquidity Risk (LR) do not significantly affecting the profitability of banks (ROA). These findings are not in contrast with the previous researches of (Chandra, 2001;

Assaf Neto, 2003). Chandra (2001) argued that the organizations having higher liquidity levels are safe and demonstrates a strong financial strength. Assaf Neto (2003) revealed that higher the level of firm the liquidity, the more financial issues, the organization faces.

In the observations from Table 4.9 Management Efficiency (ME) is negatively and insignificantly affects the profitability of the banks (ROA).Coefficient value for Management Efficiency (ME) is -0.000177 which means that one unit increase in Management Efficiency (ME) will decrease the profitability of the banks (ROA) by 0.000177 units. The P values for Management Efficiency (ME) is 0.7866 which is more than 0.05 which means Management Efficiency (ME) do not significantly affecting the profitability of the banks (ROA). These findings are in contrast with the previous research of (Lazaridis & Tryfonidis, 2006). The results of the study showed statistically insignificant results, while determining the profitability through the cash conversion cycles and the gross operating profits.

The observations in Table 4.9 show that Size (SIZE) has insignificant and positive impact on the profitability of the bank (ROA). Coefficient value for size (SIZE) is 0.002963 which means that one unit increase in Size (SIZE) will increases the profitability of the banks (ROA) with 0.002963 units. P value for Size (SIZE) is 0.4464 which is higher than 0.05 which means that Size (SIZE) do not significantly affecting the profitability of the banks (ROA). These findings are in contrast with the previous research of (Velnampy, 2014). He augued that firm size has no significant effect on the profitability of the firm.

R-Square shows that how much variation in dependent variable is caused by the independent variables. Falk and Miller (1992) contended that the value of R square must either be higher or equal to 0.10. Table 4.9 above shows that R square value is 0.534242 that implies 53.42% variation in profitability of the bank (ROA) is explained by the microeconomic indicators. The rest of the variation is explained by various elements which are not included in this research.

The Durbin Watson statistic is a number that tests for autocorrelation in the residuals from a statistical regression analysis. Field (2009) suggests that values under 1 or more than 3 are a definite cause for concern. Table 4.9 above shows the

Durbin Watson measurements as 1.881792 that implies that no autocorrelation exists within variables.

F-tests can evaluate multiple model terms simultaneously, which allows them to compare the fits of different linear models. Table 4.9 above shows that the P-Value of F-Statistics is 0.0000 which is less than 0.05. It provides sufficient evidence to conclude that your regression model fits the data better than the model with no independent variables.

In the second portion of the empirical analysis Returns on Equity (ROE) has taken as the proxy of the profitability of the banks. First of all, effect of macro-economic variables will be tested on ROE. Hausman test will be run to choose among the random and fixed effect models. Test summary of Hausman test is given beneath:

TABLE 4.10: Test Summary-Hausman Test.

Chi-Sq. Stats	Chi-Sq. df	P-Value
0.000000	3	1.0000

The above table shows that the P-value as 1.00 which is more than 0.05. The Hausman test suggests that the Null hypothesis is accepted and the Random Effect Model is appropriate.

The findings of random effect model are given in Table 4.11 below:

TABLE 4.11: Impact of Macroeconomic determinants on ROE (Random Effect Model).

Variables	Coefficient	P-Value
C	3.138961	0.0272
IP	-2.645176*	0.0479
IR	-0.013447	0.4859
MS	0.002498	0.7058
R-Square	0.161564	
Durbin Watson	2.254014	
F-Statistics	0.001463	

The observations in Table 4.11 form above shows that Industrial Production (IP) shows negative and significant effect on the profitability of the banks (ROE). The coefficient value for the Industrial Production (IP) is -2.645176 which means that one unit increase in Industrial Production (IP) will decreases the profitability of the banks (ROE) by 2.645176 units. The P value is 0.0479 for Industrial Production (IP) which is less than 0.05 and shows that Industrial Production (IP) has a significant effect on the profitability of the banks (ROE).

The observations form Table 4.11 shows that Interest Rate (IR) shows negative and insignificant effect on the profitability of the banks (ROE). The Coefficient value for Interest Rate (IR) is -0.013447 which means that one unit increase in Interest Rate (IR) will decrease profitability of the banks (ROE) by 0.013447 units. P value for Interest Rate (IR) is 0.4859 that is greater than 0.05 and means that Interest Rate (IR) do not have any significant effect on the profitability of the banks (ROE). The research findings show that there is no significant association in between the bank concentration, presence of the (explicit) deposit and the deviance in the banking authority to the ROA & ROE.

The observations in Table 4.11 show that Money Supply (MS) shows positive and insignificant impact on the profitability of the bank (ROA). The coefficient value for Money Supply (MS) is 0.002498 which means that one unit increase in Money Supply (MS) will eventually increase the profitability of the banks (ROE) by 0.002498 units. P value for Money Supply (MS) is 0.7058 that is higher than 0.05 and means that Money Supply (MS) do not have any significant effect on the profitability of the banks (ROE).

R-Square shows that how much variation in dependent variable is caused by the independent variables. Falk and Miller (1992) contended that the value of R square must either be higher or equal to 0.10. Table 4.11 above shows that R square value is 0.161564 that implies 16.64% variation in profitability of the banks (ROE) is explained by the microeconomic indicators. The rest of the variation is explained by various elements which are not included in this research.

The Durbin Watson statistic is a number that tests for autocorrelation in the residuals from a statistical regression analysis. Field (2009) suggests that values

under 1 or more than 3 are a definite cause for concern. Table 4.11 above shows the Durbin Watson measurements as 2.254014 that implies that no autocorrelation exists within variables.

F-tests can evaluate multiple model terms simultaneously, which allows them to compare the fits of different linear models. Table 4.11 above shows that the P-Value of F-Statistics is 0.0000 which is less than 0.05. It provides sufficient evidence to conclude that your regression model fits the data better than the model with no independent variables.

In the above analysis, there are two variables which are insignificant and one variable is significant. It means the insignificant variables are not affecting the bank's profitability (ROE). By using general to specific approach, the insignificant variables will dropped down and only Industrial Production (IP) will be used to calculate the residuals of Return on Assets (ROE) to be used as dependent variable in testing the effect of micro economic variables.

In the second part, effect of micro-economic variables will be tested on the residuals of ROE. Hausman test will be run to choose among the random and fixed effect models. Test summary of Hausman test is given beneath:

TABLE 4.12: Test Summary-Hausman Test.

Chi-Sq. Stats	Chi-Sq. df	P-Value
54.434451	6	0.0000

The above table shows that the P-value is 0.0213 which is less than 0.05. The Hausman test study suggests that the Null hypothesis is rejected and the Fixed Effect Model is appropriate.

The findings of fixed effect model are given in Table 4.13 below:

TABLE 4.13: Impact of Microeconomic determinants on ROE (Random Effect Model).

Variables	Coefficient	P-Value
C	1.485481	0.0366
BMI	-297.0895*	0.0000
CA	0.465157	0.2002
CR	-0.424463*	0.0927
LR	-0.002508	0.9904
ME	-0.006885	0.5103
SIZE	-0.066914*	0.0439
R-Square	0.318968	
Durbin Watson	1.955665	
F-Statistics	0.000000	

The observations for Table 4.13 show that Business Mix Indicator (BMI) is negatively and significantly affects the profitability of the banks (ROE). Coefficient value for Business Mix Indicator (BMI) is -297.0895 which means that one unit increase in Business Mix Indicator (BMI) will decrease the profitability of the banks (ROE) by 297.0895 units. P value for Business Mix Indicator (BMI) is 0.0000 that is lower than 0.05 and means that Business Mix Indicator (BMI) is significantly affecting the profitability of the banks (ROE). These findings are in contrast with the previous research of (Birindelli & Ferretti, 2015).

The observations from Table 4.13 shows that Capital Adequacy (CA) is positively and insignificantly affecting the profitability of the banks (ROE). Coefficient value for Capital Adequacy (CA) is 0.465157 which means that as one unit increase in Capital Adequacy (CA) will increase the profitability of the banks (ROE) by 0.465157 units. P value for Capital Adequacy (CA) is 0.2002 that is higher than 0.05 and means that Capital Adequacy (CA) do not significantly affecting the profitability of the banks (ROE). Surprisingly, capital adequacy does not have a significant impact on banking profitability of foreign banks in Pakistan. This is in contract with studies like Berger, 1995; Demirguc-Kunt and Huizinga, 1999; Ben

Nacuer, 2003; Kosmidou, 2008; Pasiouras et al., 2006; Gul, Irshad and Zaman (2011) that shows significant relationship between bank profitability and capital adequacy.

In the observations from Table 4.13 the Credit Risk (CR) is negatively and significantly affects the profitability of the banks (ROE) negatively and significantly. The Coefficient value for Credit Risk (CR) is -0.424463 which means that increase in one unit increase in Credit Risk (CR) decreases the profitability of the banks (ROE) by 0.424463 units. P value for Credit Risk (CR) is 0.0927 that is higher than 0.05 but less than 0.10 and means that Credit Risk (CR) is significantly affecting the profitability of the banks (ROE) at 10 percent level. In light of these results it is understood that Credit Risk (CR) significantly impacts the profitability of banks. These findings are in contrast with the previous research of (Njanike, 2009). He argued that those organizations that are unable to perform the credit risks evaluation and assessment, they usually suffer from the financial crises.

The observations from Table 4.13 shows the Liquidity Risk (LR) is negatively but insignificantly effects on the profitability of the banks (ROE). Coefficient value for Liquidity Risk (LR) is -0.002501 which means that one increase in Liquidity Risk (LR) will decreases the profitability of the banks (ROE) with 0.002501 units. P value for Liquidity Risk (LR) is 0.9904 that is more than 0.05 which means Liquidity Risk (LR) do not significantly affecting the profitability of banks (ROE). These findings are not in contrast with the previous researches of (Chandra, 2001; Assaf Neto, 2003). Chandra (2001) argued that the organizations having higher liquidity levels are safe and demonstrates a strong financial strength. Assaf Neto (2003) revealed that higher the level of firm the liquidity, the more financial issues, the organization faces.

In the observations from Table 4.13 Management Efficiency (ME) is negatively and insignificantly affects the profitability of the banks (ROE). Coefficient value for Management Efficiency (ME) is -0.006885 which means that one unit increase in Management Efficiency (ME) will decrease the profitability of the banks (ROE) by 0.006885 units. The P values for Management Efficiency (ME) is 0.5103 which is more than 0.05 which means Management Efficiency (ME) do not significantly

affecting the profitability of the banks (ROE). These findings are in contrast with the previous research of (Lazaridis & Tryfonidis, 2006). The results of the study showed statistically insignificant results, while determining the profitability through the cash conversion cycles and the gross operating profits.

The observations in Table 4.13 show that Size (SIZE) has significant and negative impact on the profitability of the bank (ROE). Coefficient value for size (SIZE) is -0.066914 which means that one unit increase in Size (SIZE) will decreases the profitability of the banks (ROE) with 0.066914 units. P value for Size (SIZE) is 0.4464 which is less than 0.05 and means that Size (SIZE) has significant effect on the profitability of the banks (ROE). These findings are in contrast with the previous research of (Shepherd, 1972). He argued that as the size of the firm increase, the diseconomies of scale take place and resulted in lowering the profits.

R-Square shows that how much variation in dependent variable is caused by the independent variables. Falk and Miller (1992) contended that the value of R square must either be higher or equal to 0.10. Table 4.13 above shows that R square value is 0.318968 that implies 31.89% variation in profitability of the bank (ROE) is explained by the microeconomic indicators. The rest of the variation is explained by various elements which are not included in this research.

The Durbin Watson statistic is a number that tests for autocorrelation in the residuals from a statistical regression analysis. Field (2009) suggests that values under 1 or more than 3 are a definite cause for concern. Table 4.13 above shows the Durbin Watson measurements as 1.955665 that implies that no autocorrelation exists within variables.

F-tests can evaluate multiple model terms simultaneously, which allows them to compare the fits of different linear models. Table 4.13 above shows that the P-Value of F-Statistics is 0.0000 which is less than 0.05. It provides sufficient evidence to conclude that your regression model fits the data better than the model with no independent variables.

Chapter 5

Conclusion and Recommendations

5.1   Conclusion

As discussed earlier, this study examines the connection amongst micro and macroeconomic determinants and profitability of the banks listed on the Pakistan Stock Exchange (PSX).In the study herein, the data is collected from the 20 commercial banks, to conduct an extensive empirical analysis. The banks listed in the Pakistan Stock Exchange (PSX) are chosen for the purpose of the current research investigation.

In the light of the researches in the past the hypothesis and the findings of the proposed work shows the analysis of the study that concludes that the bank's performance acts as an indicator on Return on Asset and Return on Equity that shows different variations in results, and these results are not consistent with each other. In case of ROA the t-value and the significance value of the particular variables shows that Industrial Production (IP), Business Mix Indicator (BMI), Capital Adequacy (CA) and Credit Risk (CR) significantly impacts the profitability of banks. In case of ROE the t-value and the significance value of the particular variables shows that Industrial Production (IP), Business Mix Indicator (BMI), Credit Risk (CR) and Size (SIZE) significantly impacts the profitability of banks.

Business Mix Indicator significantly impacts profitability of banks because if the product diversification increases, it eventually increases the selling options for the organization and this in turn raise the level of the profit margins.Capital adequacy significantly impacts the profitability because the decisions related to the capital structure are critical for the banks, as it provides them an opportunity to boost up their profit margins and combat with the stiff market competition.

Credit risk also significantly impacts the profitability because an increase in non-performing loans increases credit risk which eventually impacts the profitability of banks.Size significantly impacts the profitability of banks because if a bank have a large size, then it will be capable enough to manage its operational costs and work under the economies of scope and scale. The banks with the larger capacity have the capability in generating massive goods at a contemptible rate, when compared with the market competitors, small business firms. While interest rate, money supply, liquidity risk and management efficiency do not significantly impact the banks' profitability.

5.2   Recommendations

- This study recommends the managers to take capital decisions very carefully as it provides them an opportunity to boost up their profit margins.

- This study recommends that managers to develop effective policies to ensure the reduction in level of non-performing loans.

- This study recommends that the government needs to develop stringent policies that influence the banks to increase the number of assets and the capital base.

- This study recommends that banks should enhance their number of product that will eventually raise their profit margins.

- This study recommends that the Government should develop a strong mechanism to control the interest rates.

5.3   Limitations

This study focused credit risk, liquidity risk, management efficiency, capital adequacy and the business mix indicator that works as the determinants of bank's profitability.Hence the scope of the study is banks in Pakistan and not other organizations in Pakistan. Since the profitability of different organizations is influenced by other factors separate from the one used in this study and ones in the banking sector.

The study also examined the quantitative factors, which influence banks' profitability using data obtained from financial statements and measured using financial ratios. However, accounting data is prepared on standardized procedures, which may leave out qualitative aspects. In addition, accounting ratios may not represent current situation of the profitability of banking sector.

5.4   Future Research Directions

As per study findings, the hypothesized variables only explain 44.5% in case of Return on Equity and 79.3% in case of Return of Assets of the variation in profitability of commercial banks in Pakistan. This means there are other bank specific variables, which influence profitability of commercial banks hence a study, may be required on those other factors apart from the one considered under this research.

Secondly, additional research can be carried on the consequences of specific factors of industry on the profitability of the commercial banks.This study used to measure profitability through Return on Assets (ROA) and Return on Equity (ROE) however; there are measures like net interest margin, and net profit margin, which can be applied, in the banking industry to establish the effect of bank specific factors on profitability.

Bibliography

Abor, J. (2005). The effect of capital structure on profitability: an empirical analysis of listed firms in Ghana. *The Journal of Risk Finance*, 6(5), 438-445.

Aduda, J., & Gitonga, J. (2011). The relationship between credit risk management and profitability among the commercial banks in Kenya. *Journal of Modern Accounting and Auditing*, 7(9), 934-955.

Akinkunmi, M. A. (2017). Empirical investigation of external debt-growth nexus in Sub-Saharan Africa. *African Research Review*, 11(3), 142-152.

Akomolafe, K. J., Danladi, J. D., Babalola, O., & Abah, A. G. (2015). Monetary policy and Commercial banks' performance in Nigeria. *Public Policy and Administration Research*, 5(9), 158-166.

Almajali, A. Y., Alamro, S. A., & Al-Soub, Y. Z. (2012). Factors affecting the financial performance of Jordanian insurance companies listed at Amman Stock Exchange. *Journal of Management Research*, 4(2), 266-275.

Al-Matari, E. M., Al-Swidi, A. K., & Fadzil, F. H. B. (2014). The measurements of firm performance's dimensions. *Asian Journal of Finance & Accounting*, 6(1), 24-49.

Alshatti, A. S. (2015). The effect of credit risk management on financial performance of the Jordanian commercial banks. *Investment Management and Financial Innovations*, 12(1), 338-345.

Aremu, M. A., Ekpo, I. C., Mustapha, A. M., & Adedoyin, S. I. (2013). Determinants of capital structure in Nigerian banking sector. *International Journal of Academic Research in Economics and Management Sciences*, 2(4), 27-58.

Athanasoglou, P., Delis, M., & Staikouras, C. (2006). Determinants of bank profitability in the South Eastern European region, 2(6), 276-285.

Athanasoglou, B., & Brissimis, S. N. (2005). Bank Specific Industry-Specific and Macroeconomic Determinants of Bank Profitability. *Bank of Greece Economic Bulletin*, 2(5), 134-145.

Bartholdy, J., Boyle, G., & Stover, R. D. (1997). Corporate capital structure and regulation of bank equity holdings: some international evidence. 2(5), 687-700.

Beckmann, R. (2007). Profitability of Western European banking systems: panel evidence on structural and cyclical determinants. 8(3), 957-974.

Ben Naceur, S., & Goaied, M. (2008). The determinants of commercial bank interest margin and profitability: evidence from Tunisia. 6(5), 763-802.

Berman, K., Knight, J., & Case, J. (2013). Financial Intelligence. A Managers Guide to Knowing What the Numbers Really Mean. *Business Literacy Institute*, 6(1), 326-340.

Birindelli, G., Ferretti, P., Intonti, M., & Iannuzzi, A. P. (2015). On the drivers of corporate social responsibility in banks: evidence from an ethical rating model. *Journal of Management & Governance*, 19(2), 303-340.

Boahene, S. H., Dasah, J., & Agyei, S. K. (2012). Credit risk and profitability of selected banks in Ghana. *Research Journal of Finance and Accounting*, 3(7), 6-14.

Brealey, R., Myers, S., Sick, G., & Giammarino, R. (1992). Principals of Corporate Finance. *2nd Canadian edn.*

Brechling, F., & Clayton, G. (1965). Commercial Banks' Portfolio Behaviour. *The Economic Journal*, 75(298), 290-316.

Brinson, G. P., Singer, B. D., & Beebower, G. L. (1991). Determinants of portfolio performance II: An update. *Financial Analysts Journal*, 47(3), 40-48.

Brockway, G. P. (1989). GROWLERY: Ask Not for Whom the Junk Bond Fails. *Challenge*, 32(3), 48-50.

Busch, T., Christensen, B. J., & Nielsen, M. Ø. (2011). The role of implied volatility in forecasting future realized volatility and jumps in foreign exchange, stock, and bond markets. *Journal of Econometrics*, 160(1), 48-57.

Chandra, R., Dagum, L., Kohr, D., Menon, R., Maydan, D., & McDonald, J. (2001). *Parallel programming in OpenMP. Morgan Kaufmann*, 12(6) 301-334.

Cornett, M. M., & Marcuss, J. Saunders dan Tehranian H. (2006). Earnings Management, Corporate Governance, and True Financial Performance. 3(4), 112-118.

Cox, J. C., & Ross, S. A. (1976). A survey of some new results in financial option pricing theory. *The Journal of Finance*, 31(2), 383-402.

Davies, J. C. (1962). Toward a theory of revolution. *American Sociological Review*, 5-19.

Eljelly, A. M. (2004). Liquidity-profitability tradeoff: An empirical investigation in an emerging market. *International Journal of Commerce and Management*, 14(2), 48-61.

Eskandari, J. (2007). Accounting principles Shortrun and longrun reactions. *Tehran Sazeman Publ*, 6(1), 497-566.

Flamini, V., Schumacher, M. L., & McDonald, M. C. A. (2009). The determinants of commercial bank profitability in Sub-Saharan Africa (No. 9-15). *International Monetary Fund*.

Fisher, I. (1933). The debt-deflation theory of great depressions. *Econometrica: Journal of the Econometric Society*, 337-357.

Foucault, M., Davidson, A. I., & Burchell, G. (2008). The birth of biopolitics: lectures at the Collège de France, 1978-1979. Springer.

Gakure, R. W., Ngugi, J. K., Ndwiga, P. M., & Waithaka, S. M. (2012). Effect of Credit Risk Management Techniques on The Performance 0f Unsecured Bank Loans Employed Commercial Banks In Kenya. *International Journal of Business and Social Research*, 2(4), 221-236.

Georgita, C., Albu, F., David, V., & Medvedovici, A. (2007). Simultaneous assay of metformin and glibenclamide in human plasma based on extraction-less sample preparation procedure and LC/(APCI) MS. *Journal of Chromatography B*, 854(1-2), 211-218.

Gompers, P., & Lerner, J. (1998). Venture capital distributions: Short-run and long-run reactions. *The Journal of Finance*, 53(6), 2161-2183.

Gounder, N., & Sharma, P. (2012). Determinants of bank net interest margins in Fiji, a small island developing state. *Applied Financial Economics*, 22(19), 1647-1654.

Gul, S., Irshad, F., & Zaman, K. (2011). Factors Affecting Bank Profitability in Pakistan. *Romanian Economic Journal*, 14(39), 19-78.

Hakim, S., & Neaime, S. (2001). Performance & Credit Risk in Banking: A Comparative Study for Egypt and Lebanon. Economic Research Forum for the Arab Countries, Iran & Turkey, 18(6), 921-930.

Hanson, J. A., & de Rezende Rocha, R. (1986). High interest rates, spreads, and the costs of intermediation: Two studies (Vol. 18). *World Bank*, 258-265.

Hossain, A. A., & Chowdhury, A. (1998). Open-economy macroeconomics for developing countries. *Romanian Economic Journal*, 8(6), 75-88.

Hosna, A., Manzura, B., & Juanjuan, S. (2009). Credit risk management and profitability in commercial banks in Sweden. *Australian Journal of Business and Management Research*, 2(2), 31-46.

Humpe, A., & Macmillan, P. (2009). Can macroeconomic variables explain long-term stock market movements? A comparison of the US and Japan. *Applied Financial Economics*, 19(2), 111-119.

Jamali, A. H., & Asadi, A. (2012). Management efficiency and profitability in Indian automobile industry: from theory to practice. *Indian Journal of Science and Technology*, 5(5), 2779-2781.

Jin, C., Sehrish, S., Liao, W. K., Choudhary, A., & Schuchardt, K. (2011, September). Improving the average response time in collective I/O. *In European MPI Users' Group Meeting* (pp. 71-80). Springer, Berlin, Heidelberg.

Kithinji, A. M. (2010). Credit risk management and profitability of commercial banks in Kenya. *Australian Journal of Business and Management Research*, 2(1), 254-262.

Kolapo, T. F., Ayeni, R. K., & Oke, M. O. (2012). Credit risk and commercial bank's performance in Nigeria: A panel model approach. *Australian Journal of Business and Management Research*, 2(2), 31-58.

Kwon, C. S., & Shin, T. S. (1999). Cointegration and causality between macroeconomic variables and stock market returns. *Global Finance Journal*, 10(1), 71-81.

Kyule, J. (2015). Impact of Liquidity And Solvency On Financial Performance Of Firms Listed At The Nairobi Securities Exchange. *Unpublished MSc Finance Project, University of Nairobi*, 6(3), 526-533.

Lazaridis, I., & Tryfonidis, D. (2006). Relationship between working capital management and profitability of listed companies in the Athens stock exchange. 3(2), 136-149.

Marimuthu, M. (2008). Ethnic Diversity on Boards of Directors and Its Implications on Firm Financial Performance. *Journal of International Social Research*, 1(4), 245-273.

Madura, J., & Zarruk, E. R. (1995). Bank exposure to interest rate risk: A global perspective. *Journal of Financial Research*, 18(1), 1-13.

Miller, S. M., & Noulas, A. G. (1997). Portfolio mix and large-bank profitability in the USA. *Applied Economics*, 29(4), 505-512.

Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American Economic Review*, 48(3), 261-297.

Mohammed, A., & Simon, W. (2008). The Impact of Monetary Policy on Banks' Credit in Ghana. *AERC Paper TI-I*, Nairobi Kenya, 16(3), 213-299.

Molyneux, P., & Thornton, J. (1992). Determinants of European bank profitability: A note. *Journal of Banking & Finance*, 16(6), 1173-1178.

Mule, R. K., Mukras, M. S., & Nzioka, O. M. (2015). Corporate size, profitability and market value: An econometric panel analysis of listed firms in Kenya. *European Scientific Journal (ESJ)*, 11(13), 521-538.

Neto, A. A. (2003). Bank Specific Industry-Specific and Macroeconomic Determinants of Bank Profitability. *Finanas Corporativas E Valor*, 8(6), 91-97.

Nielsen, S. (2010). Top management team internationalization and firm performance. *Management International Review*, 50(2), 185-206.

Niresh, A., & Thirunavukkarasu, V. (2014). Firm size and profitability: A study of listed manufacturing firms in Sri Lanka, 39(5), 133-179.

Njanike, K. (2009). The impact of effective credit risk management on bank survival. Annals of the University of Petroşani, *Economics*, 9(2), 173-184.

Oniang'O, R. U. T. H. (2015). Effect of non-interest income on profitability of commercial banks in Kenya. *Doctoral Dissertation, School of Business, University of Nairobi*, 3(5), 238-297.

Price, S. M., Doran, J. S., Peterson, D. R., & Bliss, B. A. (2012). Earnings conference calls and stock returns: The incremental informativeness of textual tone. *Journal of Banking & Finance*, 36(4), 992-1011.

Rafiq, M. S., & Mallick, S. K. (2008). The effect of monetary policy on output in EMU3: a sign restriction approach. *Journal of Macroeconomics*, 30(4), 1756-1791.

Ross, S. A. (1979). Disclosure regulation in financial markets: Implications of modern finance theory and signaling theory. *Issues in Financial Regulation*, 5(1979), 177-202.

Rosli, M. H., Fauzib, N. A., Mohd, M. F. A., Azamic, F. M., & Saide, J. (2016). Company Characteristics and Corporate Social Responsibility Disclosure of Malaysian Listed Companies, 12(2), 526-547.

Shim, J. K., & Siegel, J. G. (2007). *Handbook of financial analysis, forecasting, and modeling.* CCH, 5(5), 294-333.

Sritharan, V. (2015). Does firm size influence on firm's profitability? Evidence from listed firms of Sri Lankan hotels and travels sector. *Research Journal of Finance and Accounting*, 6(6), 201-207.

Staikouras, C. K., & Wood, G. E. (2004). The determinants of European bank profitability. *International Business and Economics Research Journal*, 3, 57-68.

Sufian, F., & Chong, R. R. (2008). Determinants of bank profitability in a developing economy: empirical evidence from the Philippines. *Asian Academy of Management Journal of Accounting & Finance*, 4(2), 47-89.

Vallelado, E., & Saona, P. (2011). An integrated model of capital structure to study the differences in the speed of adjustment to target corporate debt maturity among developed countries. *International Journal of Banking, Accounting and Finance*, 3(4), 258-293.

Van Gestel, T., & Baesens, B. (2009). Credit Risk Management: Basic concepts: Financial risk components, Rating analysis, models, economic and regulatory capital. *Oxford University Press*, 12(5), 147-169.

Vong, P. I., & Chan, H. S. (2009). Determinants of bank profitability in Macao. *Macau Monetary Research Bulletin*, 12(6), 93-113.

Weston, J. (2000). The cost of capital, corporation finance and the theory of investment. *Fred, and Brigham, Eugene F. Managerial Finance*, 16(6), 20-21.