IMPACT OF INTERNAL BANK-SPECIFIC AND EXTERNAL ECONOMIC FACTORS ON PROFITABILITY: A COMPARISON OF COMMERCIAL AND ISLAMIC BANKS OF PAKISTAN

Thesis Submitted to

Department of Economics and Commerce

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In Partial fulfillment of the
Requirement for the Degree of

Master of Philosophy in Commerce and Finance

By

Sadaf Arshad Javed

MSCF 14105

Session: 2013-2015

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Approved By:

_____
Prof. Dr. Muhammad Ilyas
Program Manager

_____
Ahmad Raza Bilal
Examiner

_____
Dr. Farooq Anwar Bajwa
Research Supervisor

_____
Khawaja Hisham Ul Hassan
Controller Examination

Thesis Submitted to

The Superior College
School of Management Sciences, Lahore, Pakistan

DECLARATION TO BE FILLED BY THE STUDENT AT THE TIME OF SUBMISSION OF THESIS TO THE SUPERVISOR AND/OR FOR EXTERNAL EVALUATION

Section 1: Particular of the Student		
1.1	Full Name	Sadaf Arshad Javed
1.2	Father's Name	Arshad Javed
1.3	Roll. Number	MSCF 14105
1.4	Program	Master of Philosophy in Commerce and Finance

Section 2: Particular of the Thesis		
2.1	Title	Impact of internal bank-specific and external economic factors on profitability: a comparison of commercial and Islamic banks of Pakistan.
2.2	Supervisor's Name	Dr. Farooq Anwar Bajwa
2.3	Date of Completion	6th January 2015

The Superior College
School of Management Sciences, Lahore, Pakistan

SUPERVISOR'S CERTIFICATE ON
THESIS SUBMITTED BY A STUDENT

Section 1: Particulars of the Supervisor		
1.1	Full Name	Dr. Farooq Anwar Bajwa
1.2	Address	The Superior College, School of Management Sciences, Lahore.

Section 2: Particulars of the Student		
2.1	Full Name	Sadaf Arshad Javed
2.2	Father's Name	Arshad Javed
2.3	Registration Number	
2.4	Program	Master of Philosophy in Commerce and Finance

Section 3: Particulars of the Thesis		
3.1	Title	Impact of internal bank-specific and external economic factors on profitability: a comparison of commercial and Islamic banks of Pakistan.
3.2	Date of Completion	6th January 2015

I certify that:

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Dedication

This work is dedicated to my Supervisor, family and friends who encouraged me to face any challenge.

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ABSTRACT

The present study was aimed at determining the impact of internal bank specific and external macroeconomic factors on profitability of banking sector of Pakistan, with the help of comparative study between Islamic and Conventional Banking of Pakistan. Internal factors include size, capital and deposit while external factors include GDP, inflation rate and real interest rate. The impact is to be examined for profitability measures ROA, ROE, ROCE and NIM. The data was collected through financial statements of respective banks and analysis was made by using Eviews 7.0. Overall study concludes that internal bank specific factors are quite favorable for both conventional and Islamic banks but macroeconomic variables are more favorable for conventional banks suggesting that these banks should consider the changing macroeconomic conditions in Pakistan to attain maximum profitability level.

CHAPTER ONE

1. INTRODUCTION:

Financial system stability has been gaining crucial consideration on both, national and international level in terms of structural, institutional and macroeconomic aspects. Domestic financial system is becoming flexible for capital flow volatility because it is important for domestic financial system to be strengthened for a large magnitude and mobility of internal capital flows towards it. Therefore, for having national level strong macroeconomic and monetary policy performance, a sound financial system, especially banking system, is the key part of financial infrastructure. (Javaid, Anwar, Zaman, & Gafoor, 2011)

The life blood of modern trade and commerce is said to be the banking sector because it provides a major source of finance to these sectors. The concept of efficiency is becoming more important in this increasingly growing phenomenon of globalization, both for financial and non-financial institutions, including the banks. The success and growth of banking sector mainly depends upon a sound competitive market approach. It can be observed that old modalities of banking system have been replaced by many innovations in the new millennium. (Gul, Irshad, & Zaman, 2011)

1.1 Background of the Study:

Commercial banks mobilize national savings to some productive sources that increases the economic growth of a country. Financial system stability can also be achieved through having profitable commercial banks. The key functions of commercial banks include taking deposits from general public and advancing loans to those who need financial assistance. There has been done a lot of work in the past on factors affecting profitability of commercial banks. (Dawood, 2014) Those factors were categorized in two major parts, that is, bank-specific factors and external economic factors. Many researchers have studied these factors separately such as some have taken only bank-specific factors to be combined with profitability, and some have studied impact of external economic factors on profitability. Internal factor includes banks specific factors that can be discovered in specific banking terms such as bank size, liquidity, capital adequacy, deposits, advances and management efficiency. External economic factors include macroeconomic factors of the economy such as gross domestic product (GDP), inflation, market capitalization, and interest rate margins.

Sufian (2011) studied banks' profitability by controlling a specific arrangement of different internal and external economic factors of different Korean banks over time period of 1992-2003. It was found that those Korean banks show high profitability that has lower liquidity levels. Said & Tumin, (2011) investigated the impact of bank-specific factors of bank included liquidity, credit, capital, operating expenses and size of bank on performance of Chinese and Malaysian Banks. Similarly a study was presented on liquidity determinants of Czech commercial banks over the period from 2001-2009.

Ponce, (2011) investigated profitability of Spanish Banks for the period of 1999-2009. Results indicated higher bank profitability due to large percentage of loans in total assets, a high proportion of customer deposits, good efficiency and a low credit risk. Similarly the study of Ongore & Kusa, (2013) has provided the findings that bank performance is affected by bank specific factors in Kenya, except the variable liquidity. Also overall effect of macroeconomic factors is insignificant. In case of Latin America, the study made improvement in the previous literature through indicating market power and efficient structure hypothesis for 2,500 commercial banks over the period 1997-2005. The results show robust indications for large markets namely Brazil, Argentina and Chile and also show that capital ratios and bank size explains high profitability. (Chortareas, Garcia, & Girardone, 2011)

Raihan & Hoque, (2013) used internal and external corporate governance mechanisms to show their relationship with profitability. The displayed results were about the insignificance of bank board size, bank age, bank size, capital adequacy ratio, loan to deposit ratio and debt to equity ratio, that lead to un-satisfactory corporate governance performance. Banking profitability was also estimated for the commercial banks of Sub-Saharan Africa by using cost efficiency model, with explanatory variables of growth in bank assets, growth in bank deposits, capital adequacy, operational efficiency and liquidity ratio; and GDP and inflation as macroeconomic variables. Their results show fluctuations in both external and bank-specific factors with bank performance. (Francis, 2013) The factors taken for 13 Jordanian commercial banks for the period of 2005-2011 in a study were return on assets, cost efficiency, liquidity, credit composition, credit risk, capital adequacy and bank size. The results have shown that cost income ratio is an important endogenous factor that determines commercial banks' profitability in Jordan, under the control of management. All other variables' effect was shown none. (Almumani, 2013) Similarly the

effect of bank size, bank capital, expense management, interest income and economic conditions was investigated on bank's profitability in Nigeria. The results indicated that higher banks' profitability and growth depends upon advanced bank capital and interest income; proficient expense management and favorable economic conditions as well. Thus it concludes that banks' regular capital raising process and its enabling environment must be encouraged through sound governmental policies in banking system, leading to the accelerated economic growth in Nigeria. (Obamuyi, 2013) In case of Tunisian banks, some bank specific bank-specific factors, financial structure, macroeconomic factors and profitability was studied leading to the conclusion that competition would be more beneficial as compared to concentration for Tunisian commercial banks. Also showing complementarities between stock market growth and bank, it concludes that stock market development has positive impact on profitability of banks. (Naceur S. B., 2003)

As aimed by the present study, the relationship between bank specific and macroeconomic determinants with banks' profitability was also examined in Turkey from 2002-2010. Its results revealed that asset size and non-interest income is positive and significantly related to banks' profitability. Instead of it, size of credit portfolio and loans under follow-up has negatively significant effect upon profitability. Also only the real interest rate, from macroeconomic variable, positively affects the performance of banks. (Alper & Anbar, 2011) Similarly, for assessing the relationship between internal and external economic factors and banks' performance, a balanced data set of Jordanian banks was used over the period of 2001-2010. The results included that well capitalized banks, high lending activities, low credit risk and efficient cost management positively associated with banks' performance. Only bank size did not explain a significant support to economies of scale. Thus, most of the factors have shown significant variations in the banks' profitability. (Ramadan, Kilani, & Kaddumi, 2011) When the same study was conducted by using a data set of 38 banks in Kenya, the results disclosed that bank specific factors are significantly associated with banks' profitability. In contrast, all the market structure factors; foreign ownership and market concentration are insignificant. The findings suggest those policies that would support revenue diversification and minimization of liquidity holdings; and reduce operational costs and credit risks of the banks. (Olweny & Shipho, 2011)

Additionally, bank's profitability influencing factors were also studied for Iranian banks. The study used bank-specific factors that includes ownership ratio, ratio of bank customers', deposit

to bank's assets, ratio of total loans given to all assets, ratio of total interest free loans on total assets and ratio of interest free revenues to total revenues. While economic growth, actual rate of interest and rate of inflation was taken as external economic factors. Findings revealed that ownership ratio, ratio of total equity on total assets and rate of inflation were negatively associated with profitability. However, ratio of customers' deposit on total assets, ratio of total loans on total assets and economic growth were positively linked with banks' profitability. (Ghadimi, Taghavi, & Kassaipour, 2012) The determinants used for investigating banking profitability of China included bank specific, industry specific and macroeconomic factors. The results confirmed that the Chinese banking industry possesses a competitive environment and indicated that the cost efficiency, banking sector development, stock market development and inflation positively affects banking profitability. Also it was reported that non-traditional activity and higher taxation could cause low profitability. (Tan & Floros, 2012) Consequently, banking sector profitability along with its impact of internal and external economic factors has been vigorously at international level.

1.2 Islamic Banking and Profitability:

Islamic banking has been quite stable now and expected to grow and expand at higher pace, rather considered as merely a temporary phenomenon. Islamic banking is thriving and growing at double digit average annual growth rate. Presently Islamic banking is considered among one of the fastest growing industries. It has shown an incredible expansion in size from few hundred thousands of dollars to hundreds of billions of dollars from its origin in 1975 till present. The practice of Islamic banking was started from Arab countries and has been extended from Indonesia, Malaysia towards Europe, America and other non-Muslim countries as well. Additionally, many conventional banks including some major multinational foreign banks have also introduced Islamic banking techniques. (Iqbal & Molyneux, 2006) In the recent years, it can be evidenced from the available theoretical literature on Islamic banking that it is completely in line with the philosophy of Islam; therefore, forming a distinctive outline of banking. Many doubts were also highlighted and examined in an objective manner with the help of theoretical literature. The practice of Islamic banking has been also growing rapidly along with theoretical developments. The operating procedures of Islamic banking and the achieved results in terms of deposits, mobilization, profitability and achievement of socioeconomic objectives, both are observed with the help of research contributions. (Ahmad Z. , 1994)

It has been reviewed theoretically that the most important requirement for high profitability of Islamic banks is higher revenues. It is evidenced that in risky conditions the revenues of Islamic banks are lesser and costs become higher as compared to conventional banks in the long run. This happens when there remains a specific gap between expected and realized profits which results in facilitation of certain bargaining strategies of entrepreneurs. (Nienhaus, 1983) Financial profile and credit worthiness assumed to be the two essential elements for evaluating soundness of Islamic banks. Study estimations for GCC region, concluded that profitability of Islamic banks is less volatile and higher on an average as compared to its peer conventional banks. Thus, Islamic bank show les vulnerability towards return on assets and costs of liabilities of cyclical nature. On the other hand, Islamic banks try to achieve liquidity, asset and liability concentrations and operational efficiency in terms of profitability which are shown misplayed. In a systemic nature of banking sector, where disturbance in one unit could cause disorder of the whole industry, it remains a positive element of Islamic banks; the ability to smooth their return on assets by it shock absorbing nature. (Hassoune, 2002) When conventional theories of profitability were applied on Islamic banks, it was observed that capital ratio, liquidity, interest rates, money supply had a similar impact on profitability of Islamic banks as that on profitability of conventional banks. Furthermore, the finding supported risk aversion theory that is; less risky assets held by Islamic banks are associated with higher levels of market share. It also confirms the current practice of Islamic banks in which they use a conventional approach in terms of their financing and investing activities. (Ahmad & Haron, 1998)

Iran, Kuwait and Saudi Arabia are the countries of largest markets based on their asset size. Iran has remarkably cost efficient markets but with low equity levels as compared to Saudi Arabia which possesses high equity levels. In most countries, profitability measures vary on yearly basis. It was reported that Tunisia and Kuwait has lowest liquidity while Bahamas keeps the most liquid banking market. (Brown, 2003) Nine financial ratios were used to measure the difference between performance of conventional and Islamic banks in Bahrain with respect to profitability, liquidity risk and credit risk. Islamic banks' credit performance observed to be higher as these are less exposed to credit risk as compared to conventional banks. There was no major difference reported between the estimates of conventional and Islamic banks concluding that Islamic banks are doing well side by side with conventional banks even being the beginners. (Samad, 2004)

According to Awan, (2009) countries which are considered as supporters of capitalism and initiators of interest based financial system are gradually declining in terms of conventional banking while Islamic banking is flourishing world-wide especially in Pakistan. After the financial crisis, many developed countries have brought down their interest rates at near to zero level but remained unable to achieve desired effects as a result, many mature and strong institutions destroyed in the financial setup. In Pakistan, the comparative study between performance of conventional and Islamic banking revealed that the performance of Islamic banks is far better from conventional banks with respect to assets, financing, investment, efficiency, service quality and recovery of loans. On the other hand, it is observed that both conventional and Islamic banks are improving over time in terms of efficiency levels. Technical efficiency is proved to be good for conventional banks while Islamic banks are giving challenging environment to conventional banks in terms of cost and allocative efficiencies. (Shahid, Rehman, Niazi, & Raoof, 2010) A standard analysis to observe the soundness of financial institutions is CAMAL test, employed to examine performance comparison between conventional and Islamic banks of Pakistan. The results revealed that capital adequacy and liquidity position is better for Islamic banks while management quality and earning ability better relates to conventional banks. A smaller loan loss ratio is observed for conventional banks which show their better loan recovery process whereas assets quality is observed to be the same for both type of banks. (Jaffar & Manarvi, 2011) Another comparative study of Islamic versus conventional banking evidence that Islamic banks' profitability is greater than conventional banks of Pakistan. The causes may include worse global economic conditions and recession period that influenced conventional banking sector of Pakistan. Also the results show that Islamic banks are growing in their liquidity and growth rate as well. (Usman & Khan, 2012)

1.3 Banking in Pakistan:

The financial sector of Pakistan is mainly consists of Commercial and Islamic Banks, along with Development Finance Institutions (DFIs), Specialized Banks, Foreign Banks, Microfinance Institutions, Non-Banking Finance Companies (NBFCs), Modarabas, Stock Exchanges and Insurance Companies. NBFCs include leasing companies, investment banks, discount houses, house finance companies, venture capital companies and mutual funds. There are five public sector banks, two specialized banks, seventeen private sector banks, six foreign banks, eight DFIs, seven microfinance banks and five Islamic banks in Pakistan. The only regulatory and

supervisory jurisdiction has been provided by the State Bank of Pakistan who monitors all the banks that are currently operational and functional in Pakistan. It has been witnessed that the role of banking system in country's economic development is very noteworthy. Since its independence, it has been observed a considerable change in Pakistan's banking sector, especially after the year 1997 when efforts are being made to bring into line country's banking supervision processes with international banking practices. There came into existence apparent changes in ownership, structure and concentration in the banking sector, due to continuing process of mergers, consolidations and privatization of public sector banks. In terms of investment growth, it increases by 10.7% in 2010, the lending amount decreased by 33.5% for Pakistan banks and increased by 28% for foreign banks. Also there was a decline of 8.4% in banks advances. (Javed, Anwar, Zaman, & Gafoor, 2011; Riaz, 2013)

Pakistan possesses a prolonged history of introducing Islamized banking system that started in 1980's. It was a combination of major changes in Banking Companies Ordinance, 1962, associated laws, rules and regulations to promote interest free banking transactions. Policy makers and banking industry learned many important experiences that led to re-launch of Islamic banking in 1990's. State Bank of Pakistan introduced Islamic Banking Policy in 2001 to implement its financial sector strategy. According to this policy, the development of Islamic banking will go side by side with the development of conventional banking following an integrated, gradual and steady approach. Till the end of the year 2013, total number of branches of Islamic banks stood at 1030 that includes 661 branches of full-fledged Islamic banks and 369 of subsidiaries of conventional banks. According to 2013's SBP annual reports, total deposits mobilized by Islamic banks positioned at Rs. 751 billion showing a growth rate of 29 percent on yearly basis. Total assets of Islamic banking industry positioned at Rs. 903 billion with a market share of 9 percent of total assets of all scheduled commercial banks at the end on year 2013. The latest available un-audited data for the quarter ended at December, 2013 that total deposits and assets of Islamic banks further increased to Rs. 868 billion and Rs. 1014 billion respectively, having the respective market share of 10.4 percent and 9.6 percent. (Business Recorder, 2014)

Although Islamic banking is expanding in terms of number and operations but still this segment of market possesses eagerness towards Islamic finance. In light of the past experience, Pakistan is launching Islamic banking industry at a gradual and steady pace. The modest share of Islamic

banking in total banking industry is 3.2 percent, despite of its rapid expansion. Additionally it accommodates only around 23,000 borrowers relative to the country wide 5 million borrowers which are accommodated through 7,700 branches of conventional banks. The range of financing and investment levels of Islamic banks is around Rs. 77 billion which is below 3 percent of the advances of total banking system. On the other hand, the product side of Islamic banks reports that 75 percent of the products of conventional banks is being offered by Islamic banks. While clean lending for consumer financing products, such as personal loans and credit cards, still facing a challenge. Moreover, Islamic banks are absent from rural areas where there is a huge market potential for business growth. These are operational exclusively in large cities. The above details signify Pakistan's success in positioning basic foundation and core infrastructure of Islamic financial system and assuring the country's enough potential and prospects to further exploit this industry due to the increasing global interest in Islamic financial system. Going forward with the suggestions for developing Islamic financial system in Pakistan, it must implement a calibrated and coordinated approach and strategies. (Akhtar D. S., 2007)

Literature on influence of different factors that determine profitability is still at its initial stage in case of Islamic banking industry. To examine the strength of influence of both internal and external variables on profitability of Islamic banks of selected countries with the help of co integration technique on time series data, an initial attempt was made by Haron & Azmi (2004). The results indicated a significant long term relationship between variables liqudity, deposit items, asset structure, inflation and money supply and profitability measures of Islamic banks. Another study used panel data analysis and generalized least square method to determine the impact of internal and external variables on profitability which was denoted by return on assets (ROA) and return on equity (ROE). Capital adequacy and bank size have shown positive behavior, leverage has negative but all the three variables are significantly affecting profitability of Islamic banks of Jordan. Furthermore, macroeconomic variables, Amman stock exchange index, construction licensed square meters and money supply positively affect profitability. (Al-Qudah & Jaradat, 2013)

Similar study has been conducted by taking eight Middle Eastern countries to predict profitability and efficiency of Islamic banks. Results indicated that high profitability could be achieved through high leverage and large loan to asset ratio, in a controlled macroeconomic

environment, financial market structure and taxation. Also it was concluded that domestic banks are less profitable then foreign owned banks. (Bashir A. H., Determinants of Profitability and Rate of Return Margins in Islamic Banks: Some Evidence from Middle East, 2000) It has been evident from studies that although Islamic banking in UAE showing emerging demands for its services but possesses small market share, thus giving rise to the need of determining the performance of these banks in comparison of conventional banking in UAE. A mix of variables was made for this purpose including GDP per capita, size, financial development indicator, liquidity, concentration, cost and number of branches, for which the results indicated that liquidity and concentration are significant for conventional banks' liquidity; cost and number of branches are significant for Islamic banks. (Al-Tamimi, 2010) While comparing the profitability of Saudi and Jordanian Islamic banks, by using similar internal and external variables, the results signify that profitability of Saudi banks exceeds the Jordanian banks. In case of Saudi banks, total investment to total asset ratio, total equity to asset ratio and liquidity risk has positive and significant impact on profitability while in case of Jordanian banks, liquidity risk, net credit facilities to total asset, total equity to assets ratio and net credit facilities to total deposits ratio have positive significant impact profitability. It was observed that size variable has negative impact on profitability in both countries' models. (Almazari, 2014)

On the other hand, a profitability study of commercial banks of Malaysia was also taken some of internal and external variables. Its outcome shows that performance of Malaysian Islamic banks is positively and significantly influenced by the variable credit risk. When credit risk is high, it lowers the earning, ROA and ROE ratios. Factors like liquidity and concentration are found relatively insignificant; however, capital level and economic conditions do not influence performance at all. (Choong & Thim, 2012) Similarly in a world-wide banking sector analysis, high capital and loan to asset ratio results in high profitability when macroeconomic environment, financial sector and taxation are controlled. Implicit and explicit negatively affect the bank performance while favorable macroeconomic conditions positively impact bank performance. (Hassan & Bashir, 2000)

Study on banking sector profitability has been gaining major importance in Pakistan's research culture also. It is perceived for banks that high equity capital, total assets, loans, deposits and macro-economic factors including economic growth, inflation and stock market capitalization

provide more safety and advantage for high profitability. The study of Gul, Irshad, & Zaman, (2011) signifies the same results. The only internal factor analysis on profitability of top ten banks of Pakistan concluded that due to high costs, it might not be necessary that higher amount of total assets can higher the profitability as well. It is also observed high loans generate high profitability but this impact is proved insignificant. (Javaid, Anwar, Zaman, & Gafoor, 2011) Another internal and external economic factors study on profitability of commercial banks of Pakistan concludes that credit risk, interest rate, total assets and total deposits to total assets significantly affect ROE. Credit risk and interest rate significantly affect ROA also. (Riaz & Mehar, 2013)

Similarly bank size, net interest margin and industry production rate has shown significant and positive relationship with ROA and ROE while non-performing loan to total advances and inflation has shown significant but negative relationship with ROA. Also it was observed that real gross domestic product has positive relationship with ROA and capital has positive significant relationship with ROE. (Bilal, Saeed, Gull, & Akram, 2013) Additionally, a study using Pakistan's commercial banks' data, estimated that non-performing loans ratio, gearing ratio and asset management ratio are significantly associated with profitability. However bank size shows dual behavior which is significant when profitability is measured by using ROA and becomes insignificant when the profitability is being measured by using ROE. Similarly in case of Islamic banks' profitability, gearing ratio, asset management and capital adequacy ratio has shown positive significant association with profitability while size of banks has shown negative and insignificant association, directing towards recent losses that are facing by certain Islamic banks. (Akhtar, Ali, & Sadaqat, 2011)

1.4 Objectives of the Study:

1.4.1 General Objective:

In general this study aims at determining the impact of internal and external economic factors on profitability in comparison of conventional and Islamic banks of Pakistan.

1.4.2 Specific Objectives:

Specifically, in comparison of conventional and Islamic banking of Pakistan, this study aims to fulfill the following objectives:

- To determine the effect of Bank Size on Profitability
- To examine the impact of Capital Adequacy on Profitability
- To evaluate the influence of Deposits on Profitability
- To analyze the effect of GDP on Profitability
- To investigate the impact of Inflation Rate on Profitability
- To determine the influence of Real Interest Rate on Profitability

1.5 Research Questions:

- What is the effect of Bank Size on Profitability of Conventional and Islamic Banks of Pakistan?
- What is the impact of Capital on Profitability of Conventional and Islamic Banks of Pakistan?
- What is the influence of Deposits on Profitability of Conventional and Islamic Banks of Pakistan?
- What is the effect of GDP on Profitability of Conventional and Islamic Banks of Pakistan?
- What is the impact of Inflation Rate on Profitability of Conventional and Islamic Banks of Pakistan?
- What is the influence of Real Interest Rate on Profitability of Conventional and Islamic Banks of Pakistan?
- What is the consolidated impact of Internal and External economic factors on Profitability of Conventional and Islamic Banks of Pakistan?

1.6 Rationale of the Study:

In order to evaluate soundness and steadiness of banking sector, it is considered imperative to associate banking system with its profitability. Majority of countries have financial system that is based on banking system therefore, it is important to study profitability determinants of banking sector. Profitability of banks is significantly considered at both micro and macroeconomic level. Function of banking sector in micro and macroeconomic stability and economic growth turns out to be very important when the share of banking sector boosts in a financial system. Undoubtedly

profits are the essential part of a competitive banking sector. A sound and profitable banking system tolerate negative financial upsets and becomes the cause of durability in financial system, ultimately strengthening the economic system. (Akhtar, Ali, & Sadaqat, 2011)

The rationale to select banking sector of Pakistan can be argued with the fact that it falls under developing countries and its banking system contributes vitally in its national economy. Financial performance of banks affects many stakeholders together with depositors, institutional shareholders, regulators, potential investors and corporate owners. Pakistan's banking sector has experienced drastic changes over a period of 63 years including nationalization, de-nationalization, privatization and currently, the introduction of Islamic banking. Existence of a new model of Islamic banking captured the attention of Islamic and conventional economists as well. In Pakistan, Islamic banking is reported as most emerging area in finance and business sector and continued its growth even in the insecure economic conditions.

There is an extensive literature on investigating the profitability of conventional banks but it is still determining in terms of Islamic banking. Most of the studies related to efficiency of Islamic banks are based on theoretical approach having less empirical support. (Akhtar, Ali, & Sadaqat, 2011) In Pakistan, there is fewer acknowledged literature on profitability determinants of Islamic banking and its comparison with conventional banking has been also not recognized as much. As a result, present study will help in minimizing the gap between theory and empirical approach for Islamic banking and also it will discuss on profitability determinants of conventional and Islamic banking on comparative basis.

1.7 Organization of the Study:

The second chapter is consists of literature that shows the summary of previous work done in this sector. Third chapter exhibits the research methodology according to which quantitative research is to be conducted. Fourth chapter shows data analysis and key findings of the study. Finally, fifth chapter explains and discuss the findings and draw the conclusions.

CHAPTER TWO

2. LITERATURE REVIEW

2.1 Bank-Specific Factors

2.1.1 Bank Size:

It is observed that in order to compete effectively, banks need to advance their cost efficiencies. This would result in bigger growth of banks to achieve economies of scale. In commercial banking system, margins are squeezed due to competition therefore banks try to capture other sources of profitability. For this purpose, they reach to outside banks thus lead to expansion of banks. The meaning of expansion includes that banks can provide diversified product line of financial services, at lowest possible cost to their customers. (Milbourn, Boot, & Thakor, 1999) A limited bank size is based on a precise scale containing structure of monitoring costs and the degree to which a bank can attain portfolio diversification. As the portfolio restrictions of banks are not so rigorous, large sized banks are subject to improved risk diversifications as compared to those which are small. (Krasa & Villamil, 1992) Japanese banks generate inter-type competition among banks sometimes becomes unfavorable for small banks. In building a healthy relationship with their borrowers and for lending purposes, small banks have more competitive advantage. It is observed that bank size and firm size are also associated because of factors that generate customer differentiation. (Uchida, Udell, & Watanabe, 2007)

Organization size has been found to be represented by total assets of borrowers and statistically, denoted by logarithm of total assets. Size affects terms of loan and banks relationships. It is argued that a range of specialized banks acquire large transactions due to large firms. (Machauer & Weber, 2000) According to a previously done work, it was concluded that hard technologies possess variation for hard information based lending technologies and theses technologies gives comparative advantage for large banks. It is also suggested that large banks have more leasing practices as compared to practice fixed asset lending technologies. For small and large firms, there is more comparative advantage for large banks relative to medium size firms. (Berger & Black, 2011) The importance of bank capital leverage ratio has been discussed in literature and concluded that effect of policy on bank loan growth is explained by bank capital leverage ratio. In contractionary policy, bank's ability to raise funds and maintenance of loan growth is

influenced by bank asset size and bank capital. It is found that the banks which own less capital and are small, better respond to monetary policy. (Kishan & Opiela, 2000) SME lending has been evaluated thorough many specifications and it was found that bank size, measured by total assets of banks, is insignificant for SME lending in China. In contrast, small banks tend to support greater SME lending, as concluded by previous studies. Additionally, small and medium sizes banks generate more intense competition in local markets therefore promote more SME lending. It also suggested that the growth of small and medium sized banks is more stable. (Shen, Shen, Xu, & Bai, 2009)

According to literature, large banks more likely to be act as universal banks so these are open corporations and follow the law for providing services. Small banks are mostly international branches. They usually serve to large companies and do direct investments, and do not practice retail banking. Secondly, high cost levels and profit efficiency is found to be associated with higher ownership concentration. (Fuentes & Vergara, 2003) Another study shows that due to increasing returns to scale, many branches have significant relationship with scale inefficiencies. It is recommended for small branches to downsize its resources in order to get maximum productivity. It is also concluded that profitability and efficiency are interrelated. Branch expansion with keeping an existing level of input would be a better solution. (Camanho & Dyson, 1999)

2.1.2 Capital Adequacy:

It has been discussed in numerous studies that profitability of financial institutions can be derived primarily through capital adequacy. (Mathuwa, 2009) Along with deposits and borrowings, capital which includes equity and long term debts represents a supply of funds to the bank. When the money gets stiff, an undercapitalize bank appears to have higher levels of short term borrowings having high excess costs. Basel Accord formulated in 1988 explains that banks have to retain their equity funds parallel to risk-weighted proportions of their asset base. According to capital requirements of Basel Accord, banks may switch towards more risky assets within each asset class which is a potential impact on risk-weighted banks. (Tolga Ediz, 1998)

There is negative relationship between capital and earnings as it has been evidenced from traditional banking that high capital asset ratio is associated with low return on equity. A high capital ratio lowers the risk on equity resulting in less expected return on equity as required by

the investors. Additionally, a higher capital asset ratio minimizes the tax shield by deducting interest payments therefore, reducing the after tax earnings. A decline in earnings may cause lowering of access to federal deposits which is due to the lower risk induces by high capital asset ratio. (Berger, 1994)

Regulations are imposed on banks to control riskiness of the bank portfolios so that likelihood of failure could be minimized. But some other studies concluded that regulatory purposes include control of validity and stability of financial institutions. To evaluate the results of bank capital regulations, the association between riskiness of bank portfolio, the amount of bank capital held and chances bankruptcy must be found. (Koehn & Santomero, 1980) High level capital requirement makes a bank capable of absorbing more losses in failure and it encourages additional prudence in management. High capital levels are also preferred because it affects the soundness of entire banking system by influencing the likelihood of bank solvency. (Kim & Santomero, 1988) There are two effects considered on risk taking incentives from capital adequacy. One of them is marginal cost on risk taking. In case of strict requirements, there will be less profit in success and less loss in default situation. When the probability of success is higher, marginal costs of risk taking become higher and strict requirements are likely to increase the risk. Second effect in risk taking includes marginal returns of risk taking. If the bank achieves success, increase in risk today will cause high amount of available equity tomorrow. As a result high capital requirement for tomorrow will generate higher risk today. (Blum, 1999)

According to a study conducted for 50 countries, it was found that those banks possess high capital adequacy ratio which have more growth prospective. The estimated results report low capital adequacy ratios for the banks which have lower managerial efficiency that is implied from negative cost to income ratio. Conclusively, relative to shareholders' protection, ownership concentration positively affects capital adequacy ratio. (Shehzad, Haan, & Scholtens, 2010) It is observed that when banks have to make compliance with the prescribed leverage limit, they have to choose between raising additional equity and shrinking assets. Banks often select reducing their assets for maintaining leverage limit because it becomes costly, particularly for banks to increase their equity levels. In contrast, it has been disclosed that along with previous capital requirements, tier 1 leverage ratio imposes some severe restrictions regarding asset growth of the banks rather than increasing risk based capital requirements. In case of growth, either internally

or through external acquisition, banks have to maintain certain capital levels enforced by their exiting operational capabilities and portfolio risks. (Baer & Mcelravey, 1992)

While discussing upon new Basel Capital Accord, macroeconomic importance of capital requirements has been debated vigorously. It is argued that these requirements will enforce cut down of lending activities of banks in the period of recession. Risk responsive capital requirements will induce macroeconomic instability and it will cause exchange of more efficiency in capital allocation across banks. The best solution for banks is to hedge against increased instability of minimum capital requirement and it will induce new capital regulation effects upon macro economy. The problem that risk sensitive capital requirements result in procyclicality and it can be resolved by placing banks' capital buffer has been suggested by many authors. (Peura & Jokivuolle, 2003)

2.1.3 Deposits:

It has been evidenced from previous literature that deposit banking has been evolved from money changing activity. At early stages, money changers played the placement function after that the process is turned into creation of deposit accounts. Money changer opens an account for a trader who wants to exchange its money, rather than giving him money in return of money. If the amount is given by a supplier, the money changer will debit the trader's account and credit the account of supplier if that supplier has account with the same money changer. At the end, after making the necessary accounting entries, all the respective payment and receipts of clients were pooled and only net amount was paid to each other in case by the money changers. Therefore deposit banking reduces the overall volume of receipt and payments. (Kashyap, Rajan, & Stein, 2002) As part of the contract, banks' access to core deposits helps organizations by insulating them from credit shocks. Banks possess the right to charge less rates in bad times and compensatory rates in good times. A facility provided by banks to its depositors and borrowers is cross subsidization. In this bank has more independence to offer loan rates at breakeven period, if the bank offer a rate on deposits lower than market rates. For the purpose of building relationship and flexibility in loan pricing, there is a need for a comfortable budget constraint. A bank can only demand from its borrowers a single period profit maximization loan rate when for its funds the bank is forced to pay up to market rates. (Berlin & Mester, 1999)

It has been found fundamentally important in the literature that there is a time series association between deposit interest rates and their open market counterparts. Market rates such as Treasury bills and spreads between deposit interest rates significantly vary through time. When market rates are increasing, the spreads get widen and when market rates are declining, the spreads contract. It has been concluded that profit margins fluctuate considerably with the general level of interest rates, where the interest rates spreads are taking as prices of deposit services. (Hutchison, 1995) Prudential regulation has provided an important component of deposit insurance. Deposit insurance encourages confidence of general public upon safety of their deposited funds and enables a steady flow of funds to the banking channel. To reduce the incentive for banks to monitor each other and for depositors to observe banks there are Government deposit guarantees. The lack of monitoring may lead to heavy moral hazards by undercapitalized banks in case of absence of satisfactory government supervision. Therefore, insurance schemes establish implementation and incentive structure for all the involved parties. They also determine the degree and distribution of risk that could affect the soundness of banking system. (Opiela, 1998)

2.2 External Economic Factors

2.2.1 Gross Domestic Product (GDP):

According to Heidelberg, (2009) GDP is defined as market value of goods and services produced within a selected geographic area and in a selected interval of time. The selected geographic area is usually a country and selected interval of time is often a year. GDP is an agreed standard of measuring the size and health of a country's economy. It may also include total number of consumers, total investment and government spending, by adding value of exports and subtracting value of imports. Empirically it can be calculated by internal demand of a country which is determined through country's economic process and internal spending and secondly, it can be calculated through trade flow of country with other countries. (Garlaschelli, Matteo, Aste, Caldarelli, & Loffredo, 2007)

In current economic theory, development is more precisely defined in terms of growth in GDP. The further condition of development would be considered as growth augmentation will expected to move towards the poor and dropped down. GDP growth gets slower is case when any redistribution policy of GDP from rich to poor is being rejected. In spite of the fact that

public goods are not being produced in the free market, any re-composition of GDP is also rejected by taking it as government interference in the free market; in which GDP is to be re-composed from private goods to public good that will be available to all including the poor. It is agreed that aggregate growth is a key to development and in current global economic integration, the key to aggregate growth is free trade and free mobilization of capital; than the expected growth benefits will move towards the poor. (Daly, 2002) Productivity growth has shown a virtual cut down in the early 1970s, when it was growing after World War II for the quarter century. It remained continued for the productivity growth that its variations would be the most important puzzle to be solved in the macroeconomics. Productivity growth cut down was explained by rise in energy prices, unpredictably high inflation, increasing tax rates and government, oppressive regulations regarding health and environment, decline in research and development, deterioration in labor skills, reduced incentive possibilities, and social indolence. (Nordhaus, 2002)

As the GDP and the appropriate measures of net income and expenditure have been evolved over time, therefore these are considered as important statistics of actual economies. In representing an economy in terms of standard circular flow, they show supply, income and expenditure sides and act as complements. It was concluded also that depreciation, being the rate of constant value loss, distorts the distinction between net product, and net income and expenditure, so that they could not be able to overlap with each other. (Hulten & Schreyer, 2010) In many ways GDP is considered as fundamental measure of an economy. The growth in jobs increases with the increase in GDP. It is generally accepted also that inflation will increase if the level of real GDP exceeds from potential real GDP, even the relationship between GDP measures and inflation is proved to be fragile. It is considered critically important in formulation of monetary and fiscal policy to forecast GDP and understand its series influences. These considerations also help in assessing the limitations and possible alternatives of GDP. (Hobijn & Steindel, 2009)

In a study conducted for United States and Canada, it was observed that Granger Causality test were significant for Canada but not for United States, also the cause of growth in GDP of United States was exports. The results indicated that Canada being an open economy is more dependent on trade. The cause of distortion of long run relation between U.S. exports, imports and GDP was found to be its exceptionally large capital surplus. (Zestos & Tao, 2002) Similarly a GDP

study of Russia concluded that the country's economy is experiencing boom due to growth in oil and gas export revenues extracted from personal consumption. The data indicated that household consumption includes purchase of goods and services. In real and nominal terms, the amounts of retail trade turnover and charged services match to these two items. Conclusively, purchase of goods must have contributed in GDP more than purchase of services, because retail trade turnover is proved to be grown more than the charged services. Furthermore, changes in oil export prices are reflected by the exports price index dynamics. As a result the analysis shows no direct influence of oil prices on GDP in real terms. (Tabata, 2006) In an analysis of GDPs of 23 countries, some techniques were introduced to develop structures in macroeconomic system. The structuring and economic globalization was found to be parallel and shown normalizing the economic development of the countries with the influence of political considerations. (Ausloos & Lambiotte, 2008)

2.2.2 Inflation:

Short run inflation dynamics in considered to be central issues in macroeconomics. After a long investigation, there are few definitive answers available and are intensely debated. Philip curve was observed to have reasonably good description for inflation dynamics which is conditional on the path of real marginal costs. The estimate suggested that the method is not quantitatively important but statistically significant. It was also found that slow response of inflation to the output could be gauged through slow-moving behavior of real marginal costs but disinflation may demands output reductions. (Gali & Gertler, 1999)

The quarterly data of million people in twelve countries of Europe and United States appeared to give the results that when unemployment and inflation is low, people are happier. It was reported that unemployment affects satisfaction with life because the prices change even the personal characteristics of respondents were controlled. When there was increased inflation and unemployment, randomly sampled individuals were got lower in the well-being survey. (Tella, MacCulloch, & Oswald, 2000)

Stock return inflation relations vary systematically over time. In countries with well developed capital markets, stock return real activity relation is assumed to be stable and positive over time. On the other hand, equilibrium process in the monetary sector generates the association between inflation and real activity. Money demand based negative inflation was found to be associated

with real activity and both were strengthen by the counter cyclic monetary responses in the post war period. However if the relationship between real activity and inflation becomes positive due to following of pro-cyclic policy than the association between stock return and inflation could also be positive. (Kaul, 1987)

An empirical study reported the results of real output inflation tradeoffs for eighteen countries over the period of 1951-67. The results indicated that relatively stable structural features of economy induce the terms of tradeoffs and do not depend on the nature of aggregate demand policy. Inflation rates and output tends to move in the same direction by taking the effects of aggregate demand policies but unemployment and inflation move in opposite direction. As the supplier misrepresents the general price movements for relative price changes, tradeoffs get associated with changes in price and output increases. (Lucas, 1973)

Inflation forecast is seemed to be an ideal immediate target when the central bank plays the target role to imply inflation forecast targeting. It was reported that both implementation and monitoring of monetary policy can be simplified through inflation forecast targeting. Generally growth in money targeting leads to high inflation variability as compared to inflation targeting. If the money growth or exchange growth become intermediate target in some rare case, some relevant target is adjusted by inflation forecast targeting. (Svensson, 1996) In a small open economy targeting of CPI and domestic inflation, strict and flexible inflation targeting and inflation targeting reaction functions was estimated with a forward looking aggregate demand and supply, and the optimal response of monetary policy for several shocks was observed. The variability of CPI inflation, the variability of output gap and the real exchange rate were found to be successfully limited by flexible CPI inflation targeting. In contrast to traditional views, positive demand shocks and negative productivity supply shocks equally affect the inflation and output gap; therefore induce the similar responses of monetary policy. The monetary conditions index have shown less impact on aggregate demand but its impact on inflation is very complex and cannot be estimated through a single index. (Svensson, 1998)

2.2.3 Real Interest Rate:

Interest rates that are observed in day to day transactions are mostly prescribed in nominal terms. If an investor has money in its savings account, than how much money will be paid back by the bank as return on its saving will be in terms of nominal interest rate. In contrast nominal interest rate does not indicate the amount of return in terms of actual worth of goods and services. To find out this at the time when the investor's money is held in its savings account, the nominal return on savings must be adjusted with the amount by which prices are expected to be changed. Shortly, investor would have to subtract expected inflation rate from expected real interest rate to obtain the amount of return on its savings. (Archibald & Hunter, 2001)

Economists suggested that by following the equilibrium, the nominal interest rate must be made neutral by adding adjustment of expected long run inflation in the real interest rate. Neutral real rate of interest is considered as benchmark by the policy makers for monetary policy as the rates higher the real interest rate will lower the inflation rate and vice versa. As an important indicator of monetary policy, the real interest rate gap which is the difference between the real short term interest rate and estimates of neutral real interest; is not considered a reliable source by the policy makers. Therefore dynamic stochastic general equilibrium techniques are designed as developing estimation strategies by the economists. (Garnier & Wilhelmsen, 2005) It has been concluded in a study that exchange rate is negatively associated with nominal interest differential but positively associated with expected long run inflation differential. When the money is tight, nominal interest rate is high and exchange rate will lie below the equilibrium value. The exchange rate will be equal to equilibrium value if the nominal interest rate will be high due high expected inflation differential. Furthermore it will be increase over time with increase in inflation differential. (Frankel, 2001)

An older study of euro deposit market in 1967, conducted to check real interest rates of the countries included: the United States, Canada, United Kingdom, France, West Germany, Netherlands and Switzerland. It was found that where the banks have issued their own currencies' securities, those countries have dominated euro deposits and also with similar default risks. As there is capital control, to adjust difference is default risk cannot be adjusted in the comparison of real euro rates across the countries. (Mishkin, 1984) Another study estimated the real interest rates of nine countries having 15 years old liberal capital markets. The evidences

concluded that the real interest rates of all countries are highly correlated with estimated world real interest rates, except U.S. The effect of strict regulations on capital markets also affects the equality of real interest rates across the countries. Countries having restricted financial markets have similar real interest rate as that in estimated world real interest rates. (Gagnon & Unferth, 1993) In a comparative study between long run real interest rate differentials and real exchange rate over the recent floating exchange rate period for 14 industrialized countries. United States' currency was used as denominator in data penal of country pairings. Because the developments in United States heavily influence upon its real interest rate and exchange rate as well. The results were found to be consistent with previously done single country studies. Real interest rate was found to be statistically significant for long run relationship in currency pairings. (Macdonald & Nagayasu, 2000)

Some empirical tests applied on international integrated capital markets across the countries to observe the extent to which capital flows and arbitrage tends to equalize real interest rate. The findings revealed that there are nonlinearities in patterns of adjustments for real interest rates. Furthermore the relationships of real interest rates may be complex due to these nonlinearities and these can be represented by the nonparametric test more precisely. (Mancuso, Goodwin, & Grennes, 2002)

2.3 Profitability

The profitability measures used in the study are Return on Assets (ROA), Return on Equity (ROE), Return on Capital Employed (ROCE) and Net Interest Margin. The most comprehensive measure to examine the performance of banks largely is considered to be ROA. It also indicates the efficiency of banks and verifies the earning ability of a bank for its each operation. Furthermore, it shows banks' profit generation process from the utilization of financial and real investments. On the other hand, ROE shows the efficiency of banks in appropriate deployment of shareholders' investment and informs the shareholders about increased book value earnings of their investments. As ROE is influenced by the well performance of banks on all other return categories, it is agreed the most important measure for calculating bank earnings. It also indicates bank's capacity to participate for private sources in the economy. (Bashir A.-H. M., 1999)

Earning capacity is mostly counted by the efficiency of management. Commercial banks facing loss overthrow financial health of their shareholders by reducing capital base and putting

themselves into solvency risk. On the other hand profit making commercial banks continuously add equity to their capital, reduce insolvency risk and thus create value maximization for its shareholders. Therefore earning capacity is considered an important indicator to measure financial soundness of commercial banks, which is measured by ROA and ROE. In order to show a satisfactory earning capacity, ROA of commercial banks should lie in the range of less than 3 to 2 or equal to 2. (Baral, 2005) Retail banks' profit consists of two components, firstly revenue increasing and cost incurring operations in which those revenues and expenses are included which do not influenced by interest rates. Secondly banks' treasury activities including such costs and revenues which fluctuate with interest rates. ROA possesses both interest rates-sensitive and non-interest rates-sensitive components therefore it is considered an appropriate measure for profitability. (Hallowell, 1996)

According to a study, Return on Capital (ROC) is a deficient measure for examining the efficiency because it is influenced by accounting methods, depends on capital disbursement patterns and thus varies industry to industry in systematic manner. It is observed that firms having substantial part as intangible capital shows high returns so this is considered as an important bias in measuring ROC. On the other hand, those industries whose capital consists mainly of marketable plant and equipment show very low returns. Therefore it is argued that there is an association between asset tangibility and ROC due to some distinctive factors that induce the association and these assets would be termed as intangible capital intensive assets. Although the firms show strong key factors, forcing product relationships, but the factors are non-specific thus association presents low profitability. (Rumelt, 1982) It was observed that ROA is the ratio of net income to assets which is used as a profitability measure. It is expected that the relationship between profitability and degree of capitalization is negative as bank will earn less profit if it takes less risk due to high capital levels. However, high capital levels lower the expected bankruptcy by lowering the funding costs; hence shareholders get more incentive to monitor the management of organization. It is also observed that if the risk ratio is higher in terms of liquidity, than the bank will move towards profitability more aggressively. ROA has to be increased with risk therefore it is expected that there is positive relationship with risk and highest yielding type of assets of bank. The results also included that bank size also determines the profitability in case of increasing returns of scale. (Chortareas, GarzaGarcia, & Girardone, 2005)

Another study used ROA and ROE as measures of profitability and profits and market structure variables are expected to have positive relationship with the efficiency so that there must not be an association between profitability and market share. (Fu & Heffernan, 2008) Some evidence was found about significant relationship between size and profitability for some estimation. But the overall systematic relationship of size and profitability was not so convincing. Although there was not found a theoretical relationship between risk and return, since the capital asset ratio and profitability was positively associated. A bank having high capital asset ratio shows it over careful operations and ignorance for potential trading opportunities for profit. For USA, the capital asset ratio and ROE association was positive also relates to insurance costs for bankruptcy. Managers use it for increasing expected future profitability and use capital asset ratio as signals for high profitability thus making this capital asset ratio and profitability relationship positive. (Goddard, Molyneux, & Wilson, 2004)

The interpretation of net interest margin may be as index of bank efficiency. But there is always not the case that bank efficiency improves due to decline in net interest margin. Decline in interest rate margin will cause reduction in bank taxation ultimately loan default rate will be higher. If the ratio of net interest margin faces some variations, the net interest income or non-lending assets differences might be changed. The results have shown that well capitalized banks exhibit more profitability due to high net interest margins. Additionally banks' interest rate margins fluctuate with the variation in overhead and operating costs. (Kunt & Huizinga, 1998) If everything remains constant, bank have less pre-tax profits if ROA and ROE is less and it is due to higher operating cost and higher interest rate margins. Difference in operating costs causes distinction in business and product mix, and variation in range and quality of offered services. Net interest margins and profit will be higher if the equity ratio is higher so there will be no need of external funding also. This relates to highly capitalized banks which have less cost for going into bankruptcy thus their funding costs also get reduced. (Mendes, 2003)

Profitability seems to be mean reverting in a competitive environment. This prediction was examined and the results show 38% rate of mean reversion per year in simple adjustment model. This reversion is proved to be highly non-linear. If profitability is less than mean than reversion is quicker and far from mean on the basis of direction. Variation in earnings are also found to be predictable and related with mean reversion of profitability. It can be used to forecast earnings as

practical implication of this result. In specific model of profitability mean reversion, changes in negative direction have shown and in contrast with predictions, severe changes have shown to overturn more rapidly than predicted. (Fama & French, 2000)

In a study the association between business cycle and bank behavior was discussed over two decades for 26 industrialized countries. Profits are shown to fluctuate with business cycle and proposed accumulation of capital in the period of boom. Credit losses increase with the decrease in business cycle, but decrease when banks have higher net income also causes reduction in cyclic behavior. Also demand driven lending fluctuates with business cycle contradicting the capital crunch theory. (Bikker & Hu, 2002)

Bank credit to bank deposit ratio would be an indicator of efficiency which provides private sector to use deposit money banks for their deposits. It also captures the ability of the bank for direct credit for private sector. Secondly net interest margin has been used as profitability indicator which is accounting value of interest revenues of bank and overhead cost is the accounting value of overhead costs of banks. It has been observed that high net interests margin levels and high overhead costs leads to declining banking efficiency. If bank incurs high costs than bank has high block between lending and deposit rates of interest. In high income countries, net interest margins are falling below the already low levels. Finally, cost income ratio measures overhead costs related to gross revenues as efficiency measure of banks; and high ratio indicates lower level of cost efficiency. (Beck, Kunt, & Levine, 2010)

2.4 Bank-Specific and External Economic Factors and Profitability

There has been done a lot of work in the past on factors affecting profitability of commercial banks. (Dawood, 2014) Those factors were categorized in two major parts, that is, bank-specific factors and external economic factors. Many researchers have studied these factors separately such as some have taken only bank-specific factors to be combined with profitability, and some have studied impact of external economic factors on profitability. Internal factor includes banks specific factors that can be discovered in specific banking terms such as bank size, liquidity, capital adequacy, deposits, advances and management efficiency. External economic factors include macroeconomic factors of the economy such as gross domestic product (GDP), inflation, market capitalization, and interest rate margins.

According to Molyneux & Thornton, (1992) capital ratios and nominal interest rates have positive relationship with profitability and the expected results confirm Bourke study. Government ownership also shown positive relationship with profitability but liquidity ratios have shown weak and inverse bindings with profitability due to imposed liquidity holdings bank costs. In a regulated industry, it was found that high expenditures on payroll makes appropriated for high profits. Additionally in European banking sector preference is given to the expense behavior. The study supported traditional concentration and bank's profitability studies conducted in U.S.

The stock market of Malaysia is volatile and risk is associated with the securities investments therefore, security investments are less profitable as there are regulatory restrictions also for loans to finance securities. Current account deposits are found to be very profitable because direct interest is given on these accounts. Banks link these accounts with other savings account and offer new payments on its which are transferable in these linked accounts. Liquidity has shown an expected negative behavior but inflation has shown a positive relationship with profitability viewing that there are anticipated inflation rates from the bank management. Market interest rate is also positive showing loan elasticity which should be such that in expanding economy and have joined with business confidence. (Guru, Shanmugam, & Staunton, 2002) In contrast, operations of Islamic banking are performing well as expected, instead of it mainstream banking is performing better than Islamic banking in Malaysia. The reason is that Islamic banking is yet to develop in terms of larger market size, durable experience and financial depth which other banking system possesses. ROA, net profit after tax and operational efficiency are found to be higher and significant for Islamic banking but asset utilization and interest margin have shown significant behavior for conventional banks. It could be concluded that these ratios might be inappropriate for Islamic banks for some technical defaults. (Rosly & Bakar, 2003)

Proven by the old studies, well capitalized banks do not need external financing so their costs get reduced and profit enhances. The main profitability determinant of UK commercial banks is capital strength measured by equity to asset ratio in the study of UK owned commercial banks over the period of 1995-2002. Cost to income ratio and bank size is negatively related to profitability while liquidity impact varies with the profitability measure used. In case of external

economic factors it has shown that those have relatively small impact, but GDP and inflation have positive impact on profitability. (Kosmidou, Tanna, & Pasiouras, 2005)

The study of one hundred developing countries concluded that interest rates are rising in industrial countries as a change in global financial conditions participating in banking crisis also. In the second half of 1997, East Asia was threatened by banking crisis and the real GDP growth rate were found to be declining after 1995. (Eichengreen & K. Rose, 1998) The exchange rates of ten countries from Latin America provided evidence of co-movements across the countries and seemed to become the cause of capital inflows towards Latin America. Real exchange rate variation was found substantial when compared with reserves as exchange rate differences in cross country regimes and flexible degrees of price and wages could be considered as important factors for less co-movement level. Also the effects of external shock were also observed. Domestic polices was found to be unchanged but the exchange rate was highly fluctuated with foreign factors. The findings indicated that increase in foreign interests causes increases the capital outflow from the selected countries. Also it is observed with the decrease in interest rates of U.S. official reserves accumulation takes place and in most countries exchange rate appreciates. (Reinhart, Calvo, & Leiderman, 1993) A study on 1579 chartered U.S. banks of de novo over the period of 1980-1993 determines the profitability of newly chartered banks in comparison of the previous ones. It used profit frontier model to explain the performance of de novo banks after they got chartered. The efficiency of established banks was found to be 50% and after 1 year of operation, the bank has 12% profit efficiency, however the profit efficiency is found between 9 to 14 years of operation. Some other factors including economic, regulatory, structural and financial conditions were also studies in relation to profitability. The results suggested that newly chartered banks have less opportunities regarding branch location and financing of purchased funds and same is the case with established banks. Companies having multi banks and their newly affiliated banks are less profitable at the initial level as compared to the de novo banks which operate independently. It was also found that national banks of de novo are less profitable at start as compared to those which are state-owned and the difference is based on difference in rules of federal and state bank regulators. (DeYoung & Hasan, 1998)

Banking system of Macao has been facing major challenges over the past decade in the dynamics of current operating environment. The study revealed that a more safety concern is associated

with high levels of equity capital so this safety advantage relates to the profitability of bank. In contrast, high loan to asset ratio has shown less profitability. Interest spread is an important indicator of profitability but in this study, it gets lower due to successive interest rate cuts and due to competitive conditions of credit market. Lower spread and high provision of loan loss lowers the profitability leads to the conclusion that spread and loan quality matters more than loan size. Also small bank size captures high return on assets as compared to large banks. On the other hand in case of external economic factors, the results reveal that only inflation rate significantly affects the return on assets and the positive relationship suggests that with increase inflation rate, income of the bank increase instead of its cost. (Vong & Chan, 2009)

The empirical analysis on the data of Philippine banks indicated that all the internal and bank specific factors significantly affect the profitability of these banks. It has shown from the results that variables of bank size, credit risk and overhead expenses have negative impact on profitability but non-interest income and capitalization positively affect the profitability. On the other hand inflation negatively affects profitability of the banks leads to the fact that inflation rate was not anticipated by the banks. Other external economic factors, economic growth, money supply growth and stock market capitalization level have shown insignificant behavior for profitability. It was argued that financial institutions will be able to attract more customers by offering new products and services if the institutions are more profitable. Advancements in technology are very useful for competitive advantage and the success highly depends upon efficiency, competitiveness and profitability for Philippines banks. (Sufian & Chong, 2008)

The existing literature verifies that profitability of banks could be controlled by two broad categories of variables which include firstly the specifically related variables and secondly macroeconomic variables of the operating environment of banks. Performance of banking institutions significantly influenced by inflation and private consumption. In terms of bank-specific factors, capital or cost efficiency measures found to be significantly affect the banking profitability. It was also suggested that if appropriate measures are used for screening, monitoring and forecasting the upcoming risk levels, the profitability of banking sector could be increased in Greece. However it is important that macroeconomic environment and specific bank circumstances must be taken into consideration before designing such kind of monitoring tools. (Alexiou & Sofoklis, 2009) The Greek banking structure has been noticeably affected by the

liberalized banking system, organized legal system to matchup the international standards and radical changes in technology. Greek banks through mergers, acquisitions and expansions into North East Europe, have tried to strengthen their position into the new era of banking after adopting Euro. The profitability of Greek banks, measured by ROA and ROE was mainly explained by structural market changes and improved competition over the last decade. It has been revealed from the results that personal expenses, loan to asset ratio and equity to asset ratio are mainly associated with profitability and strategic planning of the banks. The market is highly influenced by economies of scale and its size positively gives benefit to profitability. Moreover, market size and money supply is also found to be significant in measuring profitability. (Mamatzakis & Remoundos, 2003)

Another study used econometric methods to explain dynamic panel data models to examine bank specific, industry specific and macroeconomic determinants of profitability of Greek banks. The results suggested that bank profitability is increased by capital and decreased by high exposure to credit risk. Furthermore, labor productivity growth significantly related with profitability and with positive impact, operating expenses are negatively significant showing the instrumental decisions of bank management about the cost effect on profitability. It was also observed that economies of scale could not evidenced by bank size. Bank's profitability and ownership status was found insignificantly related and shows that during the considered period, private banks are relatively less profitable. The relationship between industry concentration and bank profitability was also insignificant. In terms of macroeconomic variables, the results supported inflation and cyclic output when related with profitability. It was found also that in case of high output trends, business cycle influence is asymmetric and its correlation is positive with profitability. (Athanasoglou, Brissimis, & Delis, 2005)

Impact of banking factors, financial structure along with macroeconomic indicators was investigated in Tunisian banking system for the period of 1980-2000. Dependent variables included bank net interest margins and profitability. It was observed that within the country, bank interest margins and profitability was substantially characterized by individual attributes of bank. Those banks which hold high capital levels and relatively high overhead expenses were found to be associated with high interest bank margins and net profitability. Bank interest margin was also associated with bank loans positively and significantly. In contrast, size has shown

negative and significant association with net interest margin reflecting ineffectiveness of scale. In terms of macroeconomic variables, it was originated that inflation has positive but growth rates has no influence on net interest margins and profitability of banks. In terms of financial structure, the results reveal that concentration can be more beneficial for Tunisian banks' profitability and spreads as compared to competition. Profitability was also found associated with stock market development showing the complementarities between bank and growth of stock market. It is favorable for Tunisian banking system and its profitability that there must be disintermediation of financial system and profitability. (Naceur & Goaied, 2003)

An empirical analysis has shown a strong and significant connection between market size and ROE of banks. The results suggest that to remain profitable, banks need capital adequacy. It was also shown that banks in Bangladesh are not holding expensive capital. There was found a negative association between bank's risk and ROE showing that commercial banks in Bangladesh are facing high risk on loans which is the cause of low returns. The banks are considered more prone to risk because the banks are facing risk more than its provisions. There is significantly negative relationship between credit risk of bank and ROE, suggesting that credit risk could be managed by increasing amount of bank deposits. It can also helpful in increasing market size leading to the high returns of commercial banks. It was also found that defaults risk can be minimized by proper decision making process but interest risk can only managed and controlled by central bank because it is a macro factor. In contrast, good management may not be termed as internal factor of the banking system in Bangladesh. (Jahangir, Shill, & Haque, 2007) Just like other developing countries, South Asian Countries are experiencing effective financial reforms which are affecting the banking system significantly. To observe these reforms, most of the academic studies are focusing in the relationship between these reforms and their impact on performance of commercial banks. Another study on performance of 37 commercial banks of Bangladesh for the period of 1997-2004 concluded that bank specific factors like intensity of loans, credit risk and cost has shown positive and significant relationship with banks performance. Non-interest income negatively affects banks performance and the behavior of size varies with the measure of profitability selected, as it is negative for ROE and positive for ROA and for net interest margins. There was found no significant impact of macroeconomic indicators on performance of banks, except inflation which is negatively associated with profitability. (Sufian & Habibullah, 2009)

Sufian (2011) studied banks' profitability by controlling a specific arrangement of different internal and external economic factors of different Korean banks over time period of 1992-2003. It was found that those Korean banks show high profitability that has lower liquidity levels. Said & Tumin, (2011) investigated the impact of bank-specific factors of bank included liquidity, credit, capital, operating expenses and size of bank on performance of Chinese and Malaysian Banks. Similarly a study was presented on liquidity determinants of Czech commercial banks over the period from 2001-2009.

Ponce, (2011) investigated profitability of Spanish Banks for the period of 1999-2009. Results indicated higher bank profitability due to large percentage of loans in total assets, a high proportion of customer deposits, good efficiency and a low credit risk. Similarly the study of Ongore & Kusa, (2013) has provided the findings that bank performance is affected by bank specific factors in Kenya, except the variable liquidity. Also overall effect of macroeconomic factors is insignificant. In case of Latin America, the study made improvement in the previous literature through indicating market power and efficient structure hypothesis for 2,500 commercial banks over the period 1997-2005. The results show robust indications for large markets namely Brazil, Argentina and Chile and also show that capital ratios and bank size explains high profitability. (Chortareas, Garcia, & Girardone, 2011)

Raihan & Hoque, (2013) used internal and external corporate governance mechanisms to show their relationship with profitability. The displayed results were about the insignificance of bank board size, bank age, bank size, capital adequacy ratio, loan to deposit ratio and debt to equity ratio, that lead to un-satisfactory corporate governance performance. Banking profitability was also estimated for the commercial banks of Sub-Saharan Africa by using cost efficiency model, with explanatory variables of growth in bank assets, growth in bank deposits, capital adequacy, operational efficiency and liquidity ratio; and GDP and inflation as macroeconomic variables. Their results show fluctuations in both external and bank-specific factors with bank performance. (Francis, 2013) The factors taken for 13 Jordanian commercial banks for the period of 2005-2011 in a study were return on assets, cost efficiency, liquidity, credit composition, credit risk, capital adequacy and bank size. The results have shown that cost income ratio is an important endogenous factor that determines commercial banks' profitability in Jordan, under the control of management. All other variables' effect was shown none. (Almumani, Impact of Managerial

Factors on Commercial Bank Profitability: Empirical Evidence from Jordan, 2013) Similarly the effect of bank size, bank capital, expense management, interest income and economic conditions was investigated on bank's profitability in Nigeria. The results indicated that higher banks' profitability and growth depends upon advanced bank capital and interest income; proficient expense management and favorable economic conditions as well. Thus it concludes that banks' regular capital raising process and its enabling environment must be encouraged through sound governmental policies in banking system, leading to the accelerated economic growth in Nigeria. (Obamuyi, 2013) In case of Tunisian banks, some bank specific bank-specific factors, financial structure, macroeconomic factors and profitability was studied leading to the conclusion that competition would be more beneficial as compared to concentration for Tunisian commercial banks. Also showing complementarities between stock market growth and bank, it concludes that stock market development has positive impact on profitability of banks. (Naceur S. B., 2003)

As aimed by the present study, the relationship between bank specific and macroeconomic determinants with banks' profitability was also examined in Turkey from 2002-2010. Its results revealed that asset size and non-interest income is positive and significantly related to banks' profitability. Instead of it, size of credit portfolio and loans under follow-up has negatively significant effect upon profitability. Also only the real interest rate, from macroeconomic variable, positively affects the performance of banks. (Alper & Anbar, 2011) Similarly, for assessing the relationship between internal and external economic factors and banks' performance, a balanced data set of Jordanian banks was used over the period of 2001-2010. The results included that well capitalized banks, high lending activities, low credit risk and efficient cost management positively associated with banks' performance. Only bank size did not explain a significant support to economies of scale. Thus, most of the factors have shown significant variations in the banks' profitability. (Ramadan, Kilani, & Kaddumi, 2011) When the same study was conducted by using a data set of 38 banks in Kenya, the results disclosed that bank specific factors are significantly associated with banks' profitability. In contrast, all the market structure factors; foreign ownership and market concentration are insignificant. The findings suggest those policies that would support revenue diversification and minimization of liquidity holdings; and reduce operational costs and credit risks of the banks. (Olweny & Shipho, 2011)

Additionally, bank's profitability influencing factors were also studied for Iranian banks. The study used bank-specific factors that includes ownership ratio, ratio of bank customers', deposit to bank's assets, ratio of total loans given to all assets, ratio of total interest free loans on total assets and ratio of interest free revenues to total revenues. While economic growth, actual rate of interest and rate of inflation was taken as external economic factors. Findings revealed that ownership ratio, ratio of total equity on total assets and rate of inflation were negatively associated with profitability. However, ratio of customers' deposit on total assets, ratio of total loans on total assets and economic growth were positively linked with banks' profitability. (Ghadimi, Taghavi, & Kassaipour, 2012) The determinants used for investigating banking profitability of China included bank specific, industry specific and macroeconomic factors. The results confirmed that the Chinese banking industry possesses a competitive environment and indicated that the cost efficiency, banking sector development, stock market development and inflation positively affects banking profitability. Also it was reported that non-traditional activity and higher taxation could cause low profitability. (Tan & Floros, 2012)

In case of Nigeria, the results revealed that high assets may not related to high performance of banks as shown by negative coefficient of size. It also shows diseconomies of scale caused by the increased size of the banks and which cannot be controllable. High profitability was found associated with high loans and advances showing that more dependence on any one major asset cannot impact on overall profitability, but can cause a slight increase in profitability. Asset composition and capital adequacy are the major determinants of profitability. It is suggested for Nigerian banks to remain profitable and sustainable; they should diversify their assets and should manage liquidity and profitability adequately. (Ani, Ugwunta, Ezeudu, & Ugwuanyi, 2012)

Similarly the results for Ukrainian banks revealed that increased and less costly equity capital can increase profitability. It was shown a weak management system for managing administrative expenses. Liquidity was found strongly significant but negative influence on profitability but with relationship with foreign banks, liquidity has shown positive impact suggesting better liquidity management of foreign banks. Relative to bank size, deposits has shown positive association with profitability and size also significantly affects the profits. In terms of macroeconomic variables, GDP shows positive relationship with profitability but inflation has insignificant relationship. Also exchange rate depreciation affects significantly positive and

foreign ownership dummy variable affects significantly negative for profitability. (Davydenko, 2011) Consequently, banking sector profitability along with its impact of internal and external economic factors has been vigorously at international level.

In terms of Islamic banking, capital and loan ratios are found positively affecting the profitability showing that profitability is well explained by capital adequacy and loan portfolios. The results suggested that customers, short term funding, non-interest earning assets and overheads are helpful in promoting profits in banks. The relationship between profitability and overheads could be elucidated in terms of high wages and salaries lead to high profits, showing an expense preference behavior of Islamic banking market. Islamic banks profitability is also significant with contribution of foreign banks and operations of Islamic banks are found motivated by the induction of foreign capital in many developing countries. Tax factor has been shown significant and important effect on performance of Islamic banks, and these effects distortion of Islamic banks due to financial repression. It was suggested high profits are generated with the help of favorable macroeconomic environment. High profitability was found related to high GDP per capita and high inflation showing their positive impacts on profitability. (Bashir A. H., Determinants of Profitability and Rate of Returns Margins in Islamic Banks: Some Evidence from Middle East, 2000)

There is a suggested room for further improvements for Islamic and conventional banking system in terms of cost and profitability to survive in the competitive banking industry. As evidenced by overall efficiency results that the bank is less focused on utilizing its resources as compared to generating profits. The study suggested that over the years' analysis, cost efficiency is not stable as much as profit efficiency is. The findings have not shown a remarkable difference between conventional and Islamic banking in terms of cost and profit efficiencies, also the results does not depend on size, age and location of the banks. Lowest cost efficiency as demonstrated by African Islamic banks while the highest was shown by Middle East and Turkish Islamic banks. Similarly small and African conventional banks have shown less profit efficiency and big conventional banks were topped the race. (Mohamad, Hassan, & Bader, 2008)

Domestic banks of Pakistan have shown greater capability to explain changes in ROE and ROA as compared to foreign banks, concluding that foreign banks are facing different market conditions and operating factors related to their home market. It is observed that domestic banks

of Pakistan are more profitable denoted by their earnings per share and foreign banks are found more capital efficient. The evidences for the influence of GDP were also found and results have shown that impact of inflation is less for domestic banks as compared to foreign banks. (Azam & Siddiqui, 2012)

The overall discussion leads towards the conclusion that determinants of profitability are not similar across the countries, even for the same sector i.e. banking. Internal and external economic factors are differently focused and mixed results have found until now. Also these factors perform differently with respect to every measure of profitability. Therefore, this ambiguous discussion urges to focus profitability with different set of internal and external variables in the context of both conventional and Islamic banking by forming the following hypotheses:

H_1= There is direct relationship between Bank-specific Factors and Bank's Profitability

H_{1a}= *There is direct relationship between Bank Size and Bank's Profitability*

H_{1b}= *There is direct relationship between Capital Adequacy and Bank's Profitability*

H_{1c}= *There is direct relationship between Bank Deposits and Bank's Profitability*

H_2= There is direct relationship between External Economic Factors and Bank's Profitability

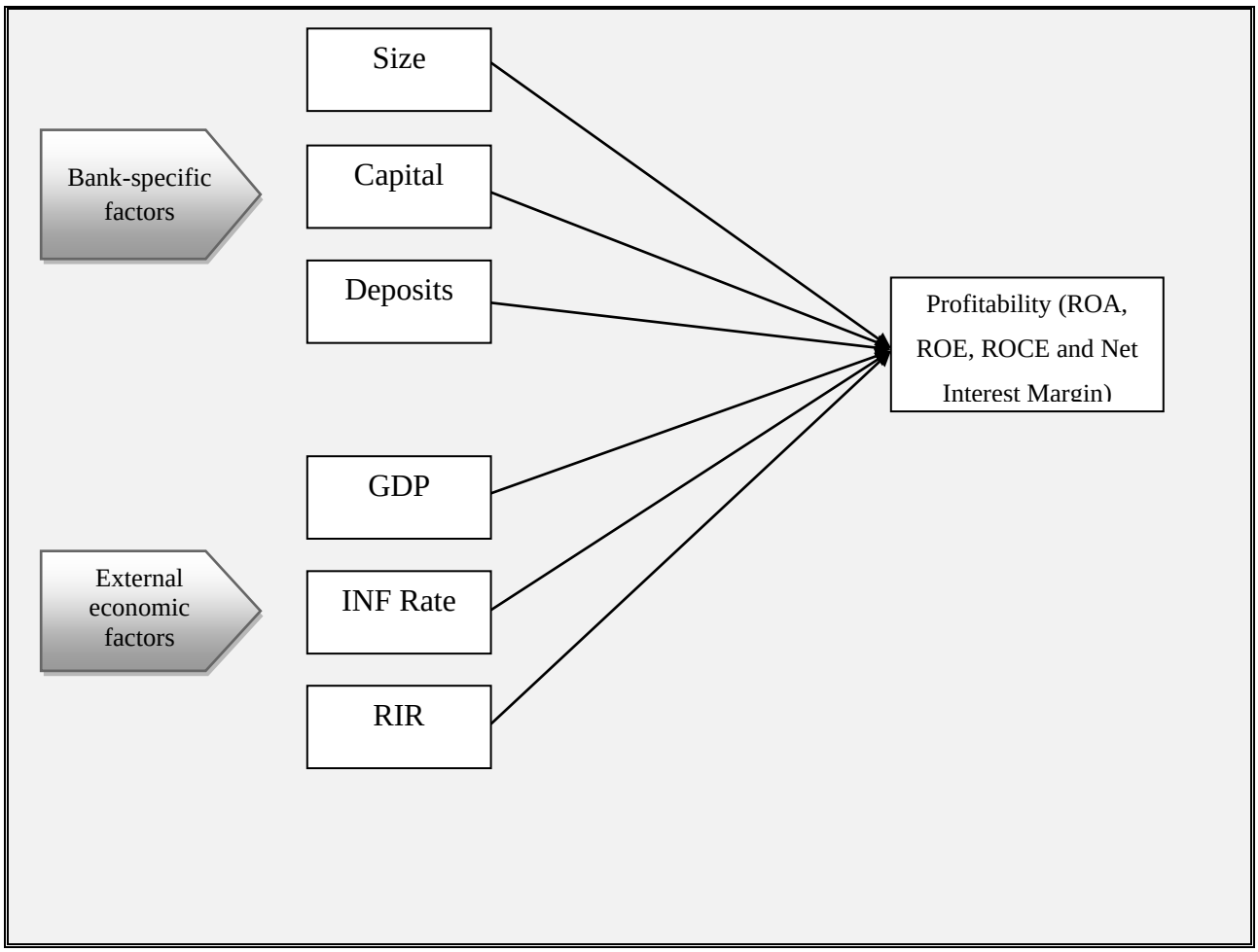
H_{2a}= *There is direct relationship between GDP and Bank's Profitability*

H_{2b}= *There is direct relationship between Inflation Rate and Bank's Profitability*

H_{2c}= *There is direct relationship between Real Interest Rate and Bank's Profitability*

In the present study, ROA, ROE, ROCE and NIM has been taken as dependent variables for measuring bank's profitability. These have analyzed with selected independent variables or bank-specific factors i.e. Size, Capital and Deposits; and with selected macroeconomic factors i.e. GDP, Inflation Rate and Real Interest Rate separately. The following theoretical model represents the determinants of bank's profitability:

Determinants of Bank's Profitability: Figure 1



CHAPTER THREE

3. METHODOLOGY

3.1 Research Paradigms:

The term "Paradigm" may be explained by the combination of beliefs and observations. Paradigms are comprised of relationships and implications of actions. These are basically the mindsets of people supported by their conversations and actions. These mindsets emerge socially rather individually and vary with time and place. Additionally, these mindsets are emerged with the interactions of people among each other. (Kinash, 2006) Paradigms are different categories for the construction of singularities in making the science more practical. As every person has his own different way of practicing science so everybody design its own categories for practicing science according to its personal attitudes. A paradigm provides a foundation for the subject matter of science. It provides some specific collection of questions, viewpoints and models to the authors, publishers, theorists and researchers who are subscribing the specific paradigm for approaching towards the science. In short, it helps in defining what should be studied, what questions are to be asked and by following what rules, how the answers should be obtained. It differentiates different science communities by defining and interrelating examples, theories, methods and tools which exist within the science. (Gokturk, 2009)

Many researchers such as Berry and Otley, 2004; Creswell, 2009; Saunders, Lewis and Thornhill, 2009; Neuman, 2011; has emphasized the importance of research paradigms as an initial question to be put forward for conducting the research process. These paradigms are essential in framing and understanding the phenomena of social sciences. Following the previous studies, basic philosophical assumptions have been discussed in this regard:

3.1.1 Positivism

In this paradigm, the researcher follows generalization and for measuring a social phenomenon he uses value free research. It is believed that same factual research problems are focused by different researchers for which they use careful statistical measures and a large sample is investigated through the same research process. The paradigm contains universal concept of generalization also termed as realism. (Wahyuni, 2012) In measuring the phenomena of science, positivism dominates because it quantitatively measures the individual facts of a singular reality.

It believes upon the kind of knowledge which can be observable and measurable and beyond that reality would be impossible. These researchers work on real world truth that can be operated by laws, scientific methods; also can be predicted and controlled. (Krauss, 2005) Positivism consists of observing and describing the phenomenon through contextualization in the form of a model or theory, formation of hypothesis, predicting that hypothesis in a controlled experimental study by applying different statistical tools and finally interpreting the results there on. (Ponterotto, 2005)

3.1.2 Post-positivism

The believers of this paradigm challenge the concept of absolute truth in association with study of human behavior. They also believe upon generalization theory but with critical realist attitude, which elaborates the social realities must be observed in a specific context with respect to any law so that the social phenomena could be made observable. (Wahyuni, 2012) These researchers do not accept some aspects of positivism and believe that perfect reality cannot be attained and truly captured because in the phenomena of life, human intellect is being interacted. In contrast with this researchers of post-positivism also believe on controlling and predicting the phenomena. (Ponterotto, 2005)

3.1.3 Interpretivism

This paradigm lies on opposite extreme of positivism also termed as constructivism. It believes that perceptions and actions of the people construct reality. In constructing the reality, people use their social background assumptions and experiences along with their social interactions. As the human behaviors and experiences are subjective, therefore, multiple perceptions create difference in social realities. (Wahyuni, 2012) Interpretivism is mostly based on relativistic approach and considers that realities are multiple and equally valid. It argues that rather being appeared singularly, reality is constructed in a person's mind individually. It is the specialty of this paradigm that investigator and object of investigation directly interact with each other. (Ponterotto, 2005)

3.1.4 Pragmatism

Pragmatism believers do not stand in any of the opposite option. They consider both subjective and objective perceptions of reality. It is a social phenomenon which creates a mixture of ontology, epistemology and axiology of positivism and interpretivism paradigm. It is also

believed that social reality can become more understandable by applying both quantitative and qualitative methods. (Wahyuni, 2012)

3.2 Research Methods:

3.2.1 Quantitative Research Method

The believers of positivism paradigm use quantitative research method. It is an objective, formal and systematic approach to measure some scientific phenomenon in quantified form with the help of numeric data and produce findings. This process uses deductive approach by explaining, examining and determining the cause and effect relationships within the subject of the study. (Carr, 1994) In quantitative methods, variables are controlled carefully and empirically and its data consists of quantified observations. This method involves large sampling and group means and variances are examined by applying statistical procedures. The stress is given on the determination of correlation and causal relationships between different variables. (Ponterotto, 2005)

3.2.2 Qualitative Research Method

Qualitative research falls under the paradigm of interpretivism. In contrast with quantitative research, qualitative research does not quantify things and use inductive approach for analysis of a certain theory. It involves in depth study and analysis of data within a small and selective sample. (Carr, 1994) Qualitative research focuses on relativistic and constructivist approach and argues that reality is never objective. Instead of it, humans create multiple realties with the help of their experiences according to the phenomena of interest. People perceive the world individually and construct different meanings of reality. It involves analysis through in depth structured, semi structured interviews and case studies. (Krauss, 2005)

3.2.3 Mixed Method Research

Mixed method research is a combination of quantitative and qualitative research methods. It is argued that both quantitative and qualitative paradigm possess the same goal of understanding the world. Both involve determination of theory and a value added inquiry process. It is also argued that when a phenomenon becomes very complex and data is required on a very large scale then both methods can be combined to find the best results. (Sale, Lohfeld, & Brazil, 2002)

Integration of both research methods is being increasingly discussed with a formulized approach for creation integrated typology. It is argued that mixed method research has many advantages. It conveys the essence of the research and guides the others about intentions of researchers that what they are doing or have done. In other words mixed method research clarifies the nature and objectives of researchers. (Bryman, 2006)

3.3 Research Approach Used:

The present study employed positivistic paradigm and quantitative research method to determine the impact of internal bank-specific and external economic factors on profitability of banking sector of Pakistan. Data was collected in numeric form and statistical tests were applied to find the inferences. The aim was to find a causal relationship between internal and external variables with profitability that will lead to theory verification process.

3.4 The Data:

In order to determine the impact of internal bank-specific and external economic factors on profitability of banking sector of Pakistan, secondary data was collected through annual reports of five conventional and five Islamic banks of Pakistan. Their financial statement analysis used was obtained from official website of State Bank of Pakistan[1]. Seven years data from 2007 to 2013 was collected for this purpose. The data related to macroeconomic indicators or external economic factors which included GDP, inflation rate and real interest rate, was obtained through the official websites of World Development Indicators[2] (WDI) and Economic Survey of Pakistan (2007-2013). Data related to financial ratios was collected from financial statements of banks.

3.5 Variables:

The study was conducted to identify the influence of selected bank-specific variables and macroeconomic variables upon the measures of profitability. Bank-specific and macroeconomic factors were used as independent variables and measures of profitability were used as dependent variable in this study. The variables used along with their description have been provided below:

[1] www.sbp.org.pk
[2] www.wdi.org

Table: 1 Variables and their Descriptions

	Variables	**Description**
Bank-specific Factors	Bank Size	Refers to natural logarithm of Total Assets of Bank
	Capital Adequacy	Refers to Total Equity to Total Assets of Bank
	Deposits	Refers to Total Deposits to Total assets of Bank
External Economic Factors	GDP	Real Gross Domestic Product
	Inflation Rate	Annual percentage change in Consumer Price
	Real Interest Rate	Lending Rate adjusted to Inflation
Profitability	ROA	Return on Assets
	ROE	Return on Equity
	ROCE	Return on Capital Employed
	NIM	Net Interest Margin

3.6 Financial Ratios:

1) Bank Size

$$\text{bank size} = \log\left(total\ assets\right)$$

2) Capital Adequacy

$$capital = \frac{total\ equity}{total\ assets}$$

3) Deposits

$$deposits = \frac{total\ deposits}{total\ assets}$$

4) ROA

$$ROA = \frac{net\ profit\ after\ tax}{total\ assets} \times 100$$

5) ROE

$$ROE = \frac{net\ profit\ after\ tax}{total\ shareholders'equity} \times 100$$

6) ROCE

$$ROCE = \frac{profit\ before\ tax}{total\ assets - current\ liabilities} \times 100$$

7) NIM

$$NIM = \frac{total\ interest\ income - total\ interest\ expense}{total\ assets} \times 100$$

3.7 Targeted Population:

The target population for the present study comprises of five Islamic and five medium sized conventional banks having relevance with the size of Islamic banks. The reason for selecting only five banks is that there are only five full-fledged Islamic banks in Pakistan. The data was taken from annual reports of these banks. The selected banks are listed below:

Sr. No.	Islamic Banks	Conventional Banks
1.	Meezan Bank	Faysal Bank
2.	Dubai Islamic Bank	Al-Falah Bank
3.	Burj Bank	Habib Metro Bank
4.	Bank Islami	Bank Al-Habib
5.	Al-Baraka Bank	Soneri Bank

3.8 Data Validity and Reliability:

The concepts of validity and reliability are used to confirm that an instrument utilized for data collection has either collected the data accurately or not. Data validity provides support to those assumptions which are supposed for accurate measure of the concepts and are assumed to be clearly representing those concepts under study. (Sitzia, 1999) Reliability is related with error minimization in measuring the data set. The use of reliability measures increases data stability when administrated at different time periods with same individuals and same standards. It also ensures equivalence of group of items by using the same test, also termed as internal consistency of the data. (Kimberlin & Winterstein, 2008)

The use of secondary data sources is constructive in many ways. First of all, it is less time consuming as compared to primary data collection because it already exists. Secondly it is less costly because it is subject to less wastage of data. Furthermore, the sample size and representativeness also more favorable for research question while using secondary data. The selection, quality and data collection methods make validity of secondary data but if the sources of collection are unknown, it becomes impossible for sometimes to validate the data. (Sorensen, Sabroe, & Sen, 1996) In the present study, the data has been obtained from financial statements of banks in the form of secondary data. Its importance can be validated through many factors. It is easy to use the accounting models of measuring performance. It is the data examined and recommended through external auditors therefore considered as error free. Furthermore, accounting data is considered more important than market data by the regulators of banks. (Bashir A.-H. M., 1999)

The data sources used in this study are annual reports of banks and financial statement analysis data obtained from the official website of State Bank of Pakistan. SBP is the key regulatory body who governs the entire banking industry of the country. It is responsible for formulation, implementation and control of all the prudential rules and regulations of banking sector. Financial and economic data of banking sector provided by SBP is helpful for academic and business researchers, bank regulators and policy makers, investors and for every stakeholder of banking sector. Similarly, macroeconomic data obtained from the official website of World Bank

Group or WDI is reliable because of its source which is the largest international website having databases for financial and economic variables.

3.9 Data Analysis Technique:

The objective of the study was to determine the impact of internal bank specific and external economic variables on dependent variable profitability in a comparison between Islamic and conventional banking sector of Pakistan. Panel data method was used on the data obtained for the period of 2007-2013 so that the results could be make more accurate and reliable. Data analysis techniques used was Pooled Ordinary Least Square (POLS) Regression. Eviews 7.0 software has been used for applying relevant statistical tests on data. The advantage in applying pooled OLS regression has been evidenced from previous studies that its estimates of parameters of model are more reliable. When a stable relationship between variables across cross-section units is assumed than POLS method is valid. (Kanwal and Nadeem, 2013; Gul, Irshad and Zaman, 2011; Dawood, 2014; Javed, Anwar, Zaman and Gafoor, 2011; Nadeem and Saleem, 2012) Therefore assuming a stable relationship between assets and profitability of Pakistani Banks, POLS has been decided to employ. Firstly unit root tests were applied to check data stationary. Secondly Hausman Test was computed to ensure which model has to be applied to estimate the coefficients. Finally, fixed and random effect models were applied to calculate the POLS for each dependent variable separately. The POLS equation model employed for the study is provided as follows:

$$\boldsymbol{y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \epsilon}$$

Whereas,

y = profitability measure (ROA, ROE, ROCE, NIM)

$\mathbf{X_1}$ = represents size of bank (SIZE)

$\mathbf{X_2}$ = represents capital ratio (CAP)

$\mathbf{X_3}$ = represents deposit ratio (DEP)

$\mathbf{X_4}$ = represents GDP (GDP)

$\mathbf{X_5}$ = represents inflation rate (INF)

$\mathbf{X_6}$ = represents real interest rate (RINT)

$\boldsymbol{\epsilon}$ = represents error term

$$ROA = \beta_0 + \beta_t SIZE_t + \beta_t CAP_t + \beta_t DEP_t + \beta_t GDP_t + \beta_t INF_t + \beta_t RINT_t + \epsilon \ldots\ldots\text{..equation 1}$$

$$ROE = \beta_0 + \beta_t SIZE_t + \beta_t CAP_t + \beta_t DEP_t + \beta_t GDP_t + \beta_t INF_t + \beta_t RINT_t + \epsilon \ldots\ldots\text{..equation 2}$$

$$ROCE = \beta_0 + \beta_t SIZE_t + \beta_t CAP_t + \beta_t DEP_t + \beta_t GDP_t + \beta_t INF_t + \beta_t RINT_t + \epsilon \ldots\ldots\text{..equation 3}$$

$$NIM = \beta_0 + \beta_t SIZE_t + \beta_t CAP_t + \beta_t DEP_t + \beta_t GDP_t + \beta_t INF_t + \beta_t RINT_t + \epsilon \ldots\ldots\text{..equation 4}$$

CHAPTER FOUR

4. DATA ANALYSIS

4.1 Unit Root Test

Time series data has to face a persistence innovative environment therefore, to control these effects and in order to make data stationary, unit root test are applied. Tests applied on stationary data are more robust as if statistical tests are applied to non-stationary data, it can mislead the results and estimates of parameters for least square regression analysis and it can affect the relationship between variables. Forecasting can also be done through calculating data stationary. It also helps in formulating the processes to be applied on the model for predicting the accurate results. (Mahadeva & Robinson, 2004) Following tables provide estimations of unit root tests on pooled data for both Islamic and conventional banks samples:

Table 2: Pool Unit Root Test Summary for Islamic Banks: Sample 2007-13

	Levin, Lin & Chu t		**Im, Pesaran, and Shin W-Stat**		**ADF Fisher Chi-square**	
	Statistics	Prob.	Statistics	Prob.	Statistics	Prob.
Size	-13.0010	0.0000	-2.35480	0.0093	20.3689	0.0260
Capital	-11.2036	0.0000	-3.18149	0.0007	28.4975	0.0015
Deposit	-71.8222	0.0000	-38.6188	0.0000	41.8148	0.0000
GDP	-3.89129	0.0000	-1.60973	0.0537	20.1352	0.0280
Inflation Rate	-117.065	0.0000	-50.3560	0.0000	92.1034	0.0000
Real Interest Rate	-4.66337	0.0000	-1.57657	0.0574	19.8859	0.0304
ROA	-7.80079	0.0000	-2.24378	0.0124	23.4745	0.0091
ROE	-6.06832	0.0000	-1.38302	0.0433	18.4429	0.0479
ROCE	-7.81233	0.0000	-1.79564	0.0363	19.8850	0.0304
NIM	-8.06472	0.0000	-2.50042	0.0062	26.3421	0.0033

Table 3: Pool Unit Root Test Summary for Conventional Banks: Sample 2007-13

	Levin, Lin & Chu t		Im, Pesaran, and Shin W-Stat		ADF Fisher Chi-square	
	Statistics	Prob.	Statistics	Prob.	Statistics	Prob.
Size	-31.2435	0.0000	-8.31592	0.0000	35.5400	0.0001
Capital	-7.35423	0.0000	-3.27563	0.0005	29.9338	0.0009
Deposit	-5.40991	0.0000	-1.97707	0.0240	22.4145	0.0131
GDP	-3.89129	0.0000	-1.60973	0.0537	20.1352	0.0280
Inflation Rate	-117.065	0.0000	-50.3560	0.0000	92.1034	0.0000
Real Interest Rate	-4.66337	0.0000	-1.57657	0.0574	19.8859	0.0304
ROA	-102.864	0.0000	-22.5220	0.0000	42.3421	0.0000
ROE	-13.7053	0.0000	-3.21520	0.0007	25.8723	0.0039
ROCE	-37.8423	0.0000	-11.5196	0.0000	52.2082	0.0000
NIM	-9.51421	0.0000	-3.12826	0.0009	29.4212	0.0011

Levin, Lin and Chu (2002) suggested that rather performing individual unit root tests, there must be more influential unit root test for each cross section. They argued that individual unit root tests are less powerful for alternative hypotheses and these tests deviates from equilibrium. Therefore, it suggests that for being stationary, each time series must have null hypothesis for each alternative hypothesis for each unit root. Similarly Im, Pesaran and Shin tests provided heterogeneity for unit root tests by taking averages of individual roots. Additionally, Fishar ADF test provides combination of p-values of unit root tests for each cross section in a panal data[3]. Table 2 and 3 shows that p values of all the above mentioned tests. All the p values are significant at 5% significance level representing that data is stationary.

4.2 Hausman Test

Hausman test is used to choose the best option between fixed and random effect model to be applied on pooled data. It provides the significance of parameters and estimates the difference between these two approaches. Its accuracy depends upon size of data sheet, the correlation level between covariate and unit effects, and the extent of internal unit variation in the independent variable with respect to dependent variable. (Clark & Linzer, 2012)

[3]http://www.lingnan.net/jpkc/gjjl/files/kejian/Advanced%20Econometric%20II%EF%BC%9APanel%20Data/CH5%20Unit%20Roots%20and%20Cointegration%20in%20panels.pdf

Table 4: Hausman Test for Islamic banks (bank-specific variables)

Correlated Random Effects - Hausman Test
Pool: ISLAMIC
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	11.259521	3	0.0104

** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
SIZE?	0.034939	0.036150	0.000070	0.8848
CAPITAL?	0.064566	0.064110	0.000538	0.9843
DEPOSIT?	-0.042129	-0.017278	0.001139	0.4616

Table 4 shows the Hausman Test statistics for bank specific variables of Islamic Banks Pooled data. Here Chi-Square Statistics p-value = 0.0104<0.05 suggesting that fixed effect model will be applied on this data set.

4.3 Fixed Effects Model for Islamic Banks

Table 5:

Dependent Variable: ROA?
Method: Pooled Least Squares
Date: 02/19/15 Time: 18:20
Sample: 2007 2013
Included observations: 7
Cross-sections included: 5
Total pool (balanced) observations: 35

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.247127	0.089842	-2.750692	0.0105
SIZE?	0.034939	0.011235	3.109700	0.0044
CAPITAL?	0.064566	0.061676	1.046844	0.3045
DEPOSIT?	-0.042129	0.060343	-0.698155	0.4911
Fixed Effects (Cross)				
_MZ--C	0.004551			
_BJ--C	-0.009252			

_DB--C	0.004425
_ABB--C	-0.005399
_BI--C	0.005675

Effects Specification
Cross-section fixed (dummy variables)

R-squared	0.610154	Mean dependent var	-0.001840
Adjusted R-squared	0.509083	S.D. dependent var	0.012512
S.E. of regression	0.008767	Akaike info criterion	-6.438079
Sum squared resid	0.002075	Schwarz criterion	-6.082571
Log likelihood	120.6664	Hannan-Quinn criter.	-6.315358
F-statistic	6.036872	Durbin-Watson stat	1.759740
Prob(F-statistic)	0.000266		

In order to investigate the relationship between independent bank specific variables and ROA as dependent variable from the pooled data of Islamic banks, fixed effect model is computed as shown in the table 5. The table shows that size has positive and significant impact on ROA. Other two variables i.e. capital and deposit have insignificant but have positive and negative impact on ROA respectively. The value of adjusted R-square is showing that contribution of size, capital and deposit towards ROA is 50.90% for selected Islamic banks. Also the p-value of F-statistics is 0.000266 exhibits goodness of fit of model.

Table 6:

Dependent Variable: ROE?
Method: Pooled Least Squares
Date: 02/19/15 Time: 18:21
Sample: 2007 2013
Included observations: 7
Cross-sections included: 5
Total pool (balanced) observations: 35

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.830286	0.592829	-3.087377	0.0046
SIZE?	0.265300	0.074138	3.578486	0.0013
CAPITAL?	0.504865	0.406977	1.240527	0.2255
DEPOSIT?	-0.345888	0.398180	-0.868673	0.3927
Fixed Effects (Cross)				
_MZ—C	0.100480			
_BJ—C	-0.085323			

_DB—C	0.014523
_ABB--C	-0.058748
_BI—C	0.029067

Effects Specification
Cross-section fixed (dummy variables)

R-squared	0.790659	Mean dependent var	0.014637
Adjusted R-squared	0.736385	S.D. dependent var	0.112668
S.E. of regression	0.057848	Akaike info criterion	-2.664372
Sum squared resid	0.090352	Schwarz criterion	-2.308864
Log likelihood	54.62650	Hannan-Quinn criter.	-2.541650
F-statistic	14.56801	Durbin-Watson stat	2.424907
Prob(F-statistic)	0.000000		

In order to investigate the relationship between independent bank specific variables and ROE as dependent variable from the pooled data of Islamic banks, fixed effect model is computed as shown in the table 6. The table shows that size has positive and significant impact on ROE. Other two variables i.e. capital and deposit have insignificant but have positive and negative impact on ROE respectively. The value of adjusted R-square is showing that contribution of size, capital and deposit towards ROE is 73.63% for selected Islamic banks. Also the p-value of F-statistics is 0.00000 exhibits goodness of fit of model.

Table 7:

Dependent Variable: ROCE?
Method: Pooled Least Squares
Date: 02/19/15 Time: 18:24
Sample: 2007 2013
Included observations: 7
Cross-sections included: 5
Total pool (balanced) observations: 35

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.352467	0.131658	-2.677138	0.0125
SIZE?	0.049786	0.016465	3.023803	0.0054
CAPITAL?	0.085187	0.090383	0.942510	0.3543
DEPOSIT?	-0.059098	0.088430	-0.668303	0.5096
Fixed Effects (Cross)				
_MZ—C	0.006363			
_BJ—C	-0.012892			

_DB—C	0.006803
_ABB--C	-0.007825
_BI—C	0.007552

Effects Specification
Cross-section fixed (dummy variables)

R-squared	0.606944	Mean dependent var	-0.003307
Adjusted R-squared	0.505040	S.D. dependent var	0.018261
S.E. of regression	0.012847	Akaike info criterion	-5.673763
Sum squared resid	0.004456	Schwarz criterion	-5.318255
Log likelihood	107.2909	Hannan-Quinn criter.	-5.551042
F-statistic	5.956070	Durbin-Watson stat	1.766621
Prob(F-statistic)	0.000293		

In order to investigate the relationship between independent bank specific variables and ROCE as dependent variable from the pooled data of Islamic banks, fixed effect model is computed as shown in the table 7. The table shows that size has positive and significant impact on ROCE. Other two variables i.e. capital and deposit have insignificant but have positive and negative impact on ROCE respectively. The value of adjusted R-square is showing that contribution of size, capital and deposit towards ROCE is 50.50% for selected Islamic banks. Also the p-value of F-statistics is 0.000293 exhibits goodness of fit of model.

Table 8:

Dependent Variable: NIM?
Method: Pooled Least Squares
Date: 02/19/15 Time: 18:24
Sample: 2007 2013
Included observations: 7
Cross-sections included: 5
Total pool (balanced) observations: 35

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.014729	0.079247	-0.185864	0.8539
SIZE?	-0.000302	0.009910	-0.030475	0.9759
CAPITAL?	0.079508	0.054403	1.461475	0.1554
DEPOSIT?	0.050048	0.053227	0.940285	0.3554
Fixed Effects (Cross)				
_MZ--C	0.008431			
_BJ--C	-0.007002			

_DB--C	0.008897
_ABB--C	-0.009886
_BI--C	-0.000441

Effects Specification
Cross-section fixed (dummy variables)

R-squared	0.536318	Mean dependent var	0.033980
Adjusted R-squared	0.416104	S.D. dependent var	0.010120
S.E. of regression	0.007733	Akaike info criterion	-6.689055
Sum squared resid	0.001615	Schwarz criterion	-6.333546
Log likelihood	125.0585	Hannan-Quinn criter.	-6.566333
F-statistic	4.461360	Durbin-Watson stat	1.871045
Prob(F-statistic)	0.002081		

In order to investigate the relationship between independent bank specific variables and NIM as dependent variable from the pooled data of Islamic banks, fixed effect model is computed as shown in the table 8. The table shows that size has negative and insignificant impact on NIM. Other two variables i.e. capital and deposit have positive and insignificant impact on NIM respectively. The value of adjusted R-square is showing that contribution of size, capital and deposit towards NIM is 41.61% for selected Islamic banks. Also the p-value of F-statistics is 0.002081 exhibits goodness of fit of model.

Table 9: Hausman Test for Islamic banks (macroeconomic variables)

Correlated Random Effects - Hausman Test
Pool: ISLAMIC
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	3	1.0000

* Cross-section test variance is invalid. Hausman statistic set to zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
GDP?	0.000524	0.000524	-0.000000	NA
INF?	-0.000207	-0.000207	-0.000000	NA
RINT?	0.000127	0.000127	-0.000000	NA

Table 9 shows the Hausman Test statistics for macroeconomic variables of Islamic Banks Pooled data. Here Chi-Square Statistics p-value = 1.0000>0.05 suggesting that random effect model will be applied on this data set.

4.4 Random Effects Model for Islamic Banks

Table 10:

Dependent Variable: ROA?
Method: Pooled EGLS (Cross-section random effects)
Date: 02/19/15 Time: 18:28
Sample: 2007 2013
Included observations: 7
Cross-sections included: 5
Total pool (balanced) observations: 35
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.001111	0.019995	-0.055580	0.9560
GDP?	0.000524	0.003081	0.170006	0.8661
INF?	-0.000207	0.000887	-0.233534	0.8169
RINT?	0.000127	0.000452	0.282252	0.7796
Random Effects (Cross)				
_MZ--C	0.012173			
_BJ--C	-0.007028			
_DB--C	0.000906			
_ABB--C	-0.006968			
_BI--C	0.000918			

Effects Specification	S.D.	Rho
Cross-section random	0.008606	0.4221
Idiosyncratic random	0.010070	0.5779

Weighted Statistics			
R-squared	0.032401	Mean dependent var	-0.000744
Adjusted R-squared	-0.061237	S.D. dependent var	0.009775
S.E. of regression	0.010070	Sum squared resid	0.003144
F-statistic	0.346026	Durbin-Watson stat	1.463524
Prob(F-statistic)	0.792232		

Unweighted Statistics

R-squared	0.019777	Mean dependent var	-0.001840
Sum squared resid	0.005218	Durbin-Watson stat	0.881786

In order to determine the relationship between independent macroeconomic variables and ROA as dependent variable, random effect model has been computed. The table 10 shows that inflation negatively and other two variables i.e. GDP and real interest rate positively effects ROA and all are insignificant as well. The value of adjusted R-square shows negative 6.1237% contribution of independent variables towards ROA. Furthermore, F-statistics is insignificant with value of 0.346026.

Table 11:

Dependent Variable: ROE?
Method: Pooled EGLS (Cross-section random effects)
Date: 02/19/15 Time: 18:29
Sample: 2007 2013
Included observations: 7
Cross-sections included: 5
Total pool (balanced) observations: 35
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.075010	0.142854	0.525078	0.6033
GDP?	-0.003331	0.021321	-0.156244	0.8769
INF?	-0.004040	0.006138	-0.658083	0.5153
RINT?	-0.000957	0.003126	-0.306073	0.7616
Random Effects (Cross)				
_MZ--C	0.161952			
_BJ--C	-0.068889			
_DB--C	-0.011166			
_ABB--C	-0.075496			
_BI--C	-0.006401			

Effects Specification	S.D.	Rho
Cross-section random	0.099287	0.6700
Idiosyncratic random	0.069685	0.3300

Weighted Statistics

R-squared	0.032416	Mean dependent var	0.003753
Adjusted R-squared	-0.061222	S.D. dependent var	0.067645
S.E. of regression	0.069685	Sum squared resid	0.150535
F-statistic	0.346182	Durbin-Watson stat	1.689347
Prob(F-statistic)	0.792121		

Unweighted Statistics			
R-squared	0.011685	Mean dependent var	0.014637
Sum squared resid	0.426558	Durbin-Watson stat	0.596181

In order to determine the relationship between independent macroeconomic variables and ROE as dependent variable, random effect model has been computed. The table 11 shows that inflation, GDP and real interest rate negatively affect ROE and all are insignificant as well. The value of adjusted R-square shows negative 6.1222% contribution of independent variables towards ROE. Furthermore, F-statistics is insignificant with value of 0.346182.

Table 12:

Dependent Variable: ROCE?
Method: Pooled EGLS (Cross-section random effects)
Date: 02/19/15 Time: 18:30
Sample: 2007 2013
Included observations: 7
Cross-sections included: 5
Total pool (balanced) observations: 35
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001549	0.029110	0.053202	0.9579
GDP?	0.000309	0.004484	0.068923	0.9455
INF?	-0.000482	0.001291	-0.373272	0.7115
RINT?	1.60E-05	0.000657	0.024326	0.9807
Random Effects (Cross)				
_MZ--C	0.017872			
_BJ--C	-0.010637			
_DB--C	0.001825			
_ABB--C	-0.010075			
_BI--C	0.001015			

Effects Specification		
	S.D.	Rho

Cross-section random	0.012663	0.4275
Idiosyncratic random	0.014654	0.5725

Weighted Statistics			
R-squared	0.027777	Mean dependent var	-0.001325
Adjusted R-squared	-0.066309	S.D. dependent var	0.014192
S.E. of regression	0.014654	Sum squared resid	0.006657
F-statistic	0.295228	Durbin-Watson stat	1.421912
Prob(F-statistic)	0.828532		

Unweighted Statistics			
R-squared	0.016776	Mean dependent var	-0.003307
Sum squared resid	0.011147	Durbin-Watson stat	0.849186

In order to determine the relationship between independent macroeconomic variables and ROCE as dependent variable, random effect model has been computed. The table 12 shows that inflation negatively and other two variables i.e. GDP and real interest rate positively effects ROCE and all are insignificant as well. The value of adjusted R-square shows negative 6.6307% contribution of independent variables towards ROCE. Furthermore, F-statistics is insignificant with value of 0.295228.

Table 13:

Dependent Variable: NIM?
Method: Pooled EGLS (Cross-section random effects)
Date: 02/19/15 Time: 18:30
Sample: 2007 2013
Included observations: 7
Cross-sections included: 5
Total pool (balanced) observations: 35
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.030284	0.013111	2.309825	0.0277
GDP?	-0.000568	0.001997	-0.284410	0.7780
INF?	0.000515	0.000575	0.894824	0.3778
RINT?	-0.000621	0.000293	-2.122125	0.0419
Random Effects (Cross)				
_MZ—C	0.004078			
_BJ—C	-0.002698			

_DB—C	0.008401
_ABB--C	-0.009276
_BI—C	-0.000505

Effects Specification	S.D.	Rho
Cross-section random	0.007115	0.5430
Idiosyncratic random	0.006528	0.4570

Weighted Statistics			
R-squared	0.360088	Mean dependent var	0.011132
Adjusted R-squared	0.298161	S.D. dependent var	0.007792
S.E. of regression	0.006528	Sum squared resid	0.001321
F-statistic	5.814719	Durbin-Watson stat	1.542954
Prob(F-statistic)	0.002836		

Unweighted Statistics			
R-squared	0.213481	Mean dependent var	0.033980
Sum squared resid	0.002739	Durbin-Watson stat	0.744244

In order to determine the relationship between independent macroeconomic variables and NIM as dependent variable, random effect model has been computed. The table 13 shows that GDP and real interest rate negatively affect NIM but the effect of real interest rate is significant. Inflation positively and insignificantly affects NIM. The value of adjusted R-square shows 29.8161% contribution of independent variables towards NIM. Furthermore, F-statistics is significant with value of 5.814719.

Table 14: Hausman Test for conventional banks (bank specific variables)

Correlated Random Effects - Hausman Test
Pool: CONVENTIONAL
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	4.597611	3	0.2037

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
SIZE?	-0.004949	-0.005540	0.000002	0.6877
CAPITAL?	0.370873	0.203063	0.010298	0.0982
DEPOSIT?	-0.001410	0.005878	0.000050	0.3050

Table 14 shows the Hausman Test statistics for bank-specific variables of Conventional Banks Pooled data. Here Chi-Square Statistics p-value = 0.2037>0.05 suggesting that random effect model will be applied on this data set.

4.5 Random Effects Model for Conventional Banks

Table 15:

Dependent Variable: ROA?
Method: Pooled EGLS (Cross-section random effects)
Date: 02/19/15 Time: 18:33
Sample: 2007 2013
Included observations: 7
Cross-sections included: 5
Total pool (balanced) observations: 35
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.037785	0.039334	0.960631	0.3442
SIZE?	-0.005540	0.004280	-1.294409	0.2051
CAPITAL?	0.203063	0.111655	1.818670	0.0786
DEPOSIT?	0.005878	0.014496	0.405489	0.6879
Random Effects (Cross)				
_FB—C	-0.001725			
_BA—C	0.002270			
_HM—C	0.000600			
_BAH—C	0.006361			
_SB—C	-0.007506			

Effects Specification		
	S.D.	Rho
Cross-section random	0.005203	0.7361
Idiosyncratic random	0.003115	0.2639

Weighted Statistics			
R-squared	0.223005	Mean dependent var	0.001996

Adjusted R-squared	0.147812	S.D. dependent var	0.003460
S.E. of regression	0.003194	Sum squared resid	0.000316
F-statistic	2.965770	Durbin-Watson stat	1.160062
Prob(F-statistic)	0.047187		

Unweighted Statistics			
R-squared	-0.515338	Mean dependent var	0.009043
Sum squared resid	0.001091	Durbin-Watson stat	0.336333

In order to examine the impact of bank specific variables on ROA as dependent variables, random effect model has been computed. The table 15 shows that size negatively affects ROA and the effect of other two variables i.e. capital and deposit is positive. All the independent variables' affect is insignificant in case of ROA. The value of adjusted R-square is showing 14.78% combined effect of all the independent variables upon ROA. Also the value of F-statistics is significant at 0.047187.

Table 16:

Dependent Variable: ROE?
Method: Pooled EGLS (Cross-section random effects)
Date: 02/19/15 Time: 18:33
Sample: 2007 2013
Included observations: 7
Cross-sections included: 5
Total pool (balanced) observations: 35
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.452452	0.690196	0.655541	0.5170
SIZE?	-0.052371	0.075148	-0.696906	0.4911
CAPITAL?	1.575172	2.006397	0.785075	0.4384
DEPOSIT?	0.038588	0.255501	0.151028	0.8809
Random Effects (Cross)				
_FB--C	-0.036524			
_BA--C	0.036083			
_HM--C	-0.015472			
_BAH--C	0.122778			
_SB--C	-0.106865			

Effects Specification	S.D.	Rho

Cross-section random		0.098091	0.7648
Idiosyncratic random		0.054391	0.2352
Weighted Statistics			
R-squared	0.062541	Mean dependent var	0.029820
Adjusted R-squared	-0.028181	S.D. dependent var	0.054070
S.E. of regression	0.054827	Sum squared resid	0.093184
F-statistic	0.689373	Durbin-Watson stat	1.299414
Prob(F-statistic)	0.565432		
Unweighted Statistics			
R-squared	-0.440084	Mean dependent var	0.145374
Sum squared resid	0.307803	Durbin-Watson stat	0.393385

In order to examine the impact of bank specific variables on ROE as dependent variables, random effect model has been computed. The table 16 shows that size negatively affects ROE and the effect of other two variables i.e. capital and deposit is positive. All the independent variables' affect is insignificant in case of ROE. The value of adjusted R-square is showing negative 2.81% combined effect of all the independent variables upon ROE. Also the value of F-statistics is insignificant at 0.689373.

Table 17:

Dependent Variable: ROCE?
Method: Pooled EGLS (Cross-section random effects)
Date: 02/19/15 Time: 18:34
Sample: 2007 2013
Included observations: 7
Cross-sections included: 5
Total pool (balanced) observations: 35
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.061839	0.055119	1.121924	0.2705
SIZE?	-0.008576	0.006007	-1.427810	0.1633
CAPITAL?	0.282225	0.169950	1.660638	0.1069
DEPOSIT?	0.006167	0.020639	0.298796	0.7671
Random Effects (Cross)				

_FB—C	-0.004143
_BA—C	0.003080
_HM—C	0.001506
_BAH—C	0.010477
_SB—C	-0.010919

Effects Specification	S.D.	Rho
Cross-section random	0.009585	0.8332
Idiosyncratic random	0.004289	0.1668

Weighted Statistics			
R-squared	0.232184	Mean dependent var	0.002169
Adjusted R-squared	0.157879	S.D. dependent var	0.004629
S.E. of regression	0.004248	Sum squared resid	0.000560
F-statistic	3.124754	Durbin-Watson stat	0.920452
Prob(F-statistic)	0.039880		

Unweighted Statistics			
R-squared	-0.486192	Mean dependent var	0.013006
Sum squared resid	0.002417	Durbin-Watson stat	0.213113

In order to examine the impact of bank specific variables on ROCE as dependent variables, random effect model has been computed. The table 17 shows that size negatively affects ROCE and the effect of other two variables i.e. capital and deposit is positive. All the independent variables' affect is insignificant in case of ROCE. The value of adjusted R-square is showing 15.78% combined effect of all the independent variables upon ROCE. Also the value of F-statistics is significant at 3.124754.

Table 18:

Dependent Variable: NIM?
Method: Pooled EGLS (Cross-section random effects)
Date: 02/19/15 Time: 18:34
Sample: 2007 2013
Included observations: 7
Cross-sections included: 5
Total pool (balanced) observations: 35
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.012060	0.039888	0.302335	0.7644
SIZE?	0.001039	0.004189	0.247928	0.8058
CAPITAL?	-0.011910	0.080479	-0.147989	0.8833
DEPOSIT?	0.013528	0.013856	0.976375	0.3364
Random Effects (Cross)				
_FB--C	-0.000421			
_BA--C	-0.000308			
_HM--C	-0.001390			
_BAH--C	0.002321			
_SB--C	-0.000202			

Effects Specification		
	S.D.	Rho
Cross-section random	0.002004	0.2486
Idiosyncratic random	0.003485	0.7514

Weighted Statistics			
R-squared	0.044092	Mean dependent var	0.016689
Adjusted R-squared	-0.048415	S.D. dependent var	0.003691
S.E. of regression	0.003779	Sum squared resid	0.000443
F-statistic	0.476633	Durbin-Watson stat	1.880683
Prob(F-statistic)	0.700838		

Unweighted Statistics			
R-squared	0.149192	Mean dependent var	0.030387
Sum squared resid	0.000519	Durbin-Watson stat	1.603716

In order to examine the impact of bank specific variables on NIM as dependent variables, random effect model has been computed. The table 18 shows that capital negatively affects NIM and the effect of other two variables i.e. size and deposit is positive. All the independent variables' affect is insignificant in case of NIM. The value of adjusted R-square is showing negative 4.84% combined effect of all the independent variables upon NIM. Also the value of F-statistics is insignificant at 0.476633.

Table 19: Hausman Test for conventional banks (macroeconomic variables)

Correlated Random Effects - Hausman Test
Pool: CONVENTIONAL

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	3	1.0000

* Cross-section test variance is invalid. Hausman statistic set to zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
GDP?	0.002955	0.002955	-0.000000	NA
INF?	0.000644	0.000644	-0.000000	NA
RINT?	0.000121	0.000121	0.000000	0.0000

Table 19 shows the Hausman Test statistics for macroeconomic variables of Conventional Banks Pooled data. Here Chi-Square Statistics p-value = 1.0000>0.05 suggesting that random effect model will be applied on this data set.

4.6 Random Effects Model for Conventional Banks

Table 20:

Dependent Variable: ROA?
Method: Pooled EGLS (Cross-section random effects)
Date: 02/19/15 Time: 18:44
Sample: 2007 2013
Included observations: 7
Cross-sections included: 5
Total pool (balanced) observations: 35
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.008039	0.006411	-1.254053	0.2192
GDP?	0.002955	0.000981	3.012132	0.0051
INF?	0.000644	0.000282	2.280995	0.0296
RINT?	0.000121	0.000144	0.837821	0.4085
Random Effects (Cross)				
_FB--C	-0.001725			
_BA--C	-0.002337			
_HM--C	0.003412			
_BAH--C	0.003125			
_SB--C	-0.002475			

Effects Specification			
		S.D.	Rho
Cross-section random		0.003206	0.4999
Idiosyncratic random		0.003207	0.5001
Weighted Statistics			
R-squared	0.262459	Mean dependent var	0.003198
Adjusted R-squared	0.191085	S.D. dependent var	0.003566
S.E. of regression	0.003207	Sum squared resid	0.000319
F-statistic	3.677196	Durbin-Watson stat	1.240001
Prob(F-statistic)	0.022456		
Unweighted Statistics			
R-squared	0.157557	Mean dependent var	0.009043
Sum squared resid	0.000607	Durbin-Watson stat	0.651691

In order to examine the impact of macroeconomic variables on ROA as dependent variables, random effect model has been computed. The table 20 shows that GDP and inflation have positive and significant impact on ROA, whereas real interest rate has positive and insignificant impact on ROA. The value of adjusted R-square showing 19.10% combined effect of all the independent variables on ROA. Also the F-statistics is significant at the value of 3.677196.

Table 21:

Dependent Variable: ROE?
Method: Pooled EGLS (Cross-section random effects)
Date: 02/19/15 Time: 18:45
Sample: 2007 2013
Included observations: 7
Cross-sections included: 5
Total pool (balanced) observations: 35
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.035149	0.105326	-0.333716	0.7408
GDP?	0.035027	0.015951	2.195939	0.0357
INF?	0.005836	0.004592	1.270847	0.2132
RINT?	0.001310	0.002338	0.560104	0.5794

Random Effects (Cross)	
_FB--C	-0.035372
_BA--C	-0.004158
_HM--C	0.008814
_BAH--C	0.093681
_SB--C	-0.062965

Effects Specification	S.D.	Rho
Cross-section random	0.062246	0.5877
Idiosyncratic random	0.052134	0.4123

Weighted Statistics			
R-squared	0.199477	Mean dependent var	0.043874
Adjusted R-squared	0.122007	S.D. dependent var	0.055638
S.E. of regression	0.052134	Sum squared resid	0.084256
F-statistic	2.574896	Durbin-Watson stat	1.335248
Prob(F-statistic)	0.071742		

Unweighted Statistics			
R-squared	0.098227	Mean dependent var	0.145374
Sum squared resid	0.192745	Durbin-Watson stat	0.583684

In order to examine the impact of macroeconomic variables on ROE as dependent variables, random effect model has been computed. The table 20 shows that GDP has positive and significant impact on ROE, whereas inflation and real interest rate both have positive and insignificant impact on ROE. The value of adjusted R-square showing 12.20% combined effect of all the independent variables on ROE. Also the F-statistics is insignificant at the value of 2.574896.

Table 22:

Dependent Variable: ROCE?
Method: Pooled EGLS (Cross-section random effects)
Date: 02/19/15 Time: 18:45
Sample: 2007 2013
Included observations: 7
Cross-sections included: 5
Total pool (balanced) observations: 35
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.014285	0.008143	-1.754384	0.0892
GDP?	0.004539	0.001218	3.726631	0.0008
INF?	0.001069	0.000351	3.049170	0.0047
RINT?	0.000259	0.000179	1.452072	0.1565
Random Effects (Cross)				
_FB--C	-0.004094			
_BA--C	-0.003961			
_HM--C	0.005824			
_BAH--C	0.005886			
_SB--C	-0.003655			

Effects Specification	S.D.	Rho
Cross-section random	0.005541	0.6595
Idiosyncratic random	0.003981	0.3405

Weighted Statistics			
R-squared	0.359013	Mean dependent var	0.003409
Adjusted R-squared	0.296982	S.D. dependent var	0.004748
S.E. of regression	0.003981	Sum squared resid	0.000491
F-statistic	5.787640	Durbin-Watson stat	0.965864
Prob(F-statistic)	0.002907		

Unweighted Statistics			
R-squared	0.169222	Mean dependent var	0.013006
Sum squared resid	0.001351	Durbin-Watson stat	0.351259

In order to examine the impact of macroeconomic variables on ROCE as dependent variables, random effect model has been computed. The table 22 shows that GDP and inflation have positive and significant impact on ROCE, whereas real interest rate has positive and insignificant impact on ROCE. The value of adjusted R-square showing 29.69% combined effect of all the independent variables on ROCE. Also the F-statistics is significant at the value of 5.787640.

Table 23:

Dependent Variable: NIM?
Method: Pooled EGLS (Cross-section random effects)
Date: 02/19/15 Time: 18:45
Sample: 2007 2013

Included observations: 7
Cross-sections included: 5
Total pool (balanced) observations: 35
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.028996	0.006931	4.183616	0.0002
GDP?	-0.000363	0.001075	-0.337670	0.7379
INF?	0.000213	0.000310	0.688223	0.4964
RINT?	-5.16E-05	0.000158	-0.327122	0.7458
Random Effects (Cross)				
_FB--C	-0.000823			
_BA--C	0.000903			
_HM--C	-0.002570			
_BAH--C	0.003039			
_SB--C	-0.000550			

Effects Specification	S.D.	Rho
Cross-section random	0.002400	0.3180
Idiosyncratic random	0.003514	0.6820

Weighted Statistics			
R-squared	0.147534	Mean dependent var	0.014716
Adjusted R-squared	0.065037	S.D. dependent var	0.003634
S.E. of regression	0.003514	Sum squared resid	0.000383
F-statistic	1.788358	Durbin-Watson stat	1.431786
Prob(F-statistic)	0.169906		

Unweighted Statistics			
R-squared	0.108557	Mean dependent var	0.030387
Sum squared resid	0.000544	Durbin-Watson stat	1.007466

In order to examine the impact of macroeconomic variables on NIM as dependent variables, random effect model has been computed. The table 23 shows that inflation has positive and insignificant impact on NIM, whereas GDP and real interest rate both have negative and insignificant impact on NIM. The value of adjusted R-square showing 6.50% combined effect of all the independent variables on NIM. Also the F-statistics is insignificant at the value of 1.788358.

CHAPTER FIVE

5. DISCUSSION AND CONCLUSION

The present study was aimed at determining the impact of internal bank specific and external macroeconomic factors on profitability of banking sector of Pakistan, with the help of comparative study between Islamic and Conventional Banking of Pakistan. The data was collected through financial statements of respective banks and analysis was made by using Eviews 7.0. The findings regarding Islamic banks indicate that size has positive and significant impact on ROA, ROE and ROCE but negative impact on NIM while capital and deposit are remained insignificant for all profitability measures. Capital has positive impact on all profitability measures while deposit has negative impact on ROA, ROE and ROCE, but positive impact on NIM. Therefore, these findings confirm the work of Naceur S. B., 2003; Al-Qudah & Jaradat, 2013; Haron & Azmi, 2004.

In case of macroeconomic factors, the present study shows an ambiguos behavior. All the selected variables have insignificant on ROA, ROE, ROCE and NIM. Only real interest rate has significant relationship with NIM. Inflation remained negative for ROA, ROE and ROCE showing negative relationship. GDP is positive for ROA and ROCE, negative for ROE and NIM. It indicates that macroeconomic conditions are not much favorable for Islamic banks. (Hassan & Bashir, 2000; Al-Tamimi, 2010; Bashir A.-H. M., 1999. The findings suggested that managers should formulate appropriate strategies for controlling the affect of inflation rate on profitability of Islamic banks. Also NIM should remain in accordance with real interest rate as the study shows a positive significant relationship between NIM and RINT. Furthermore, size or total number of assets is found to be significantly associated with profitability. Capital is also showing positive relationship with profitability which means that Islamic banks have to maintain high capital levels for continuous increase in profitability. Finally the negative impact of deposit on profitability measures recommends that Islamic banks should focus on making policies for maintaining adequate deposit level that must support towards the profitability of system.

In case of conventional banking, the results show entirely different perspective. It can be seen from analysis that size has negative impact on ROA, ROE and ROCE in case of conventional banks. Capital and deposit remained positive for ROA, ROE and ROCE. For NIM, size and deposit has positive but capital shows negative impact. In case of macroeconomic indicators, conventional banks show positive and significant relationship with GDP and inflation. Both these variables are significant for ROA, ROE and ROCE. In contrast, GDP is negatively associated with NIM. Also real interest rate is negatively associated with NIM in contrast with Islamic banks. Inflation has positive impact on all profitability measures in case of conventional banks. (Sufian & Chong, 2008; Said & Tumin, 2011; Ponce, 2011; Bilal, Saeed, Gull, & Akram, 2013; Francis, 2013; Obamuyi, 2013; Alper & Anbar, 2011; Ramadan, Kilani, & Kaddumi, 2011)

The findings suggest that high capital levels also support profitability in conventional banks. Both size and deposits show different behavior for Islamic and conventional banking. It also shows that GDP is supporting conventional banks' profitability. The positive impact of inflation on profitability shows that managers of conventional banks should follow the same pattern so that fluctuations in inflation rate could be made in line with profitability measures. The study also shows the negative relationship between real interest rate and NIM which means contrasting polices of conventional banks with respect to economic interest rate. Overall study concludes that internal bank specific factors are quite favorable for both conventional and Islamic banks but macroeconomic variables are more favorable for conventional banks suggesting that these banks should consider the changing macroeconomic conditions in Pakistan to attain maximum profitability level. Furthermore, the profitability of Islamic banks has shown compliance with bank-specific factors leading to this future implication that Islamic banks' profitability would increase by increasing assets and strengthening their capital base.

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