INCOME DIVERSIFICATION AND THE PROFITABILITY OF BANKS: A COMAPARATIVE ANALYSIS OF ISLAMIC VS CONVENTIONAL BANKS

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BY

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In the name of Allah,
the Most Beneficent,
the Most Merciful

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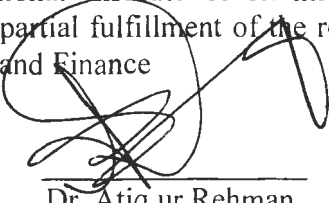
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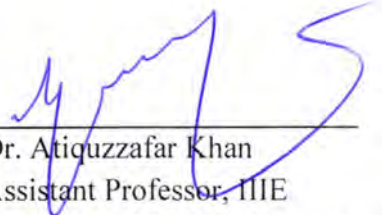
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Dedicated

To

My Parents &

My Grandmother

Declaration

I hereby solemnly declare that all the literature presented in the following dissertation is entirely based on research work carried out in defense of my thesis topic. This publication is pioneer in its context and has neither similarity to any previously submitted thesis nor any copied material in this contexts from any source except where due reference is clearly mentioned. All of the published data is result of my own efforts, research and analysis with support of those mentioned in acknowledgment, in specific my supervisor. If at some later stage plagiarism is detected in the submitted research on literature, I will be fully responsible for all the consequences as per the prevailing rules and law of approval committee.

Irum Bhatti

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TABLE OF CONTENTS

List of Tables

Abstract

This study analyzes the impact of income diversification on the profitability of banks and makes the comparison between Islamic and Conventional banks in case of Pakistani banking sector. The sample consists of five full fledged Islamic banks and five high net worth conventional banks. Unbalanced panel data set is used for the period of 2003-2014. The key focus of this study was to observe the effects of non-financing income in order to enhnace bank's profitability, further to examine how this effect varies between islamic and conventional banks. Our findings suggest that although non-financing income improves the profitability of banks but greater income diversification negatively impacts the profitability and also on risk adjusted performance of banks. The study explore that Islamic banks are more focused towards its core banking activities (deposit making) thus less diversified on non-financing activities in contrast to conventional banks. Our findings recommend that while diversifying income sources banks must recognize cost benefit analysis to reduce their cost while generating more revenues.

Key words: Islamic banks, Conventional banks, non-financing income, profitability

Chapter 1

INTRODUCTION

Over the years, banking industry in all over the world has experienced major changes in their banking setup due to technological innovations, deregulation and increased competition among different banking strategies. This has led banks to expand their business operations from traditional source of income i.e, (deposit and loan making) to non-traditional sources (service charges, fee income, trading revenue, other types of non-financing income) in order to diversify into new stream lines of business to enhance their profitability. Holzhauser et al., (2010) argues that income diversification increase bank value and profitability by shifting into fee base activities and technological progress. So far, The Pakistani banking industry is also practicing these type of strategies to enhance their profitability.

Islamic banking is a growing industry in Pakistan and has a shorter history than conventional banks operating in Pakistan, as they are new in this banking structure, thus they have to compete with giants present in the banking industry. Therefore, islamic banks need to adopt different strategies such as to diversify their income resources in order to reduce their operating risk level and to enhance their profitability. Shifting revenue strategies towards non-financing income activities, would reduce income volatility and positively impacts bank's risk-adjusted performance provided the optimal income diversification. Mainly islamic banks are more focused on deposit/loan financing and less diversified in terms of non-financing income activities as they are more exposed

1

to real estate financing compare to their conventional counterparts. The reason that islamic banks are reluctant to diversify their income resources could be that they might have moral hazards which may increase concentration in their loan portfolio. This exposure is likely to emerge from "too big to fail" dogma where larger banks are presumed to be safer than smaller banks and therefore, they might continue to grow without diversifying their risks by investing in few profitable sectors. Another reason is that they suppose by diversifying their income resources operating and information costs would be higher and profitability would decrease.

Diversification is usually believed to have a positive impact by reducing the risk. For example, Chiorazzo (2008); Elsas (2010); Sanya and Wolfe (2011) found the positive relationship between risk- returns and non-financing income activities which in turn provided banks with income stability. However, several studies revealed that income diversification can adversely affect the impact the financial performance of banks DeYoung and Ronald (2004); Gischer and Jüttner (2003) found a negative relationship between non-financing income and the profitability of the U.S banks. They concluded that income diversity would bring negative effect on the financial performance of banks, due to the volatility in earnings endangered by diversification. DeYoung and Rice (2004) find that less reliance of banks on fee based activities exhibits privileged management quality, and more attention towards consumer based activities. Further, charging high fee income/service charges worsen the bank's risk-return relation and increased variability in the profitability.

In a nutshell, there is controversy on how the diversification affects profitability. The empirical evidences exist on both positive and negative effects of income diversification

on the financial performance of banks. Therefore, the key focus of this study is to observe whether a greater dependence on non financing income impacts on earnings quality and if so, how this may vary between islamic and conventional banks. Bank Commission, service charges, fee income, income from trading activities and other income comprise non-financing income. For conventional banks, this term is identified as non-interest income, but in case of islamic banks the receipt and payment of interest is not allowed so this term is known as non-financing income.

We will explore the relationship between income diversification and the profitability of banks and shall analyze how income diversification has affected the islamic banking as well as conventional banking industry in case of Pakistan. In case if the impact of diversification is positive this will provide a guideline to islamic banking industry to proceed further in order to diversify their income resources.

1.1 Research Gap

As far as, we can ascertain that there has been no study to analyze the impact of income diversification on the financial performance of islamic vs conventional banks in case of Pakistan. Earlier work on these banking system focused on production technology (Yudistra, 2004), asset quality (Beck et al., 2010), stability (Wagner, 2010) and loan default rates. Moreover, this study is somewhat different with other studies in different ways. As, most of the studies on income diversification are related to developed economies Chiorazoo et al., (2008) ; Gurbuz et al., (2013) but fewer are with reference to under developed economies like Pakistan Haque and Hassan (2001) ; Abbas et.al, (2013). Theses gaps in the existing literature are the main motivation for conducting this study.

3

1.2 Objectives of the study

The key objective of this study is to compare the effect of income diversification on the profitability of dual banking system in Pakistan. The study also aims to examine whether the greater dependence on non-financing activities would enhance the profitability of banks or not. Further, to analyze the various income sources that affect their profitability.

1.3 Significance of the study

So far, islamic banks are reluctant to diversify their income resources Chang (2012) because of the risk of increased operating and information cost. However the increased competition between islamic and conventional banks necessitate for islamic banks to explore new options for themselves in order to enhance their profitability. Further, there is a need to explore the relationship between income diversification and the financial performance, so that informed decision could be made about diversification.

1.4 Organization of the study

The study is organized in five chapters as follows. Chapter one provides general introduction of the study followed by the objectives of the study and significance of the study. Chapter two reviews the theoretical background related to the study. Chapter three reviews the empirical literature and then attempt to link it to the current study. Chapter four discusses the methodological issues of the study, while chapter five discusses the analysis of the empirical results and the final chapter, chapter six, summarizes the main findings of the study and provides suggestions and policy recommendations.

4

Chapter 2

THEORATICAL BACKGROUND

This chapter starts with the concept of income diversity and than presents the theories that relate the income diversification with the financial performance of Banks.

2.1 The concept of income Diversification

Financial institutions in recent years have experienced major changes in technological advancement and competitiveness for the enhancement of profitability. This enforces banks to explore different available alternatives to diversify into new business lines. Albertazzi and Gambacorta (2006) mention that the decline in financing revenues, forced banks to generate income from fee income and "off-balance sheet" items. The concept of income diversification follows the concept of portfolio theory, which states that individuals can reduce their firm risk by diversifying their portfolios. Further, the increased competition among financial sector lead banks to diversify in income sources in order to increase economies of scale, to reduce volatile income and the ability to enhance their productivity.

The main purpose for diversification is to reduce the risk of loss faced by the financial institution or banks. In general, a bank consider cost and benefit analysis of the different available alternative while making investment decisions. The portfolio asset collection is one of the most important decision banks make, because these assets account for upto 90% earnings of the banks (Nafula, 2003).

5

There is a long history of debates about the cost and benefits of income diversification in banking literature. The proponents of income diversity argues that diversification stabilize operating income tends to increase stream of profits (Uzhegova, 2010). However, according to the opponents of income diversification income diversity increased an agency cost, organizational complexity which makes it more difficult for top management to observe/monitor the behavior of other divisions / branches Kotrozo and Choi (2006). The cost associated with these complexities would offset the benefits of diversification, thus diversification although increased profitability upto an optimal level beyond which it begins to decline and ultimately affects the financial performance of banks.

2.2 Theory on Relationship between diversification and profitability

2.2.1 Modern Portfolio theory and risk diversification

Markowitz (1952) portfolio theory presented an approach to measure the risk of securities that give the maximum amount of return with the lowest possible risk. The measure of risk is considered as volatility, which is the movement of securities value around the mean. However, the intuition is that the more diversified one's portfolio is, the lower the total variance and total risk of portfolio.

This theory implies that investor's wants well diversified portfolio of investments in multiple asset classes to reduce the risk of loss and better expected returns. In particular, modern portfolio theory forms the foundation of asset allocation strategies while making investment decision where, an investor can reduce their risk simply by diversifying into combination of investments which are positively correlated. Further, this theory also

6

applied on banking industry to check the impact of asset and plays an important role in bank's profitability (Nzongang and Atemnkeng, 2006). This portfolio diversification approach implies the desired portfolio composition for banks and feasible decisions taken by the bank management.

According to modern portfolio theory, banks can reduce their risk by diversifying their assets into geographic areas and also diversification into different sources of income. This approach has been applied by extensive literature on bank diversification to analyze its performance Lin et al., (2005); Goddard et al, (2008); Stiroh and Rumble (2006a) and Sanya and Wolfe (2011) .Where Stiroh and Ruble (2006a) examine the link between diversification of income sources of financial holding companies on risk adjusted performance. Using modern portfolio theory, he finds that diversification of income sources into two separate assets (financing income, non-financing income) would yield higher returns to the expected portfolio of the company.

Kwan (1998) used this theory to analyze the effect of income diversification on risk and return on US bank holding companies and found a gains from income diversification by shifting from financing to non-financing activities. For instance, bank that are facing decline in interest margins may decide to opt for other non-financing activities to reverse their declining performance and enhance their capability to manage it with low cost.

In practice, conventional banks do not put all their cash in one earning asset rather they diversify them. In doing this, conventional banks tend to achieve their objective of making profit from their investments. The portfolio theory of investment seems appropriate to counter the problem of investment risk that banks face.

Chapter 3

REVIEW OF LITERATURE

This chapter reviews the literature on bank income diversification by examining its effects on profitability of dual banking system. Diversification in income sources in any bank is preferred, because charging service fees, net trading profits on foreign exchange reserves and other income generating activities as theses sources brings profitability in the business.

3.1 Proponents for findings diversification benefits

Afzal and Mirza (2012) concluded that there is a positive link between income diversification and profitability, more diversified banks has strong capability to mobilize their funds and have high credit portfolio than their smaller counterparts. Stiroh and Rumble (2005) illustrate that diversification improves the financial performance of the US financial holding companies. They considered it possible that marginal increase in non interest based activities reduce risk and earnings volatility. However, they suggest that the more concentration on the components of non financing activities may reduced their revenues.

Berger et al., (2010) found the linkage of diversification on foreign ownership and illustrated that the banks with foreign ownership inclined to face less risk of loss of profits and increased in cost when they diversify as they posses monitoring and delivering of administrative and managerial expertise at the top management level with better or more network of diversification. Chiorazzo, et al., (2008) recommended that size

of the banks plays an important role between diversification of income and the financial performance of Italian banks. Income diversity brings an increasing returns for large banks compare to small banks because large banks have more economies of scale, expertise and new technologies as well such as online services or mobile banking which enables them to sell their products and services efficiently. Hayden et al., (2007) studied the diversification effects on the profitability of 983 German banks between the period of 1996-2002 on diversification segments like different industries, broader economic sectors and also on geographic regions. They possessed bank's return changes according to risk level as higher diversification leads to lower return and brings higher risk level almost for all of the banks. Ramasasti et al., (2004) used accounting data for Indian banks over the period 1997-2003. He found the positive association of income diversity to stabilize the operating income for Indian banks.

Lin et al., (2005) studied on Taiwan banking industry, by using the sample of 35 Taiwan banks for the period 1993 to 2001. He found that diversification is able to reduce operating cost while generating revenues. Bebczuk and Galindo (2008) used monthly accounting of 930 Argentinean non-banking firms for the period of 1999-2004 by examining the effect of income diversification on returns of the banks. They discovered that increased concentration on trading income as a component of income diversity could increase assets returns and lowers the default risk of loans.

Elsas et al., (2010) analyzed the effects of diversification on income sources on the profitability of banks by examining the data of 380 sample banks covering the period of 1996-2008. Their findings suggests that income diversity increase the profitability of

banks and reduces default risk even after high service charges and high fee on loans, there shareholder value seems unaffected and does not reduce.

3.2 Opponents for findings diversification benefits

In contrast to previous studies, there are number of studies who failed to find a benefit of income diversification on the financial performance of banks/financial institutes. A seminal study by DeYoung and Ronald (2001) concluded that banks risk does not decrease via diversification. By using data on 472 United States commercial banks for the period 1989-2001 to check the effect of non-interest income on the financial performance of sample banks, as measured by fee-based activities on banks volatile earnings.

Stiroh (2004) reviewed US banking industry from 1970-2001 examine the effect of non interest income on the diversification of banks. He also concludes that diversity in income sources increase bank's risk. Lepetit et al., (2008) collected data on 734 banks in 14 European countries to check the effect of income diversity on the bank profitability; he also confirmed that increased concentration in income diversification presents a higher risk for the banks than those banks who are mainly supply loans. Goddard et al., (2008) explores that diversification strategies are not appropriate for small US credit union as they are small so their operations are at for low level and thus lacking the abilities and expertise to diversify their income sources. They suggested to small credit union that they should follow their own maxim to provide simple savings and loan vehicles to their customers.

Esho et al., (2005) stated the negative relation of income diversity on the profitability of credit unions. According to them high diversification in credit unions brings lower risk

and return which in turn negatively affect the financial performance of theses unions. Credit unions earn high share of income in form of interest on residential loans and earn less amount of revenue in interest on personal loans thus having low sign of risk and return. Geyfman and Yeager (2009) examine the effects of universal banking on the risk of banks and financial holding companies for the period of 1990 to 2007. They found a negative association of revenue diversification strategies on the profitability of bank holding companies.

3.3 Mixed effect of Income diversification on the profitability

Some studies do not find an effect on diversification on the profitability such as, Mercieca et al., (2007) illustrated no direct association of revenue diversification on the profitability of banks by taking the sample of 755 small European banks from 1997-2003. They examine the positive association of bank size with revenue diversity while an inverse relation of non financing income on the financial performance of banks. According to them small banks have less economies of scale and they lack the expertise and experience of managing this diversification process because it entails high information and monitoring cost so they need more expertise in this process but small banks can improve their performance.

Landskorner et al., (2005) examine data on Israeli banks from 1992-2001 and found a positive relationship between return on capital and asset collection. According to them diversification in any business activities needs more capital and business portfolio. Well diversified optimal portfolio brings more gains of diversification for any business entity. Delpachitra and Lester (2013) diversification in fee based generating activities on loans

and advances reduces the profitability of banks and did not improve their performance. They did not find any benefit of revenue diversity on the profitability of 9 Australian banks and also recommended that an increasing exposure on non interest income could lead to increase in the risk of default on loans and advances which in turn negatively affect their financial performance. They suggested that if banks should be more focused on their interest bearing activities for revenue diversity which generate more revenue for them rather than increasing their exposure to non interest income.

Vallascas et al., (2012) observe the effect of global financial crisis of 2007 covering the small sample of Italian banking industry for the period of 2006-2008. Diversification improves the resilience of banks during periods of financial distress. According to their findings institutes/banks that diversified their income sources in low business stream faced declining financial performance during this financial crisis. While institutes that diversified income sources within broader business lines remained unaffected. Their conclusion states that bank should diversify their income sources and adopt new business stream lines but within a limited extent. Pennathur et al., (2012) studied the impact of diversification on profitability and also on risk by examining private and foreign Indian banks over the period of 2001-2009.Public sector banks charge low fee based activities while foreign banks charge high fee .Their findings indicates that those Banks which are more focusing on traditional banking activities ,are not interested in diversifying their new revenue sources.

Molyneux and Yip (2013) applied the effect of income diversification on the profitability of conventional and also on islamic banks covering the period from 1997-2009 by obtaining an accounting data on 68 conventional and 42 islamic banks of UAE. Islamic

banks are more inclined towards traditional banking system which was accepting deposits and making rather than charging fee on services and fee on loan financing as their conventional counterparts do. So, islamic banks are prone to volatile earnings given their low income diversity source. They concluded that conventional banks get more profitability by implementing income diversification strategies. Valverde and Fernandez (2007) mention that income diversification improves bank's revenue and also profitability to gain market power in the business. They also confirm that income diversity is positively associated with the financial performance foe banks as it entails their revenue earnings by charging fee on deposits and loans.

3.4 Determinants of income diversification

Prior empirical studies suggest the key measures of income diversification on the effect of profitability of a firm or banks. This includes non-financing income with its components i,e fee based income, trading income and other bank.

3.4.1 Effect of Non financing income as a component for diversification

Nguyen (2015) applied panel regression model and Hausman test to check the robustness on 32 Vietnam banks their findings presents significant relation of between banks profitability and non-financing-income thus suggested that banks with high income other than financing income entails lower risk. However, Li and Zhang (2010) studied the impact of non financing income on the diversification by using a sample of 15 Chinese commercial banks between 1986-2008.They that found a negative relation between diversifying in fee income activities to generate revenues. He suggests that this diversification strategy brings volatility in bank customer relationship as rather than

paying more fee to the banks, the customer may switch to another bank. Baele et al.,

(2007) researched on the implication of income diversification on the financial

performance of 17 European banks over the period of 1989 – 2004 by using a market

based measure of return.. They investigated that non financing income activities increase

systematic risk.

Demsetz and Strahan (1997),analyzed the effect of size and diversification on 150

publically traded bank holding companies covering the period of 1993-1986 by

examining weekly bank holding stock returns he explores that diversification in income

sources increase operations risk depends on their degree to absorb it. Elton (2003)

recommended that non financing income activities has negative relation in diversification

of income sources enhance our profitability by reducing banks risk. Similarly, Hsieh et

al., (2013) considered the effect of non financing income based activities in Asian banks

from 1995-2009 ;by examining the role of non interest generating activities on bank's

profitability and banking risk for 967 banks. They explored that non financing reduce

bank risk but do not increase profitability. This impact is different between high, low and

middle income countries. In high income countries fee generating activities raise risk and

decrease their profitability and bank's gets partially benefit in middle and low income

countries by improving financial performance through reduction in risk.

Smith et al,. (2003) studied the effect of income diversification on the financial

performance of fifteen countries which covers 2655 financial institutions by the time

period of 1994-1998. More reliance on diversity in income generating activities bring

volatility in earnings by increasing risk of operations and risk of defaults and also risk of

losing its clients. Kohler (2014) analyzed the negative effect of non fin acing income on

the profitability of retail vs investment oriented banks of Germany for the period of 2002-2012. Investment oriented banks become more risky if they charge high fee based activities while retail oriented banks includes savings and cooperatives are beneficial by charging high income generating activities. They suggest that of effect non financing income on bank's position and its stability depends on their overall business models and strategies to run these operations.

3.4.1.2 Effect of Fee based income as component for diversification

Busch and Kick (2009) examine income diversification in the German banking industry sample covering the period from 1995 and 2007.They analyzed inverse relationship of fee income with profitability. Similarly, Hsieh et al., (2013) examine a large sample of 29 Asia pacific countries which includes 2372 banks covering the period between 1995-2009.They also found an inverse relation of net commission revenue and trading revenues (components of non-financing income) on the profitability of banks. They analyzed that it is not necessary that if banks increase their commission and charging high service fee on deposits and loans will improve their profitability but it may offset trading and investment activities.

Campa and Kedia (2002) investigated the effect of diversification on the profitability of 8,815 firm's between the years of 1978-1996.They suggested that decision to diversify income resources depends on the external factors (market risk) that changes firm environment and affects firm values. They instigate a negative relationship exists income diversity and firm's value although benefits of diversification are high than its cost but they still found an insignificant relationship between them.

Aslam et al., (2008) studied the effect of diversification by taking to account of non interest income on the Pakistan's public, private and foreign banks branches for the period 2006-2012. They indicates an insignificant relationship exists on the decreasing quality of loans when banks charged more fee on these loans while non interest income showed a significant relationship with growth in the business segments thus increase profitability for them.

The extent literature examines the effect of income diversity on profitability mainly focuses on U.S and European countries by showing a mixed result of income diversification. Following the strategy of income diversification to increase revenue although increase earnings but it is associated with variations in income. However, variations can be reduce by charging low fee on loans compare to other banks.

3.5 Gap in Literature

Most of the literature examines diversification in loan portfolio, diversification in geographic areas, and diversification in different asset portfolios. Liang and Rhoades (1988) studied the effect of geographical diversification in the banking industry by employing data on 5509 U.S banking organization for the period of 1976-1985.His findings suggest that geographic diversification reduces the risk measure and variation in return on assets. For asset diversification Elsas (2010) suggest that asset diversification improves the bank's profitability by employing data on nine developed countries over the period 1996-2008, further Acharya et al., (2006) by using data on 105 Italian banks for the period 1993-1999 reveals that asset diversification increase bank risk by non-performing and doubtful loans.

16

However, less literature is available on bank income diversification. Among these studies we can find the mixed effect of income diversification on the profitability of banks. As, some studies in empirical literature shows positive contribution of income diversification on the profitability of banking system, while some other studies in the literature do not find any significant relationship or find the negative effects of income diversification on bank performance. Present study will contribute into existing literature by finding out the impact of income diversification on the profitability of dual banking system in case of Pakistan.

Chapter 4

DATA AND METHODOLOGY

This chapter is divided into two sections. The first section looks at the nature of data, while the second section throws a light on econometric methodology to be used in this chapter.

4.1 Data

This study is based on an unbalanced panel data set to check the effect of income diversity on the financial performance of islamic and conventional banks operated in Pakistan. The main source of data collection is a quarterly balance sheet and income statement of sample banks over the period of 2003-2014. Our sample consists of five full fledged islamic banks and five high net worth conventional banks. The data set is a detailed breakdown of operating income and its components and also components of non-financing income into fee based, trading and other non-financing income. Fee based income includes bank commissions from opening of letters of credit, handling of collection items and sale of demand drafts, service charges etc.. Trading income is the income generated from trading government securities, the sale of investment and from foreign exchange. We excluded banks that were merged during our sample time period, subsidiaries of foreign banks, and standalone branches of islamic banks operating by conventional banks.

4.2 Variables Description

4.2.1 Bank profitability measures

The profitability of a bank or business is an important variable to be measured, as it represents the overall growth of any business segment. It is considered as an important variable to run any business activity to enhance their efficiency and profitability. The main dependent variables used in our study are return on assets (ROA) and return on equity (ROE).

Return on Asset (ROA)

Return on assets refers to the profitability of the banks over its total assets, which is measured by deducting profit and loss after taxation over total assets.

$$ROA = Net\ income/Total\ assets$$

Higher ratio indicates that bank is more efficient to earn returns from its assets.

Return on Equity (ROE)

Return on equity (ROE) is the ratio of profit and loss after taxation by its shareholder's equity.

$$ROE = Net\ income/Shareholder's\ equity$$

The higher ratio indicates that bank efficiency in generating revenues by utilizing shareholder's investments.

19

4.2.2 Bank risk measures

In this research, we employed the risk measure of ROA and ROE, followed by Chiorazzo et al. (2008), risk adjusted return on asset (RAROA) and risk adjusted-return on equity (RAROE) to measure profitability.

Risk-adjusted return on asset (RAROA)

Gurbuz et al ., (2013) used the proxy of RAROA to measures the volatility of assets returns after adjusting the risk variability of each bank.

$$RAROA = ROA/\sigma ROA$$

Where variable ROA is the mean return on assets (net income over asset), σROA is its standard deviation.

Risk-adjusted return on equity (RAROE)

This is the measure of equity returns against the variations associated with returns.

$$RAROE = ROE/\sigma ROE$$

Where ROE is the mean return on equity, σROE is its standard deviation. The high ratio indicates high risk-adjusted profits.

4.2.3 Income Diversification Measure

The main focus of this research is to analyze the impact of income diversification on the profitability of banks. The income diversification measure as used by Stiroh and Rumble

(2006), Chiorazoo et al., (2008), Behr et al., (2007) and Elsas et al., (2008) into the detailed breakdown of net operating revenue into net and non financing income. Net financing income includes total financing revenues minus financing expenses, while non financing income includes service, fee related income, income earned through exports and also other non financing activities which are gains on investments held by banks. islamic banks earn their non financing revenue by investing in commodity based assets and equities.

Non-Financing Income (NFI)

NFI is a fee income that banks earn to increase profits from activities other than their core business activities (deposit and loan making). It is the sum of fee-based income, trading income, and other non-financing income measured by total operating income. According to DeYoung and Ronald (2001), Lepetit et al. (2008a), the increase involvement of banks in non-financing activities positively effects the growth of the banks. The high ratio of NFI indicates that banks are involved in other fee based activities to improve their profitability rather than focusing on deposit and loan making.

$$NFI = Non - financing\ income\ /Operating\ income$$

Operating income is the addition of net and not financing income of a bank.

Further, we disintegrate NFI into three components into FEE, TRD and Other income.

Fee based Income (FEE)

Fee based income is the sum of bank commissions (opening of letters of credit, sale of demand drafts, telegraphic transfers), Service charges (handling of loans and transactions

21

and returned checks) and Other commissions/fees (fee on underwriting, securities and equity investments).

$$FEE = Fee - based\ income/Operating\ income$$

Trading Income (TRD)

Trading income is the sum of trading gain (gain or loss of government securities which are traded in money market operations) from private securities (commercial papers trading gain or loss) foreign exchange profits (realized profit or actual loss due from foreign banks and short-term payables), profit/loss incurred on sale of redemption of investments. It is measured as trading income to total operating income. Tarazi and Meslier (2014) examine TRD as an important variable to determine NFI, within this trading government securities and forex profits are the largest sources to increase the profitability for all types of banks.

$$TRD = Trading\ income/Operating\ income$$

Other Income (OI)

Other income is measure as OI over operating income; this includes the income earned on rental and miscellaneous items through commission.

$$OI= Other\ income/Operating\ income$$

A second set of indicators used in this study is the diversification measure which is represented as focused variables.. I_0 is net interest income, I_1 is non financing income, I_2 is fee based income and I_3 is trading income, I_4 is other income.

22

$$FOCUSk_{it} = \sum_{j=1}^{n} (x_{it})^2$$

Where k=1,......4

FOCUSK It is an index to measure the diversification structure among banking industry. While k denotes the level of disaggregation of operating. Our first index, $FOCUS1_{it}$ is based on the disaggregation of the operating income into non financing (I_0) or net financing income (I_1). $FOCUS2_{it}$ is based on the disaggregation of non-interest income or non financing income , into fee-based income(I_2), trading income (I_3) and other income (I_4).

$$FOCUS1_{it} = \left(\frac{I_0}{I_0 + I_1}\right)^2 + \left(\frac{I_1}{I_0 + I_1}\right)^2$$

$$FOCUS2_{it} = \left(\frac{I_2}{I_0 + I_1}\right)^2 + \left(\frac{I_3}{I_0 + I_1}\right)^2 + \left(\frac{I_4}{I_0 + I_1}\right)^2$$

4.2.4 Control Variables

Asset (AST) is an important factor to determine the bank's financial performance and stability. We have taken the natural log of banks to total assets in our study. This variable following the study of Chiorazzo et al. (2008); Behr et al. (2007); Stiroh and Rumble (2006); and Stiroh (2004a, 2004b) holds the effects of bank size on returns and risk.

Equity (EQT) measures the extent of capitalization by shareholders via total assets. A lower value of equity shows banks tend to be riskier. This variable is also used in most of

23

the studies in income diversification literature Sanya and Wolfe (2011); Chiorazzo et al. (2008); Stiroh (2004b).

Loans (TLTOA) is the ratio of total loans to total assets. It indicates that how much percentage of banks assets are financed by loans. This variable measures the significance of loan assets in the entire asset portfolio and used as a proxy for the effects of lending business strategy on risk-adjusted bank performance Sanya and Wolfe (2011); Stiroh (2004b). The lower ratio shows the more utilization of banks own assets.

GDP is the log of the real gross domestic product. This variable considered as an important determinant for the profitability of bank to examine the effect of macroeconomic fluctuations on the overall performance of banking sector. The study of Kunt and Huizinga (1998) suggest a positive effect of GDP on the performance of banks. A high score indicates the better performance of banks.

4.3 Model Specification

To examine the impact of income diversity on the financial performance of banks. We will estimate three models followed by the research paper of (Meslier et al., 2014). In the first model we will measure impact of income diversification on the profitability measure, in the second model we will disintegrate non-financing income into three variables i.e, FEE, TRD and OI, while in the third model we will check the combined effect of both diversification measure on the dependent variables as follows,

24

Model 1

$$y_{it} = \alpha_i + \beta_1 FOCUS1_{it} + \beta_2 NFI_{it} + \delta Z_{it} + \varepsilon_{it} \qquad (4.1)$$

Where Y_{it} is the profitability/ risk measure of return on asset, return on equity, risk-adjusted return on asset, and risk-adjusted return on equity, theses all are our dependent variables for both models, β_1 is the impact of diversification , $FOCUS1_{it}$ is the measure of diversification based on the breakdown of total operating income in two components (interest and non-interest income) , β_2 is the direct effect of shift from interest to non-interest activities ,NFI_{it} is the share of non-financing income, δZ_{it} is the vector of control variables for both models (assets, loans, equity, gdp), ε_{it} is the error term for the bank.

Model 2

$$y_{it} = \alpha_i + \beta_1 FOCUS2_{it} + \beta_2 FEE_{it} + \beta_3 TRD_{it} + \beta_4 OI_{it} + \delta Z_{it} + \varepsilon_{it} \qquad (4.2)$$

Where, ROA_{it}, ROE_{it}, $RAROA_{it}$, $RAROE_{it}$ are the profitability and risk adjusted measures $FOCUS2_{it}$ is income diversification measure based on the disintegration of NFI into TRD_{it}, FEE_{it} and OI_{it} other income. δZ_{it} is control variables vector

Model 3

$$y_{it} = \alpha_i + \beta_1 FOCUS1_{it} + \beta_2 FOCUS2_{it} + \beta_3 NFI_{it} + \beta_4 FEE_{it} + \beta_5 TRD_{it} + \beta_6 OI_{i,t} + \delta Z_{it} + \varepsilon_{it} \qquad (4.3)$$

Model 3 is to check the combined effect of both models on dependent variables. Where $FOCUS1_{it}$, $FOCUS2_{it}$ proxies used for the income diversity measures. Other variables

are NFI_{it}, FEE_{it} share of fee based income, TRD_{it} share of trading income ,OI_{it}other non-interest income to operating income. While δZ_{it} is to check the presence of control variables in the model.

4.4 .Econometric Methodology

The methodology comprises of redundancy check followed by unit root testing and co-integration techniques.

4.4.1 Redundancy test

In order to simplify the model (1), (2) and (3) to get the parsimonious model, redundancy test is applied. Redundancy test is a kind of exclusion test for all lags of respective variable. For example, if we apply redundancy test to variable X, the test will check exclusion restriction on X and its lags. If X and its lags are jointly insignificant, the variable would be excluded for model. We use loose significance level of 10% for R-test.

4.4.2 Unit root test

We applied Augmented Dickey Fuller (ADF) unit root test to test the stationary of data. In this approach, we particularly used (ADF) test (1979) to check the stationarity of variables included in our model. Akaike Information Criterion was used to determine the appropriate lag length, and all the series were tested with option intercept but no trend.

4.4.3 Co integration Test

The result of unit root test is to determine whether or not to apply co integration test to the underlying model. By following the assumption that if two or more variables in a

26

model including the dependent variable appear to have unit root or the number of variables having unit root less than two or if dependent variable is not unit root. Than the variable which is having unit root could be used in regression after differencing. We plan to use Engel-Granger co integration test if need, otherwise we plan to use OLS with appropriate transformation (differencing) of data where needed.

4.4.4 Estimated Regression Results

We will run ordinary least square method to find out the estimated regression results for our models. In this approach the equations are estimated at first level difference.

Chapter 5

RESULTS AND DISCUSSION

This chapter presents the data analysis to compare the effect of income diversity on the profitability of islamic and conventional banks. The chapter separated into three parts. First part summarizes the redundancy results of the variables; the second section discusses the results of the variables by following the approach of Augmented Dickey Fuller (ADF) unit root test to check the stationary of the variables. In the third section, we will discuss estimated regression results by applying Ordinary least square (OLS) method.

5.1 Redundancy test Results

The redundancy results shows the redundancy of independent variables on the dependent variables. The significant value greater than 10% significance level shows that those variables are not effective measures of profitability, so we will exclude those variables from our model . Table 5.1 to 5.3 presents results of the redundancy test for models. The F- stat represents the Wald test statistics for exclusion of respective variables and the p-value is the value of hypothesis that variable is redundant.

For Model 1:

Table 5.1 presents the redundancy results obtained for model 1.The upper panel shows he redundancy test results for combined effects of all islamic banks, where the independent variable NFI is non-redundant for dependent variables ROA and RAROA while for other

two dependent variables it shows redundant results at p-value greater than 10% level. By satisfying the condition i,e. if two dependent variables having redundant results on independent variable , while other two are non-redundant so we will keep those variables in our model.

Table 5.1: Redundancy test results

	Variables	ROA		ROE		RAROA		RAROE	
		F-stat	P-value	F-stat	P-value	F-stat	P-value	F-stat	P-value
Islamic Banks	NFI	2.38	0.10*	4.16	0.04*	1.26	0.26	0.61	0.01*
	LNG	0.53	0.47	0.81	0.37	0.02	0.89	0.29	0.59
	TLTOA	5.76	0.02*	1.14	0.29	3.04	0.04*	0.23	0.63
	AST	2.81	0.11	1.31	0.25	0.88	0.35	1.13	0.29
	EQT	3.24	0.05*	3.72	0.04*	0.09	0.76	0.19	0.67
		F-stat	P-value	F-stat	P-value	F-stat	P-value	F-stat	P-value
Conventional Banks	NFI	6.38	0.01*	1.82	0.18	0.39	0.53	19.78	0.00*
	LNG	1.76	0.19	1.47	0.23	2.68	0.10	0.02	0.89
	TLTOA	0.36	0.04*	0.33	0.57	31.77	0.00*	6.43	0.01*
	AST	7.88	0.15	9.83	0.18	24.3	0.25	31.03	0.22
	EQT	1.16	0.01*	0.73	0.02*	0.62	0.08**	18.57	0.00*

*significance at 5% level ,** significance at 10% level

For our control variables, LNG and AST present non-significant results for all dependent variables at p-value greater than 10% significance level. This indicates that these two control variables are not useful for our model in case of islamic banks. So, we would ignore these variables from our model. The variable TLTOA is non-redundant for dependent variable ROA and RAROA, while for ROE and RAROE it is redundant, so we will keep this variable in our model. The other control variable EQT is non-redundant for ROA and ROE at significance value less than 5%, while this variable is redundant for

29

risk measure of RAROA and RAROE. However, this variable satisfies the condition of redundant variables, so we will keep this useful variable in our model.

The bottom panel presents the redundancy test results for all conventional banks, where the variable NFI is significant for ROA and RAROE, while for other two dependent variables are redundant and non-significant at p-value greater than 10%. However, this variable is satisfying the redundant variables condition so, we will not exclude this variable from our model. The control variable LNG is redundant for all dependent variables. This clearly indicates that this variable is not useful for our model, so we will ignore this variable. The variable TLTOA is non-redundant for most of the dependent variables except ROE, but we will keep this variable in our model. Similarly, as like LNG, the variable AST is also redundant for all dependent variables in our model. This indicates that this variable is not useful for the model, so we will exclude it. The variable EQT is non-redundant for all the dependent variables suggest that this is a useful variable for our model by showing significant results for all dependent variables.

For Model 2:

In table 5.2 the results of redundancy test of top panel shows the overall results for all islamic banks. The variable FEE in top panel is non-redundant for ROA, ROE and RAROE, while for RAROA it is redundant at p-value greater than 10% significance level. Similar results can be seen in row 2, where variable OI is non-redundant for all variables except RAROA, indicating the inclusion of this variable in our model. The variable TRD is redundant for all dependent variables even at loose significant level of 10%. This clearly indicates the exclusion of this variable from the model. Row 4 and 7 of

top panel, where variables TLTOA and EQT shows the non-redundant results for the model, so we will keep them in our model. However, for other two control variables in row 5, and 6 redundant results can be seen so we would exclude them from our model.

Table 5.2: Redundancy test results

	Variables	ROA		ROE		RAROA		RAROE	
		F-stat	P-value	F-stat	P-value	F-stat	P-value	F-stat	P-value
	FEE	0.97	0.00*	0.94	0.01*	0.05	0.82	0.82	0.05*
	OI	7.58	0.01*	3.65	0.05*	0.72	0.4	3.12	0.04*
Islamic Banks	TRD	0.78	0.38	1.56	0.21	0.13	0.72	0.64	0.42
	TLTOA	6.73	0.01*	1.77	0.03*	1.37	0.24	0.12	0.73
	LNG	0.75	0.39	1.12	0.29	0.04	0.85	0.20	0.65
	AST	1.07	0.3	1.73	0.39	2.85	0.09*	0.44	0.51
	EQT	0.73	0.00*	1.91	0.02*	0.40	0.03*	0.80	0.37
		F-stat	P-value	F-stat	P-value	F-stat	P-value	F-stat	P-value
	FEE	3.03	0.05*	1.81	0.18	0.23	0.64	0.06	0.08**
	OI	0.67	0.42	0.36	0.55	0.04*	0.77	2.02	0.16
Conventional Banks	TRD	0.18	0.67	0.32	0.57	1.13	0.29	2.84	0.09
	TLTOA	0.97	0.10*	0.16	0.69	27.56	0.00*	13.42	0.00*
	LNG	3.59	0.12	2.38	0.13	2.26	0.13	0.96	0.33
	AST	1.09	0.3	1.97	0.16	17.14	0.11	1.83	0.18
	EQT	1.59	0.08**	0.39	0.00*	0.71	0.4	16.56	0.00*

*significance at 5% level,**significance at 10% level

The bottom panel represents the results for conventional banks, where the variables in row 1, 2, 4 and 7 non-redundant results can be seen at significant value less than 10% level. These results shows the importance of all four variables in our model, so we will keep them as it is in our model. However, for other variables, the results in row 3, 5 and 6 are redundant and not useful for our model, so we will exclude them while estimating our model.

For Model 3:

Table 5.3 shows the results for model 3.This table represents the combined effect of the dependent variables on independent variables included in model 1 and model 2 on the dependent variables. The row 1 of top panel shows that NFI has an insignificant impact on the dependent variables with p-value larger than 10% level, which confirms the exclusion of this variable from our model.

Table 5.3: Redundancy test results

	Variables	ROA		ROE		RAROA		RAROE	
		F-stat	P-value	F-stat	P-value	F-stat	P-value	F-stat	P-value
Islamic Banks	NFI	17.91	0.30	20.11	0.49	0.74	0.39	0.01	0.92
	FEE	9.85	0.00*	12.12	0.00*	0.13	0.72	0.00	0.96
	OI	26.61	0.00*	21.82	0.00*	0.96	0.33	1.82	0.06**
	TRD	1.84	0.18	2.55	0.11	2.84	0.12	0.00	0.96
	TLTOA	1.61	0.21	0.91	0.01*	0.33	0.10*	0.15	0.70
	LNG	0.75	0.39	1.12	0.29	0.04	0.85	0.20	0.65
	AST	1.84	0.18	2.55	0.11	2.84	0.13	0.00	0.96
	EQT	1.19	0.28	2.93	0.09**	1.47	0.06**	0.76	0.39
		F-stat	P-value	F-stat	P-value	F-stat	P-value	F-stat	P-value
Conventional Banks	NFI	1.20	0.40	2.45	0.20	2.88	0.35	0.30	0.15
	FEE	1.10	0.30	1.10	0.09**	0.59	0.44	0.51	0.07**
	OI	1.77	0.10**	0.71	0.40	1.30	0.06*	4.83	0.03*
	TRD	2.04	0.16	1.31	0.25	0.15	0.70	0.03	0.86
	TLTOA	1.01	0.32	2.76	0.10**	6.73	0.01*	0.21	0.65
	LNG	0.87	0.35	2.62	0.43	0.44	0.51	0.29	0.59
	AST	9.54	0.11	5.30	0.16	20.77	0.18	21.83	0.21
	EQT	0.90	0.03*	0.89	0.35	0.45	0.50	16.56	0.00*

*significance at 5% level,**significance at 10% level

The independent variables in row 2 and row 3 have non-redundant results for this model, and should not be excluded from the model. While TRD in row 4 is having redundant results, so we will omit this variable from our model. The control variables in row 5 and

32

'8 presents the non-redundant results, while the variables in row 6 and 7 shows redundant results, so we will exclude them from our model.

For conventional banks, in bottom panel the redundancy results for NFI shows redundant results, thus having no effect on the model. The variables in row 2 and 3 of bottom panel are having non-redundant and significant results for this model so we are unable to ignore them. The variable TRD is redundant for conventional banks, thus we will not include it in our model. For control variables, the variable TLTOA in row 5 and EQT in row 8 shows non-redundant results, this rejects the exclusion of these variables from our model. While the variables LNG and AST in row 6 and 7 presents the redundant results, so we will ignore them form this model in order to get the simplified model.

5.2 Results of ADF Test

After excluding redundant variables from model 1 which were our control variables LNG and AST. The simplified model for equation is as follows, where we will further apply ADF unit root test to check the stationarity of all the variables in order to avoid pseudo results for our regression model. Results are reported from table 5.4 to 5.6.

Simplified model for equation 1

$$y_{it} = \alpha_i + \beta_1 FOCUS_{it} + \beta_2 NFI_{it} + \delta Z_{it} + \varepsilon_{it} \qquad (5.1)$$

The right panel in table 5.5 shows the unit root test results for islamic banks and the left panel shows the unit root results of conventional. We see that among the dependent variables, i.e. ROA, ROE, RAROA and RAROE, all of the variables are stationary at level as the p-value of corresponding t-adf are less than 5%. On the other hand the

independent variables NFI, TLTOA and EQT are non-stationary at their level although stationary at first difference. FOC1 is stationary at its level of significance. This means that it would not be reasonable to apply co integration because there is a mix of I(1) and I(0) variables present in the model. Therefore, for the consistent estimates, we will use first difference of the variables which are found to be unit root to estimate the model.

For conventional banks, the dependent variables ROA, ROE, RAROA are stationary at first difference at p value less than 5%, while RAROE is stationary at p-value less than 5% for all of the banks. The unit root results of TLTOA, NFI and EQT are non-stationary at level p-value greater than 5% level while stationary at first difference level of significance. The income diversification measure is stationary at 1st difference level . Thus, we conclude that ADF unit root test in first level difference shows all variables are stationary.

Table 5.4 :Results of ADF test for model 1

		Islamic Banks					Conventional Banks				
		BBL	MBL	BIL	BRJ	DIB	ABL	ASBL	HBL	MCB	UBL
ROA	t-stat	-2.945	-5.711	-3.025	-3.530	-5.110	-8.660	-1.713	-1.270	-5.892	-1.770
	p-value	0.051*	0.000*	0.043*	0.013*	0.000*	0.000*	0.416	0.045*	0.000*	0.388
ROE	t-stat	-2.921	-4.910	-3.404	-4.718	-4.645	-2.339	-5.226	-0.999	-1.352	-0.217
	p-value	0.054*	0.000*	0.018*	0.000*	0.001*	0.174	0.000*	0.743	0.590	0.927
RAROA	t-stat	-28.624	-4.754	-5.567	-3.263	-5.133	-6.240	-6.041	-5.980	-3.985	-2.127
	p-value	0.000*	0.000*	0.000*	0.025*	0.000*	0.000*	0.000*	0.000*	0.004*	0.235
RAROE	t-stat	-6.128	-6.857	-5.562	-4.439	-5.206	-2.644	-6.225	-5.334	-4.289	-3.096
	p-value	0.000*	0.000*	0.000*	0.001*	0.000*	0.000*	0.000*	0.001*	0.002*	0.036*
NFI	t-stat	-4.425	-2.068	-4.641	-1.620	-4.120	-1.699	-5.421	-6.007	-2.796	-5.219
	p-value	0.001*	0.257	0.000*	0.459	0.003*	0.418	0.000*	0.000*	0.051*	0.000*
TLTOA	t-stat	-3.861	-1.010	-3.521	-4.422	-3.684	-4.091	-5.580	-5.150	-4.927	-4.293
	p-value	0.006*	0.741	0.014*	0.001*	0.010*	0.004*	0.000*	0.000*	0.000*	0.000*
EQT	t-stat	11.702	-3.354	2.802	3.532	-2.625	-4.920	-5.746	-3.315	-5.410	1.832
	p-value	1.000	0.017*	1.000	1.000	0.100	0.000*	0.000*	0.020*	0.000*	0.999
FOC1	t-stat	-5.805	-5.611	-3.608	-5.590	-3.564	-1.235	-5.577	-2.233	-6.875	-5.113
	p-value	0.000*	0.000*	0.011*	0.000*	0.013*	0.636	0.000*	0.198	0.000*	0.000*

Simplified Model for Equation 2

After excluding the redundant variables TRD and control variables AST and LNG from the model. We will apply unit root test on our simplified model as follows ;

$$y_{it} = \alpha_i + \beta_1 FOCUS2_{it} + \beta_2 FEE_{it} + \beta_3 OI_{it} + \delta Z_{it} + \varepsilon_{it} \qquad (5.2)$$

Table 5.5 presents the unit results for islamic banks and conventional banks. The unit root results for independent variables presents the mixed results of (1) and I(0). This suggests that co integration is not a useful test to apply here. So far we will take first level difference of these variables to estimate the regression results. For conventional banks, the dependent variables shows mixed results of non-stationary at their level of significance, same results can be seen for independent variables, which are FEE, OI, TLTOA, EQT and FOC2 proxy for income diversification. This clearly indicates that ordinary least square are the useful test to run the regression rather than estimating co integration results.

Table 5.5 : Results of ADF test

		Islamic Banks					Conventional Banks				
		BBL	MBL	BIL	BRJ	DIB	ABL	ASBL	HBL	MCB	UBL
ROA	t-stat	-2.945	-5.711	-3.025	-3.530	-5.110	-8.660	-1.713	-1.270	-5.892	-1.770
	p-value	0.051*	0.000*	0.043*	0.013*	0.000*	0.000*	0.416	0.045*	0.000*	0.388
ROE	t-stat	-2.921	-4.910	-3.404	-4.718	-4.645	-2.339	-5.226	-0.999	-1.352	-0.217
	p-value	0.054*	0.000*	0.018*	0.000*	0.001*	0.174	0.000*	0.743	0.590	0.927
RAROA	t-stat	-28.624	-4.754	-5.567	-3.263	-5.133	-6.240	-6.041	-5.980	-3.985	-2.127
	p-value	0.000*	0.000*	0.000*	0.025*	0.000*	0.000*	0.000*	0.000*	0.004*	0.235
RAROE	t-stat	-6.128	-6.857	-5.562	-4.439	-5.206	-2.644	-6.225	-5.334	-4.289	-3.096
	p-value	0.000*	0.000*	0.000*	0.001*	0.000*	0.003*	0.000*	0.001*	0.002*	0.036*
FEE	t-stat	-5.908	-2.770	-4.339	-13.087	-4.843	-4.279	-3.457	-5.658	-5.444	-6.400
	p-value	0.000*	0.050*	0.001*	0.000*	0.000*	0.003*	0.014*	0.000*	0.000*	0.000*
OI	t-stat	-1.124	-1.604	-5.412	-5.489	-2.891	-0.842	-4.755	-5.311	-4.650	-5.147
	p-value	0.692	0.472	0.000*	0.000*	0.054*	0.784	0.000*	0.000*	0.000*	0.000*
TLTOA	t-stat	-3.861	-1.010	-3.521	-4.422	-3.684	-4.091	-5.580	-5.150	-4.927	-4.293
	p-value	0.006*	0.741	0.014*	0.001*	0.010*	0.004*	0.000*	0.000*	0.000*	0.000*
EQT	t-stat	11.702	-3.354	2.802	3.532	-2.625	-4.920	-5.746	-3.315	-5.410	1.832
	p-value	1.000	0.017*	1.000	1.000	0.100	0.000*	0.000*	0.020*	0.000*	0.999
FOC2	t-stat	-4.898	-3.502	4.090	-2.329	-4.168	-1.722	-2.348	-3.456	-3.936	-5.416
	p-value	0.000*	0.012*	0.003*	0.168	0.003*	0.407	0.162	0.014*	0.005*	0.000*

*indicates significance at 5% level

Simplified Model For Equation 3

Similarly for this equation, the variables NFI, TRD and control variables AST and LNG are to be excluded from the model as follows;

$$y_{it} = \alpha_{i,t} + \beta_1 FOCUS1_{i,t} + \beta_2 FOCUS2_{i,t} + \beta_3 FEE_{i,t} + \beta_4 TRD_{i,t} + \beta_5 OI_{i,t} + \delta Z_{i,t} + \varepsilon_{i,t} \qquad (5.3)$$

Table 5.6 shows the combined effect of model one and model two of income diversity on the profitabilityof banks. The left panel unit root test results , we see that among the dependent variables, i.e. ROA, ROE, RAROA and RAROE, all of the variables are stationary at level as the p-value of corresponding t-adf are less than 5%. On the other hand the independent variables which include TLTOA, EQT , FOC1, FOC2, are unit root for different banks at significant value larger than 5%, however other variables are stationary at their significant level. This means that it would not be reasonable to apply co integration because there is a mix of I (1) and I(0) variables present in the model. Therefore, for the consistent estimates, we will use first difference of the variables which are found to be unit root to estimate the model.

Table 5.6 : Results of ADF test

		Islamic Banks					Conventional Banks				
		BBL	MBL	BIL	BRJ	DIB	ABL	ASBL	HBL	MCB	UBL
ROA	t-stat	-2.945	-5.711	-3.025	-3.530	-5.110	-8.660	-1.713	-1.270	-5.892	-1.770
	p-value	0.051*	0.000*	0.043*	0.013*	0.000*	0.000*	0.416	0.045*	0.000*	0.388
ROE	t-stat	-2.921	-4.910	-3.404	-4.718	-4.645	-2.339	-5.226	-0.999	-1.352	-0.217
	p-value	0.054*	0.000*	0.018*	0.000*	0.001*	0.174	0.000*	0.743	0.590	0.927
RAROA	t-stat	-28.624	-4.754	-5.567	-3.263	-5.133	-6.240	-6.041	-5.980	-3.985	-2.127
	p-value	0.000*	0.000*	0.000*	0.025*	0.000*	0.000*	0.000*	0.000*	0.004*	0.235
RAROE	t-stat	-6.128	-6.857	-5.562	-4.439	-5.206	-2.644	-6.225	-5.334	-4.289	-3.096
	p-value	0.000*	0.000*	0.000*	0.001*	0.000*	0.000*	0.000*	0.001*	0.002*	0.036*
FEE	t-stat	-5.908	-2.770	-4.339	-13.087	-4.843	-4.279	-3.457	-5.658	-5.444	-6.400
	p-value	0.000*	0.050*	0.001*	0.000*	0.000*	0.003*	0.014*	0.000*	0.000*	0.000*
OI	t-stat	-1.124	-1.604	-5.412	-5.489	-2.891	-0.842	-4.755	-5.311	-4.650	-5.147
	p-value	0.692	0.472	0.000*	0.000*	0.054*	0.784	0.000*	0.000*	0.000*	0.000*
TLTOA	t-stat	-3.861	-1.010	-3.521	-4.422	-3.684	-4.091	-5.580	-5.150	-4.927	-4.293
	p-value	0.006*	0.741	0.014*	0.001*	0.010*	0.004*	0.000*	0.000*	0.000*	0.000*
EQT	t-stat	11.702	-3.354	2.802	3.532	-2.625	-4.920	-5.746	-3.315	-5.410	1.832
	p-value	1.000	0.017*	1.000	1.000	0.100	0.000*	0.000*	0.020*	0.000*	0.999
FOC1	t-stat	-3.861	-1.010	-3.521	-4.422	-3.684	-4.091	-5.580	-5.150	-4.927	-4.293
	p-value	0.006*	0.741	0.014*	0.001*	0.010*	0.004*	0.000*	0.000*	0.000*	0.000*
FOC2	t-stat	-4.898	-3.502	4.090	-2.328	-4.168	-1.722	-2.348	-3.456	-3.936	-5.416
	p-value	0.000*	0.012*	0.003*	0.168	0.003*	0.407	0.162	0.014*	0.005*	0.000*

*indicates significance at 5% level

39

The unit root results of conventional banks, shows that variable ROA is stationary only for ABL at p value less than 5%, while for all other banks we will take first difference of these banks. RAROA is stationary for all of the banks islamic as well as for conventional banks except UBL at p value (0.00) so here we will use first difference in our estimation process. Similar is the case with RAROE where only MCB with p value (0.10) are showing non stationary results compare to all other banks.

5.3 Estimated Regression Results

Following the results of unit root test, we will estimate our regression results through ordinary least square method. Which will also estimate at first difference level. Table 5.7A to 5.7D reports the regression results for model 1, table 5.8A to 5.8D explains the regression results for model 2, while table 5.9A to 5.9D presents the regression results for model 3 as follows;

For model 1:

The estimated regression results of all dependent variables for model 1 are as follows;

5.3.1.1 Estimated Regression results of return on asset

Table 5.7 (A) below represents the regression findings on bank performance measured by return on assets against all independent variables. The right panel shows the results for islamic banks. Where, the coefficient of variable NFI is non-significant and negative for BBL (-0.03) and BRJ (-0.01). However, the coefficient of NFI for BIL (0.00), DIB (0.00) and MBL (0.02) is positive and significant only for MBL at significant value (0.02), which implies that MBL is generating more revenues by charging high fee income on

40

(service charges, bank commission ,etc) than other islamic banks, which are more inclined towards deposit making activities.

Table 5.7(A): Estimated regression results of return on asset

		Islamic Banks					Conventional Banks				
		BBL	MBL	BIL	BRJ	DIB	ABL	ASBL	HBL	MCB	UBL
Coefficient	Coeff	0.02	0.00	0.00	-0.01	0.00	0.01	0.00	0.00	0.03	0.00
	P-value	0.13	0.99	0.60	0.11	0.43	0.00*	0.40	0.65	0.04*	0.84
NFI	Coeff	-0.03	0.02	0.00	-0.01	0.00	-0.06	0.02	0.02	0.11	0.00
	P-value	0.15	0.00*	0.92	0.21	0.90	0.16	0.54	0.05*	0.03*	1.00
TLTOA	Coeff	0.00	0.00	0.00	0.00	3.89	-8.90	0.00	0.00	0.00	0.00
	P-value	0.12	0.59	0.19	0.32	0.59	0.86	0.21	0.10	0.90	0.75
EQT	Coeff	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	P-value	0.57	0.00*	0.88	0.87	0.03*	0.26	0.16	0.00*	0.70	0.08
FOC1	Coeff	0.00	0.01	-0.01	0.00	0.00	0.04	0.01	0.02	0.01	0.00
	P-value	0.80	0.62	0.06	0.35	0.01	0.00*	0.04*	0.69	0.04*	0.04*

*indicates significance at 5% level,___Indicates 1st difference of variables

For conventional banks, the coefficient of NFI is positive and non-significant for ABL, ASBL and UBL at their level of difference. However, we observe significant coefficients or HBL (0.05) and MCB at value (0.03). This means that these banks are engaging to diversifying their income sources on different financing activities and in better position than islamic banks. The coefficient of control variable TLTOA has positive and insignificant impact in relation to return on asset. This insignificant results show that banks are more concerned to generate their revenues through their own assets rather to involve in lending activities. In contrast to islamic banks, the coefficient associated with TLTOA has overall positive and insignificant relation with ROA, which indicates that taking more loans from other financial institutes does not improve profitability, when banks are diversifying in their business activities.

41

The coefficients of EQT has positive and insignificant effect at 1st difference level of significance, suggesting that an increase in bank capitalization translates lower profits. However, the coefficients shows significant results for MBL (0.00) and DIB (0.03) at p-value less than 5%, which translates their low capitalization for profitability. As results of islamic banks similar results can be seen for conventional banks where the coefficients of Equity has overall positive and insignificant trend for ROA, which states that bank capitalization although improve the profitability of banks. Further, the coefficient is positive for HBL and significant at p-value (0.00) less than 5%, which translates their high capitalization for profitability. The coefficients of FOC1, which is the proxy used for income diversification (breakdown of non financing income+ net financing income over total operating income) is overall positive and insignificant for islamic banks, which indicates that these banks does not consider income diversification to enhance profitability.

For conventional banks, the coefficient of FOC1 is positive and non-significant or HBL and UBL at their level of difference at p-value greater than 10% level of significance. However, the coefficients for ABL (0.04), ASBL (0.01), MCB (0.01) and UBL (0.00) are significant at their levels in relation to profitability measure. This indicates that conventional banks consider income diversification as an important variable to improve the profitability of banks, by employing low operating cost to generate more revenue.

5.3.1.2 Estimated Regression results of return on equity

Table 5.7 (B) shows the results of return on equity. The top panel starts with the coefficient of non-financing income in relation to ROE , which shows overall negative

42

insignificant. However for ABL its coefficient is significant at p-value (0.01) means that ABL is enhancing towards loan based activities with having lower assets. Overall, the coefficient of EQT is positive but non-significant results in relation to return on equity, indicates that holding more equity is useless until and less to expand it on different business activities. Similarly, the coefficient associated with equity for conventional banks is positive and non-significant, except HBL which has significance at p-value (0.02). This indicates that they are having more capital to diversify than of those who has less available resources of income diversity.

The coefficient of FOC1 in relation to ROE has positive and insignificant results for BBL (0.01), MBL (0.09) and BRJ (0.39) against p-value more than 10%.Further,the coefficient is negative for BIL (-0.07) and DIB (-0.04). By this we mean that, islamic banks are reluctant to diversify their income sources into different streams of business lines. The coefficient of income diversity measure i.e. FOC1 for conventional banks is negative and insignificant for ASBL (-0.01), MCB (-0.08) and UBL (-0.05) against large level of significance, this indicates a weak correlation exists between ROE and FOC1, means that that more diversification in income sources with low managerial skills and no innovation in new technology negatively affects the profitability of banks. However, the coefficient of ABL is positive (0.74) at p-value (0.00), which shows the efficiency of ABL's management and staff to expand into different available alternative to enhance their productivity with minimum operating cost.

5.3.1.3 Regression findings of risk adjusted return on asset

Table 5.7(C)   Estimates the regression results of RAROA. The regression results of islamic banks in upper panel shows that the coefficients of NFI is overall positive and non-significant for all banks except the coefficient of BRJ which is significant at p-value (0.05). By this we mean that, increased operating cost on NFI lowers the chances to diversify in these activities, while risk-adjusting profitability. In comparison, the coefficient of NFI for conventional banks of NFI are negative for HBL (-0.02) and ASBL (-0.12), indicates that their negative relation against risk performance. While for other banks it is positive and significant for MCB at p-value (0.00) and ASBL (0.04), mentions that increased involvement in NFI enhance risk profile for these banks.

Table 5.7(C): Regression results of risk adjusted return on asset

		Islamic Banks					Conventional Banks				
		BBL	MBL	BIL	BRJ	DIB	ABL	ASBL	HBL	MCB	UBL
Coefficient	Coeff	-0.04	12.31	-3.75	0.00	0.00	0.04	0.08	0.05	-0.03	0.01
	P-value	0.19	0.52	0.00*	0.73	0.89	0.00*	0.00*	0.01*	0.38	0.57
NFI	Coeff	0.10	-3.87	1.04	0.02	0.00	0.03	-0.12	-0.02	0.35	0.00
	P-value	0.18	0.81	0.56	0.05*	0.76	0.82	0.04*	0.63	0.00*	0.96
TLTOA	Coeff	0.00	-0.07	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	P-value	0.77	0.79	0.04*	0.19	0.92	0.01*	0.43	0.08	0.71	0.00*
EQT	Coeff	0.00	0.00	0.02	0.00	0.00	0.00	-0.01	0.00	0.00	0.05
	P-value	0.58	0.91	0.52	0.41	0.67	0.75	0.35	0.37	0.33	0.02*
FOC1	Coeff	0.00	-14.71	3.40	0.01	0.00	0.05	0.06	0.09	0.31	0.00
	P-value	0.58	0.68	0.08	0.24	0.98	0.11	0.18	0.27	0.03*	0.05*

*indicates significance at 5% level, ___Indicates 1st difference of variables

Overall the coefficients of TLTOA are positive and insignificant for IBs at their levels. This states that lending would increase risk adjusted profitability thus in turn lowers the

profitability of banks. Thus banks should increase their own assets rather than taking loans to increase their profitability except BIL which is significant at p-value less than 5%. For conventional banks, the coefficient of variable TLTOA is overall positive and significant for ABL at p-value (0.01) and UBL at value (0.00) which is highly significant, means that these two banks are diversifying their sources into lending based activities to increase risk-adjusted profits.

The coefficient of EQT shows no significant relation with risk-adjusted profitability at 1st level of difference, suggesting that bank capitalization is not an important control variable while adjusting profitability against RAROA. For conventional banks, the coefficient of is positive but not beneficial to improve risk profile for the banks. Only UBL has significant result at 1st difference level against p-value (0.02), which reveals their involvement to generate revenues by increased diversification activities. Overall, the coefficient of FOC1 has positive and non-significant results for islamic banks, implying more operating cost and technological cost is required for income diversification to generate revenues which in turn negatively affects their performance as can be seen in case of MBL where coefficient is negative (-14.17) and also highly insignificant (0.68). So, while diversification banks has to follow cost-benefit analysis and their stream of profits to improve their performance. For conventional banks, the coefficient of FOC1 (proxy measure income diversification) overall has better results for MCB at significance value (0.03) and UBL (0.05) with positive coefficients for all the banks, indicating that diversification improve performance while adjusting risk profile by curtailing lower operating cost.

46

5.3.1.4 Regression findings of risk adjusted return on equity

Table 5.7(D) represents the results of RAROE. The coefficient of NFI in top panel shows the regression results for BBL which has negative coefficient (-0.26) against insignificant value (0.39), while for other islamic banks it is positive and insignificant. For conventional banks the coefficient of fee income is negative for HBL (-0.53), ASBL (-0.11) , UBL (-0.47) while the coefficient is positive for MCB(3.57) at significant value (0.00). In case of conventional banks, we observe significant relation between NFI and RAROE only for MCB, indicating their reliance on non financing income for risk-adjustment profitability.

Table 5.7(D): Regression results of risk adjusted return on equity

		Islamic Banks					Conventional Banks				
		BBL	MBL	BIL	BRJ	DIB	ABL	ASBL	HBL	MCB	UBL
Coefficient	Coeff	0.18	-2.54	4.83	-0.02	0.00	-20.2	0.11	1.10	-0.62	0.40
	P-value	0.21	0.14	0.96	0.67	0.95	0.19	0.55	0.01*	0.01*	0.28
NFI	Coeff	-0.26	3.05	14.94	0.06	-0.02	21.36	-0.11	-0.53	3.57	-0.47
	P-value	0.39	0.04*	0.35	0.44	0.80	0.34	0.52	0.62	0.00*	0.42
TLTOA	Coeff	0.00	-0.01	1.73	0.00	0.00	0.67	0.00	-0.01	0.00	0.01
	P-value	0.37	0.74	0.48	0.87	0.96	0.79	0.45	0.07	0.64	0.00*
EQT	Coeff	0.00	0.36	0.72	0.00	0.00	14.88	0.04	0.00	0.01	0.15
	P-value	0.20	0.00*	0.76	0.32	0.16	0.00*	0.33	0.97	0.18	0.01*
FOC1	Coeff	0.00	0.61	-15.6	0.03	0.01	37.6	0.08	2.15	0.21	1.53
	P-value	0.63	0.84	0.22	0.47	0.77	0.56	0.40	0.65	0.35	0.01*

*indicates significance at 5% level, __ Indicates 1st difference of variables

Overall the coefficient of control variable, TLTOA is insignificant and positive for both types of banks, however the coefficient of UBL (0.01) has significance at p value (0.00). The overall result suggest that banks may involve in lending based activities while

diversification when they are in shortage of assets. Further, if banks increase their involvement more in lending activities, this would adversely impact their profitability while adjusting risk measure. The coefficient of EQT to total assets is overall positive for both types of banks, as in case of islamic banks, MBL has significant position to handle variations in its results by adjusting profitability. For convetional banks, ABL (0.00) and UBL (0.01) has significant regression results to adjust their performance when risk is involved in it. For islamic banks, we observe that increased income diversity have no significant influence on risk-adjusted profitability. However, for conventional banks, income diversification has overall no significant effect on risk adjusted return, except UBL which is significant at p-value (0.01) suggesting that diversification increases the returns for banks when they are capable to handle risk associated with returns.

For Model 2 :

The estimated regression results of model 2 are as follows;

5.3.2.1 Estimated regression results of return on asset

Table 5.8 (A) in below table represents the results of return on assets, where he coefficient of fee based income in right panel is positive for BIL (0.03) at p-value (0.03) and also for BRJ where coefficient is (0.04) against p-value (0.00), suggesting that fee based activities generate revenues for the banks, but more dependence on these activities would reduce their profitability.

For conventional banks, the coefficient of fee income has overall positive and significant results for ASBL (0.03) at p-value (0.04), UBL (0.11) significant at (0.02), for ABL its coefficient is negative (-0.22) with p-value (0.02). This clarifies that these banks are

inclined towards charging more fee based income activities to improve their profitability. For other independent variable which is OI, its coefficient is negative and insignificant for most of the islamic banks, however the negative coefficient for MBL (-0.28) has significance at value (0.04). These indicate that OI has weak correlation with profitability, implying that it is remain constant rather than generating revenues. However, MBL has significant results (0.04) at p-value less than 5% level. The coefficient of OI has non-significant results for all conventional banks, state that this is not an important variable, while determining profitability.

Table 5.8(A): Estimated regression results of return on asset

		Islamic Banks					Conventional Banks				
		BBL	MBL	BIL	BRJ	DIB	ABL	ASBL	HBL	MCB	UBL
Coefficient	Coeff	-0.02	0.03	-0.02	0.00	0.00	0.04	-0.01	0.03	0.04	-0.05
	P-value	0.38	0.00*	0.00*	0.76	0.78	0.00*	0.29	0.38	0.65	0.43
FEE	Coeff	0.01	0.03	0.03	0.04	0.01	-0.22	0.03	0.03	0.21	0.11
	P-value	0.87	0.08	0.03*	0.00*	0.62	0.02*	0.04*	0.51	0.23	0.02*
OI	Coeff	-0.01	-0.28	0.03	-0.05	-0.04	-0.01	0.11	0.02	0.02	0.04
	p-value	0.81	0.04*	0.50	0.34	0.80	0.92	0.25	0.85	0.93	0.48
TLTOA	Coeff	0.00	0.00	0.00	9.53	0.00	0.00	0.00	0.00	0.00	0.00
	P-value	0.12	0.76	0.76	0.20	0.79	0.95	0.35	0.16	0.99	0.67
EQT	Coeff	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	P-value	0.47	0.00*	0.54	0.98	0.08	0.82	0.36	0.00*	0.87	0.05*
FOC2	Coeff	0.04	0.04	0.02	-0.01	0.01	-0.04	0.02	-0.04	-0.02	0.06
	P-value	0.12	0.00*	0.01*	0.40	0.67	0.26	0.18	0.43	0.77	0.48

*indicates significance at 5% level,___Indicates 1st difference of variables

The control variable, TLTOA is overall not considered as an appropriate variable for ROA by having no impact on it, this show that banks are involved in loan based activities to enhance their financial performance. Moreover, lending may reduce profits with risk

49

associated in it. For conventional banks, the coefficient of TLTOA has similar results of islamic banks which is positive and insignificant for all banks, indicate that by taking more loans and having low number of assets does not improve the financial performance of banks.

For control variables, the coefficient of EQT has overall positive and insignificant results, except MBL (0.00) which has consider equity as an important determinant to enhance the profitability. The coefficient of Equity for conventional banks also overall positive and non-significant results for the banks, implying that increase in equity always does not improve profitability, except HBL (0.00) and UBL at value (0.05). For islamic banks, the coefficients related with FOC2 is overall positive and significant for MBL at p-value (0.00) and BIL at value (0.00), however its coefficient is negative for BRJ (-0.01) indicates that income diversification improves the profitability at some level beyond his negative results would observed. An insignificant and negative results can be seen while observing the coefficients of FOC2, for conventional banks where, HBL has negative coefficient (-0.04) along with , ABL(-0.04) and MCB(-0.02) suggesting that islamic banks are in better position for income diversity in relation to return on asset.

5.3.2.2 Estimated regression results of return on equity

Table 5.8 (B) represents the results of ROE. The coefficient of variable FEE (service charges) shows negative results for BBL (-0.26), BRJ (-0.37) and DIB (-0.01) only positive for MBL and BIL with non significant results. For BBL its coefficient is negative (-0.26) and insignificant (0.58). This suggest that diversification in fee based

50

activities for islamic banks is not supportive as they are small in asset size so diversifying beyond the optimal level would adversely affect the earnings of the banks.

For conventional banks, the coefficient of FEE based income has overall no significant impact on performance of banks as its coefficients are negative for ABL (-2.10) and MCB (-1.31) at their 1st difference level, however, for other banks its coefficients are positive but non-significant, for conventional banks exploring alternative for investment in fee income does not improve their profitability.

Table 5.8(B): Estimated regression results of return on equity

		Islamic Banks					Conventional Banks				
		BBL	MBL	BIL	BRJ	DIB	ABL	ASBL	HBL	MCB	UBL
Coefficient	Coeff	-0.06	0.24	-0.13	0.07	0.00	0.43	-0.03	0.36	0.15	-0.62
	P-value	0.73	0.00*	0.03*	0.15	0.98	0.03*	0.77	0.38	0.82	0.45
FEE	Coeff	-0.26	0.22	0.18	-0.37	-0.01	-2.10	0.39	0.34	-1.31	1.32
	P-value	0.58	0.12	0.09	0.00*	0.94	0.21	0.62	0.59	0.35	0.27
OI	Coeff	-0.01	-3.66	0.10	-0.54	-0.41	1.79	-0.20	0.36	0.53	0.44
	P-value	0.95	0.01*	0.80	0.08	0.77	0.26	0.89	0.77	0.79	0.52
TLTOA	Coeff	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	P-value	0.09	0.72	0.77	0.73	0.72	0.02*	0.90	0.16	0.56	0.71
EQT	Coeff	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.06
	P-value	0.45	0.21	0.70	0.71	0.30	0.16	0.94	0.03*	0.95	0.05*
FOC2	Coeff	0.29	-0.26	0.14	-0.05	0.03	-0.83	-0.01	-0.47	0.05	0.72
	P-value	0.21	0.00*	0.03*	0.26	0.84	0.16	0.95	0.42	0.95	0.51

*indicates significance at 5% level,___Indicates 1st difference of variables

The coefficient of OI has negative results for BBL (-0.01), MBL (-3.66), BRJ (-0.54) and DIB (-0.41) thus only significant for MBL with negative coefficient at p-value (0.01), which is highly significant for this bank. The result of the other banks indicates that banks are generating income only to meet its operating activities rather than to diversify

51

their income resources. For conventional banks, the coefficient of OI is also non-significant at their level, meaning that it is not considered as an important variable while determining earnings of the banks. The coefficient of variable TLTOA is overall positive against an insignificant impact on return on equity for islamic banks, which means that banks are generating revenues by its own rather than diversifying in lending activities. For conventional banks, the coefficient of TLTOA is overall positive for all banks but non-significant except the coefficient of ABL which is positive (0.00) and significant at value (0.02), suggesting that ABL is considering to expand their financing activities into lending activities to enhance their financial performance.

The coefficients associated with EQT for islamic banks are overall positive, but having non significant results on ROE, means that banks are not expanding to enhance their profitability. For conventional banks, the coefficient of EQT is overall positive and significant only for HBL (0.03) and UBL (0.05) at their significance level, while for other banks its significance value is too high, which means that these banks are holding more equity capital as capital or reserve requirement rather than expanding it on different business activities. FOC2 is the proxy of income diversity measure, its coefficients presents overall mixed results for Islamic banks as negative for MBL (-0.26) with significant p-value (0.00) and he coefficient for BIL is positive (0.14) at p-value (0.03), while for BRJ it is negative and insignificant. These findings explores that Islamic banks are small in asset size, low profitable and less diversified. Further, if they involved themselves to increase income diversity which in turn would bring higher cost overshadowed by benefits of diversification. In contrast, the coefficient of FOC2, has overall non-significant impact in relation to return on equity, as the results indicates that

its coefficients are non-positive for HBL (-0.47),ABL (-0.83) and for ASBL (-0.01), while for other banks the results are also not beneficial with higher significance level. So, the overall results suggest that ROE for conventional banks are not beneficial and concentrated within a strict policy/regulatory requirements.

5.3.2.3 Estimated regression results of risk adjusted return on asset

Table 5.8 (C) shows the results of RAROA which is the measure of risk adjusted profits. The coefficient of FEE in the overall regression results for islamic banks in right panel shows the mixed results for all banks. The coefficient in the regression for MBL and BRJ negative, but significant for BRJ at p-value (0.00). For BIL it is also significant at p-value (0.00) which is highly significant for this bank. These results show the capability to handle risk associated with charging high fee on banking activity for the banks.

Table 5.8(C): Estimated regression results of risk adjusted return on asset

		Islamic Banks					Conventional Banks				
		BBL	MBL	BIL	BRJ	DIB	ABL	ASBL	HBL	MCB	UBL
Coefficient	Coeff	-0.01	15.96	-2.46	0.05	0.00	0.02	0.08	0.09	0.20	0.00
	P-value	0.93	0.44	0.08	0.00*	0.77	0.46	0.02*	0.40	0.02*	0.99
FEE	Coeff	0.13	-4.41	10.00	-0.08	0.00	0.15	-0.09	0.20	0.22	0.06
	P-value	0.42	0.92	0.00*	0.00*	0.59	0.48	0.66	0.26	0.21	0.86
OI	Coeff	0.00	25.66	-5.26	-0.09	-0.01	-0.16	0.07	-0.59	-0.59	0.01
	P-value	0.96	0.57	0.57	0.07	0.81	0.43	0.85	0.05*	0.01*	0.86
TLTOA	Coeff	0.00	-0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	P-value	0.66	0.80	0.29	0.12	0.95	0.02*	0.63	0.43	0.90	0.59
EQT	Coeff	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00
	P-value	0.55	0.83	0.91	0.37	0.81	0.57	0.52	0.19	0.21	0.27
FOC2	Coeff	-0.04	-18.69	-1.29	-0.04	0.00	0.06	0.66	-0.07	0.58	0.01
	P-value	0.53	0.56	0.40	0.00*	0.70	0.23	0.30	0.20	0.01*	0.15

*indicates significance at 5% level,___Indicates 1st difference of variables

OI which is the pat of other non-financing income (not related to loan granting and deposit taking) has negative effect on RAROA for BIL, BRJ and DIB with negative coefficients at insignificant. This suggests that most of the banks are not efficient to handle the variations involved in returns by diversifying income sources on other income activities. TLTOA has also weak relationship in adjusting profits while having risk associated with its returns, diversifying their loans portfolios would increase risk. High income diversification activities would increase the variability of income sources, thus negatively impact bank's risk adjustment performance. The coefficient of EQT has no impact on RAROA, increased share of equity is not a stable measure for this dependent variable by having more variations in its results, islamic banks registered low-risk adjusted earnings. Overall the coefficients of FOC2 is non-positive for almost all the banks except coefficient of DIB (0.00) which is positive with larger p-value (0.70). However, the coefficient of FOC2 is only significant for BRJ (0.00) with negative value (-0.04). So far, no statistically significant results can be observed for Islamic banks to improve risk-adjusted earnings.

The results of conventional banks are presented in the right panel, where the coefficients of FEE has overall insignificant and positive impact on risk-adjusted performance. However, the regression results of FEE is negative for ASBL are negative (-0.09) and insignificant indicates that although fee income enhance their earnings but high concentration on these activities would detoriate their risk-return profile. The coefficient associated with OI are non-positive at their significance level, as negative coefficient results can be seen for HBL (-0.59) with significant p-value (0.05), ABL (-0.16) with p-value (0.43) and MCB (-0.59) against p-value (0.01). These results proves that other

non-financing activities improved risk-adjusted earnings with less reliance on business activities, greater reliance would brings volatility in their earnings. The coefficient of TLTOA has overall positive impact on risk adjusted assets returns and significant only for ABL at value (0.02). This significant result for ABL shows the efficiency of ABL and capability to handle variations in the earnings. The coefficient of EQT is overall non-negative but insignificant for all the banks, suggest that banks with more equity capital detoriate risk-adjusted earnings with having risk averse attitude to hold more and diversify less. Overall the proxy measure of income diversity has no fruitful results with its non-positive and insignificant regression results. Only the coefficient results of MCB can be seen significant at p- value (0.01).So far, the overall results suggest that increased income diversity does not affect risk-adjusted performance of the banks.

5.3.2.4 Estimated regression results of risk adjusted return on equity

Table 5.8 (D) below estimates the results of risk adjusted return on equity. The coefficient of FEE in right panel overall shows negative results for most of the Islamic banks i,e. BBL (-0.42), MBL (-2.14) and DIB (-0.16), while for other two banks it is positive and insignificant for all banks, this shows that overall fee income has no effect on RAROE for islamic banks due to volatile in returns and risk of loss of their clients by charging high fee to adjust their profits, in contrast to Islamic banks the coefficient of fee income for conventional banks, shows positive and non-significant results in relation to RAROE for almost all of the banks, except the negative coefficient for UBL (-1.32) against non-significant p-value (0.53), by this we found that impact of fee income on risk-adjusted profits is although positive, but creating volatility in returns at beyond minimum level, which brings insignificant results for conventional banks them. The

55

coefficient of OI has also similar effect of fee income, as their coefficient results are negative for BBL (-0.40), MBL (-47.01) and DIB (-0.16) at higher significance level. However, for BIL the coefficient is positive (34.86) at level (0.00) mentions their consideration of other income to enhance profits.

Overall the coefficient of TLTOA has positive but no significant effect at their levels to adjust profitability on islamic banks resulting that diversifying more on loan portfolios associated with variability returns. The control variable, EQT is overall positive and shows the significant contribution to grow for MBL with p-value (0.00), while for other banks it is non-significant. This clarifies that islamic banks are reluctant to diversify their income sources due to small asset size and less profitability, they want to hold their financial assets rather than to opt diversification. The coefficient results of FOC2 are not in favour of risk-adjusted earnings, thus negatively impact on the earnings of BBL (-0.02), MBL (-2.14), BIL (-42.27) and BRJ (-0.17), against highly insignificant for all of them, except the coefficient of DIB (0.09) is positive due to its larger branch network, with insignificant value (0.46). Thus, this income diversification measure has no affect on the risk-adjusted performance for islamic banks.

The coefficient of OI is negative for HBL (-12.48), ASBL (-0.51), MCB (-2.44) and UBL (-0.15), only positive for ABL (49.18) at 1st difference level. However, significant result can be seen only for HBL (0.05) with negative coefficient. This may suggest that OI is not considered as an important determinant while diversifying in different sources of income. Overall, the regression results of TLTOA are positive at their levels and insignificant for all the banks, consistent with the results of Chiorazzo et al., (2008) who found positive but insignificant results of TLTOA on risk-adjusted profits.

56

Table 5.8(D): Estimated regression results of risk adjusted return on equity

		Islamic Banks					Conventional Banks				
		BBL	MBL	BIL	BRJ	DIB	ABL	ASBL	HBL	MCB	UBL
Coefficient	Coeff	0.26	-7.26	-85.1	0.16	-0.07	-35.02	0.11	1.40	1.80	0.27
	P-value	0.61	0.00*	0.37	0.11	0.51	0.45	0.066	0.55	0.01*	0.86
FEE	Coeff	-0.42	-2.14	56.08	-0.31	0.12	15.32	0.30	4.34	1.25	-1.32
	P-value	0.53	0.58	0.74	0.08	0.47	0.70	0.85	0.24	0.40	0.53
OI	Coeff	-0.40	-47.0	34.8	0.12	-0.16	-0.16	-0.51	-12.4	-2.44	-0.15
	P-value	0.20	0.22	0.00*	0.84	0.90	0.43	0.87	0.05*	0.22	0.90
TLTOA	Coeff	0.00	0.02	0.04	0.00	0.00	49.1	0.00	-0.01	0.00	0.00
	P-value	0.36	0.24	0.98	0.74	0.86	0.21	0.55	0.38	0.76	0.65
EQT	Coeff	0.00	0.36	0.59	0.00	0.00	10.02	0.04	-0.03	0.01	0.00
	P-value	0.25	0.12	0.69	0.28	0.27	0.05*	0.57	0.64	0.18	0.95
FOC2	Coeff	-0.02	-2.14	-42.2	-0.17	0.09	2.14	0.75	0.67	-2.45	0.25
	P-value	0.95	0.12	0.69	0.07	0.46	0.00*	0.23	0.05*	0.00*	0.50

*indicates significance at 5% level,___Indicates 1st difference of variables

The coefficient of EQT to total capital are overall positive and non-significant for all banks, except ABL at p-value (0.05), shows the increase bank capitalization increases risk-adjusted profits. The income diversification measure shows positive and significant results for HBL at value (0.05), ABL at value (0.00) for MCB, the coefficient is negative (-2.45) against p-value (0.00) for other two banks it is positive but insignificant. This indicates that HBL, ABL, and MCB are exploring new diversifying their income sources to increase their performance and generating revenues. While MCB has although significant results but income diversity brings negative results, which means their operating cost is high than revenues. The better diversification results can be seen on conventional banks as by taking 1st difference in ABL (2.14) p value (0.00) , implies that conventional banks by having large income diversifying strategies enhances their profitability.

57

For model 3:

The estimated regression results of model 3 reports results from table 5.9(A) to table 5.9 (D) as follows;

5.3.3.1 Estimated regression results of return on asset

Table 5.9(A) shows the estimated results of return on asset. The coefficient of Fee income in the left panel has a positive relationship between profits in islamic banks which shows that fee income is an important variable of diversification which improves ROA excepts BBL where coefficient is (0.01) having p value (0.86) shows an insignificant impact on dependent variable.

Table 5.9(A): Estimated regression results of return on asset

		Islamic Banks					Conventional Banks				
		BBL	MBL	BIL	BRJ	DIB	ABL	ASBL	HBL	MCB	UBL
Coefficient	Coeff	-0.02	0.03	-0.01	-0.01	-0.01	0.04	0.00	0.03	0.14	-0.07
	P-value	0.43	0.01*	0.47	0.57	0.05*	0.05*	0.50	0.19	0.23	0.31
FEE	Coeff	0.01	0.03	0.02	0.03	-0.03	-0.14	0.00	0.03	-0.49	0.16
	P-value	0.86	0.05*	0.05*	0.27	0.03*	0.14	0.94	0.69	0.04*	0.17
OI	Coeff	-0.01	-0.26	-0.01	-0.20	0.03	-0.05	-0.02	0.03	-0.08	0.06
	P-value	0.83	0.04*	0.84	0.34	0.65	0.54	0.83	0.78	0.73	0.31
TLTOA	Coeff	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	P-value	0.13	0.90	0.54	0.80	0.04*	0.74	0.32	0.17	0.99	0.51
EQT	Coeff	0.00	0.00	0.00	0.00	-4.04	0.00	0.00	0.00	0.00	0.01
	P-value	0.47	0.00*	0.60	0.23	0.63	0.07	0.52	0.00*	0.81	0.05*
FOC1	Coeff	0.00	0.01	-0.01	-0.01	0.00	-0.03	0.01	0.69	0.05	-0.03
	P-value	0.90	0.58	0.05*	0.21	0.70	0.04*	0.11	0.05*	0.23	0.44
FOC2	Coeff	0.04	-0.04	0.01	0.02	0.02	-0.01	0.00	-0.04	-0.17	0.10
	P-value	0.19	0.00*	0.25	0.31	0.03*	0.59	0.81	0.43	0.25	0.31

*indicates significance at 5% level,____Indicates 1st difference of variables

While in case of conventional banks only in case of MCB its coefficient is negative but significant while in others it shows no impact on ROA. This shows that conventional banks are less efficient in order to diversify in fee based activities. The coefficient of other income (OI) in the regression of BBL by is negative (-0.01) with p-value (0.86). This means that OI is not a significant determinant of ROA. The coefficient of OI is insignificant for both banks with p-value larger than 10% for every bank except for MBL where OI is negative (-0.26) but significant at (0.04) .This implies that in case of all banks except MBL other income does not play an important role for determining ROA. For our control variables ,overall we find that TLTOA ,measured by the total loans to total assets has no significant impact on ROA as results shows insignificant of relationship with dependent variable but it is significant only in BRJ having positive coefficient in the regression (0.00) with p value (0.04). TLTOA is not considered as an important independent variable for determining ROA.

The variable EQT has mixed effect on profits. We examine a negative relationship between ROA and Equity on both banks. With the exception of equity on MBL coefficient (0.00) having same p value (0.00), HBL by taking first difference of both banks dependent and independent variable (eqt) to check its significance on ROA which is positive and significant. Negative results indicate that an increase in bank capitalization brings lower profits. FOC1 is based on disintegration of operating income on non-financing income and financing income where low value indicates bank is more diversified. The coefficient of FOC1 is insignificant for islamic and conventional banks but with p-value larger than 10% for every bank only BIL shows significant (0.04) but negative impact (-0.01) and in case of conventional bank by taking first difference of

FOC1 only ABL is showing significant (0.04) but negative results (-0.03) of diversification on profitability measure which is ROA . FOC2 is based on disintegration of non-financing income on fee-based income, trading income and other income respectively. The results of FOC2 shows no impact on profitability in case of conventional banks , while in islamic banks it is positive and significant only in case of MBL with p value (0.04) and also in BRJ by taking its first difference its p value is (0.02) rest assures the value larger than 10%.

5.3.3.2 Estimated regression results of return on equity

Table 5.9(B) below presents the estimation results of ROE. The coefficients of fee income in top panel shows the results for islamic banks, where the coefficient of fee income is negative for BBL (-0.30) and insignificant at p-value (0.54) ,while for other banks it is positive against insignificant values. However, the coefficient of fee income is although negative for BRJ (-0.29) but it is significant at value (0.00) which is less than 5% significance level. This suggests that islamic banks earnings more from investment income rather than relying on fee based activities.

For conventional banks, the coefficient of FEE is negative for ABL (-0.23) and MCB (-3.24) at insignificant values for all banks. The coefficient of FEE is insignificant for islamic banks and conventional banks with p-value larger than 10%. This implies that fee based income does not play an important role for determining ROE . For OI, overall we observe negative and insignificant results for islamic banks in relation to ROE , however by taking first difference although the coefficient is negative for MBL (-3.47) but significant at p-value (0.02). For conventional banks, the coefficient of OI is overall

60

insignificant and positive except MCB where the coefficient is negative (-3.24) against insignificant value. This means that OI is not an important determinant of ROE while measuring the impact of diversification

Table 5.9(B): Estimated regression results for return on equity

		Islamic Banks					Conventional Banks				
		BBL	MBL	BIL	BRJ	DIB	ABL	ASBL	HBL	MCB	UBL
Coefficient	Coeff	0.00	0.21	-0.05	0.01	-0.04	0.17	-0.11	0.36	0.96	-0.95
	P-value	0.99	0.03*	0.54	0.72	0.76	0.61	0.52	0.38	0.31	0.30
FEE	Coeff	-0.30	0.23	0.16	-0.29	0.15	-0.23	0.57	0.26	-3.24	2.09
	P-value	0.54	0.12	0.12	0.00*	0.47	0.89	0.66	0.70	0.04*	0.16
OI	Coeff	-0.03	-3.47	-0.15	-0.37	-1.93	0.77	2.18	0.52	-0.48	0.83
	P-value	0.91	0.02*	0.74	0.39	0.27	0.60	0.31	0.69	0.80	0.31
TLTOA	Coeff	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	P-value	0.03*	0.65	0.62	0.84	0.72	0.02*	0.50	0.17	0.46	0.52
EQT	Coeff	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.03	0.00	0.07
	P-value	0.53	0.02	0.76	0.97	0.68	0.17	0.54	0.03*	0.85	0.05*
FOC1	Coeff	0.00	0.05	-0.07	-0.01	-0.08	-0.59	-0.06	0.44	0.34	-0.39
	P-value	0.60	0.67	0.025	0.68	0.15	0.01*	0.81	0.06	0.30	0.37
FOC2	Coeff	0.20	-0.26	0.09	0.05	0.13	0.06	0.46	-0.47	-1.12	1.37
	P-value	0.50	0.01*	0.31	0.38	0.36	0.87	0.27	0.42	0.33	0.30

*indicates significance at 5% level,___Indicates 1st difference of variables

TLTOA, is the measure of loans to total assets has overall positive coefficients for islamic banks but significant only for BBL at p-value (0.03). Similar results can be seen for conventional banks, where the coefficients of TLTOA are overall positive and non-significant for all banks , except ABL which has significant p-value at (0.02). This shows that an increase in lending activity does not impact the idea of income diversification. EQT is another control variable which shows positive and insignificant results for all islamic banks. However for conventional banks, its coefficients are overall positive and

significant for HBL at value (0.03) and for UBL at value (0.05), suggests that it is more appropriate determinant for conventional banks in contrast with Islamic banks while measuring profitability. The coefficient of FOC1 is overall negative for BIL (-0.07), DIB (-0.08) and BRJ (-0.01) and non-significant for all islamic banks. For conventional banks, the coefficient is negative and insignificant for most of the banks, as regression results suggest that only ABL with negative coefficient (-0.59) has significant at p-value (0.01), so this suggest that FOC1 is not in favor of income diversification for both types of banks. The coefficients associated with FOC2 are overall positive and non-significant for Islamic banks. However with negative coefficient of MBL (-0.26) significant result can be seen at p-value (0.01),similarly in contrast to islamic banks, the coefficients of FOC2 for them are non-significant and positive for ABL (0.06), ASBL (0.46) and UBL (1.37), for rest of two banks its coefficients are although positive but insignificant. This clarifies that islamic banks are to stabilize themselves by following roe as an dependent variable.

5.3.3.3 Estimated regression results for risk adjusted return on asset

Table 5.9 (C) shows the results of RAROA which is the risk measure of profitability. The left panel represent the estimated regression results for islamic banks, where coefficient of FEE has negative and non significant effect on risk adjusted profitability for MBL and BRJ with the exception of BIL (0.00) and BRJ (0.05) by having significant results, explores that fee income although improves the profitability but more reliance on them would adversely affect the financial performance of the banks as can be seen for MBL (-12.05) and BRJ (-0.03). For conventional banks, where coefficient of Fee is negative and insignificant for all banks, except UBL where its coefficient is also negative (-0.19)

62

but significant at p value (0.04). This indicates it is not appropriate to diversify fee income activities where most of the banks are not efficient to avoid risks associated with profitability. The coefficients of OI has overall non-significant and negative results for all banks, stating that OI has weak correlation while risk adjusting profitability. Similarly, coefficient of OI is insignificant and negative for ABL, ASBL and HBL ,but coefficients associated with MCB and UBL are also negative (-0.65) but significant at (0.01),which clarifies that investing in other income activities is not an appropriate measure to handle risk-adjusted profits for other banks.

Table 5.9(C): Estimated regression results for RAROA

		Islamic Banks					Conventional Banks				
		BBL	MBL	BIL	BRJ	DIB	ABL	ASBL	HBL	MCB	UBL
Coefficient	Coeff	0.02	30.40	-7.68	0.01	0.00	0.06	0.08	0.09	0.27	0.14
	P-value	0.74	0.32	0.00*	0.16	0.69	0.18	0.02*	0.41	0.03*	0.02*
FEE	Coeff	0.11	-12.0	11.11	-0.03	0.01	-0.01	-0.14	0.19	0.06	-0.19
	P-value	0.49	0.80	0.00*	0.05*	0.46	0.97	0.59	0.28	0.85	0.04*
OI	Coeff	-0.01	-35.0	-12.3	-0.02	-0.04	-0.06	0.04	-0.59	-0.65	-0.13
	P-value	0.90	0.47	0.12	0.81	0.61	0.76	0.92	0.10	0.01*	0.01*
TLTOA	Coeff	0.00	0.11	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	P-value	0.75	0.68	0.55	0.05*	0.94	0.04*	0.85	0.44	0.90	0.02*
EQT	Coeff	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00
	P-value	0.48	0.79	0.86	0.33	0.99	0.79	0.48	0.20	0.24	0.11
FOC1	Coeff	0.00	-25.2	4.77	0.01	0.00	0.05	0.01	0.01	0.03	0.09
	P-value	0.48	0.51	0.00*	0.24	0.59	0.13	0.76	0.97	0.48	0.00*
FOC2	Coeff	-0.08	-19.42	5.43	-0.02	0.00	-0.04	0.07	-0.07	-0.31	-0.19
	P-value	0.39	0.52	0.00*	0.11	0.58	0.43	0.43	0.66	0.04*	0.02*

*indicates significance at 5% level,___Indicates 1st difference of variables

The coefficients of TLTOA have no effect on risk adjusting performance measure, indicating that TLTOA is not an important determinant to adjust the risk measure. In

contrast to islamic banks, the coefficients related with Loans are positive but insignificant in relation to RAROA with having p value greater than 10% significance level. Moreover, we observe significant results of TLTOA on some banks, which are ABL (0.04) and UBL (0.02), this shows that by having low amount of assets theses banks can adjust their profits by lending activities. For control variable, Overall the coefficient of Equity has no effect on RAROA for islamic banks, means that equity is not considered as an important sources while diversification. However, for conventional banks the coefficient of EQT has negative effect on risk-adjusted profits, suggesting that an increase in banks regulatory requirements bring lower returns for the banks by keeping Equity as reserve requirement rather than investing it.

The Coefficients related to FOC1 are non-significant and positive for all the banks, except MBL where coefficients are negative (-25.24) which means that diversification negatively impact the risk-adjusted performance measure for the banks. However, BIL has significance at value (0.00) mentions that this bank has more capability of diversification when RAROA is our dependent variable. In case of conventional banks, the coefficients of FOC1 are positive and insignificant at their levels, but significant result can be seen for UBL where p-value (0.00) is less than 5% significance, means that UBL is diversifying its resources with minimal operating cost to generate more returns compare to other banks.

The other proxy of income diversity is FOC2 where its coefficients are negative for BBL (-0.08), MBL (-19.42) and BRJ (-0.02), except BIL which is significant at (0.00) thus clarifies diversification lowers the profits, as more risk and cost of returns are involved in it, in comparison to islamic banks, similar results can be seen for conventional banks

64

where the coefficients of FOC2 are negative and insignificant for ABL, HBL and MCB, although significant for MCB (0.04) and UBL (0.02) which shows that these banks are diversifying their sources of income in contrast to other banks. And consider this diversification measure more appropriate than FOC1 income diversity measure. However, other banks are reluctant to diversify their resources because of technological cost and management skills to generate high returns.

5.3.3.4 Estimated regression results for risk adjusted return on equity

Table 5.9 (D) shows the results of risk adjusted return on equity. The coefficient of fee income is non positive and insignificant for BBL (-0.36), MBL (-2.62) and BRJ (-0.14) and for BIL the coefficients are positive (69.34), DIB (0.14) against significance values more than 10%. This clarifies that islamic banks are facing volatility in returns while opting for diversification in fee income activities. Similarly, the coefficients of fee income for conventional banks are positive and insignificant for most of the banks, except UBL where p-value significant at (0.01) . This shows that diversification in fee income does not improve risk profiles for both types of banks. The coefficients of OI in top panel are insignificant and negative for BBL (-0.39) , MBL (-53.11) and DIB (-0.35) with higher significance values , except BIL where coefficient is positive (36.39) at p-value (0.00). So, OI is not considered as an important variable of NFI for all Islamic banks. In contrast to conventional banks which are more experienced and profitable the coefficient of OI is also non-positive in bottom panel for HBL (-12.39), MCB (-2.99), UBL (-3.95) with significant value at (0.00).

Table 5.9(D): Estimated regression results for RAROE

		Islamic Banks					Conventional Banks				
		BBL	MBL	BIL	BRJ	DIB	ABL	ASBL	HBL	MCB	UBL
Coefficient	Coeff	0.05	0.88	-147.4	0.00	-0.08	-65.9	0.07	1.40	2.39	3.89
	P-value	0.88	-0.02*	0.32	0.97	0.51	0.47	0.78	0.55	0.03*	0.01*
FEE	Coeff	-0.36	-2.62	69.30	-0.14	0.14	11.25	1.06	4.29	-0.26	5.73
	P-value	0.59	0.52	0.69	0.32	0.48	0.80	0.60	0.27	0.91	0.01*
OI	Coeff	-0.39	-53.11	36.39	0.61	-0.35	54.34	-0.01	-12.39	-2.99	-3.95
	P-value	0.23	0.20	0.00	0.49	0.84	0.19	1.00	0.10	0.16	0.00*
TLTOA	Coeff	0.00	0.02	-0.15	0.00	0.00	0.56	-0.01	-0.01	0.00	-0.01
	P-value	0.41	0.33	0.94	0.63	0.87	0.84	0.40	0.39	0.77	0.00*
EQT	Coeff	0.00	0.36	0.52	0.00	0.00	10.52	0.08	-0.03	0.01	0.13
	P-value	0.31	0.00*	0.76	0.55	0.35	0.05*	0.41	0.66	0.17	0.02*
FOC1	Coeff	0.00	-1.58	56.9	0.07	-0.01	15.25	-0.22	0.23	0.27	2.57
	P-value	0.63	0.63	0.57	0.17	0.85	0.79	0.53	0.96	0.44	0.00*
FOC2	Coeff	0.14	6.99	91.62	-0.14	0.10	54.56	0.70	-0.67	-3.23	-5.25
	P-value	0.73	0.01*	0.52	0.26	0.47	0.59	0.28	0.84	0.02*	0.01*

*indicates significance at 5% level,___Indicates 1st difference of variables

This suggest that OI is not an important variable to consider for diversification for both types of banks as it inversely affects the profitability of banks. For our control variable, TLTOA the coefficients for islamic banks are overall positive and non-significant, means that banks are involved in lending activities to increase their efficiency and productivity, but increased reliance on lending activities could lead to reduction in profitability can be seen as negative coefficient of BIL (-0.15) against p-value (0.94) which is highly insignificant. For conventional banks, the coefficients of TLTOA has overall negative results for HBL (-0.01), ASBL (-0.01) and UBL (-0.01) with significant value (0.00), while for other two banks its coefficients are positive. This suggests that increased involvement in lending based activities although increased profits for the banks, but greater reliance on these would reduce their profits. For control variable, EQT the

66

coefficients are positive and insignificant for most of the islamic banks at 1st difference level, only significant results can be seen for MBL at p-value (0.00). For conventional banks, the coefficient of EQT is overall positive and insignificant for most of the banks, however significant results can be seen for ABL at p-value (0.05) and UBL (0.02). The results of both types of banks suggest that increased capital reserve requirements forces banks to not to diversify more in business activities rather to hold more reserves on their vaults to meet liquidity requirements.

The coefficient of FOC1 for islamic banks are insignificant and negative for MBL (-1.58), DIB (-0.01) at p-values more than significance level. Similarly, the coefficients of FOC1 for conventional banks is positive for most of the banks but they are also insignificant as islamic banks, except UBL which is opting for income diversification. So, the coefficient results for both types of banks indicates that FOC1 is not an appropriate measure of income diversity for them. The other proxy used for income diversification is FOC2, where the coefficients are positive and non-significant to enhance risk-adjusted performance for islamic banks. Only MBL has significance at p-value (0.01) in order to diversify, while for others it is not effective. In contrast, the coefficients of FOC2 for conventional banks are insignificant negative for HBL (-0.67), while significant for MCB at level (0.02) with negative coefficient (-3.23) and also for UBL where the coefficient is (-5.25) at p-value (0.01).

The overall, results of this model indicates that income diversification has negative or no effect on risk-adjusted earnings for both types of banks in order to enhance their profitability.

Chapter 6

Summary, Conclusion and Policy Recommendation

6.1 Introduction

This chapter begins with a summary of previous chapters, followed by conclusion, and policy recommendations for banking industry.

6.2 Summary

Several studies are done to check the impact of income diversity on the financial performance of banks for developed and underdeveloped countries Sanya and Wolfe (2011); Stiroh and Rumble (2006) ; DeYoung and Ronald (2001) , while scarce literature is available for developing countries like Pakistan. To our knowledge this is the first study to check and compare the effect of income diversification on the profitability of islamic vs conventional banks in Pakistan. This study applies Augmented Dickey Fuller (ADF) test and estimated egression results through Ordinary least square method.

The empirical results indicate the mixed effect of income diversity on the efficiency of both types of banks. We used the proxies of return on asset and return on equity to measure the performance of banks, while the proxies used for risk measures were risk adjusted return on assets and risk adjusted return on equity. The findings indicate that banks perceive volatile earnings when they are diversifying into non-financing activities as risk is also associated with their earnings. So far, in this study, we did not find the

beneficial results of non-financing income for islamic banks than conventional banks, as islamic banks are new in banking industry with having low managerial efficiency and economies of scope, so they cannot face the loss of their clients by charging more fee income. Islamic banks are not considered as an attractive investment propositions for its customers as it entails low risk-adjusted earnings, thus islamic banks are less diversified and low profitable, due to smaller in terms of asset size and technological innovation. The findings of Stiroh (2006) suggest that banks with low asset size would not be able to gain benefits from use of diversification.

Increase income diversity as result of non-financing income reduces risk adjusted earnings thus detoriate the risk profile of the banks It is a clear evidence that non-financing income improves the revenue of banks but higher reliance on these activities would lower risk-adjusted profits Stiroh (2004a; 2004b). In terms of bank returns, rising fee income, service charges, and investment revenue share will reduce ROE and enlarge volatility in earnings.

Revenue that banks may derive from fee-based activities varies from period to period as it is easier to switch from bank to bank when they are expanding/ diversifying in fee based activities this also increase fixed cost and operating leverage for banks and also increase the staff requirements and investment in information technology. Whereas, most of fee income is obtained from traditional banking activities (deposit/loan making) where customers are reluctant to shift from bank to bank .

69

6.3 Conclusion

The overall impact of investing in non financing activities is to analyze the profitability mechanism of islamic and conventional banks by diversifying their income sources. islamic banks perform the role of credit dispensers in the same way as their conventional counterparts and hence, they are not impervious to the impact that any over-zealous diversification strategy could exert on their earnings and performance. The study concludes that islamic banks are less diversified in terms non-financing income activities and more focused towards financing activities, which are consumer financing and real estate investments in contrast to their conventional counterparts.

Besides the foray into non-financing income activities, an increase in exposure to consumer financing appeared to be earnings accretive on a risk-adjusted basis. Similar to Income Diversification and Performance of islamic banks the increasing emphasis on non-financing income activities, any push into increasing exposure to financing for the consumer sector must not transgress the optimal point of diversification.

The overall profitability and risk-adjusted performance of banks improves by opting income diversification strategy. However, this impact is beneficial up to some extent, an increase involvement in these activities beyond the maximum level of non financing income would adversely affect the efficiency of banks as high operating risk is involved in it. The evidence of this study is that an increase in bank's fee based activities would raises different agency concerns to the different stakeholders in the banking system. It is usually assumed that bank shareholders are able to diversify away the impact of

idiosyncratic risk.   However, increased income volatility resulting from increased exposure to fees can have a non linear impact on bank cost of funds and result in increased reliance upon internal bank hedging on behalf of shareholders. Furthermore, the recent global financial crisis has demonstrated the importance of systemic risk in banking for the economy as a whole.

Using various modeling approaches, we find that increasing non-financing income activities can boost risk adjusted returns for both types of banks. So far, the study reveals that bank income sources are not well diversified so does not bring fruitful results for both types of banks in case of Pakistan. Further, companies/banks should not always increase share of non-financing income to improve their financial performance.

Overall the bank's management is potentially more concerned about the level of returns to hedge/minimize their idiosyntric risk, the negative aspects of "too big to fail" increase the risk of bank failure due to increased income volatility resulting from higher levels of fees. According to our findings, banks decisions on whether to diversify or not to diversify their income sources should depend on the careful examination of different available diversification options adopted in international market, apart from those currently in practice.

6.4 Policy Recommendation

The study finds a positive non-significant relationship between income diversity and the profitability of dual banking system hence suggest that diversification toward fee-based financial products and services, would reduce banks' income volatility and enhance the returns on a risk adjusted basis. It also improves the solvency position of banks up to some optimal point of income diversification dependent upon the operating landscape of bank's earning and further recommends that over reliance on these activities would reduce their profitability.

For islamic banks, they can also expand/ shift their revenue strategies into non-financing income generation activities in search of higher earnings which in-turn reduces the idiosyntric risk associated with earnings. The study further recommends that in order to improve the profitability of both banking system there is a need for the management to initiate measures that will increase the overall profitability for them.

For income diversification banks need to additionally invest in human resources and technology, which in turn entails high cost to the banks and in return high earnings volatility. So, banks should carefully estimate cost benefit analysis before considering diversification strategy as revenue generation.

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Appendix: List of Banks

	Banks	Symbols
Islamic Banks	AlBarakah Bank Limited	BBL
	Bank Islami	BI
	Burj Bank	BB
	Dubai Islamic Bank	DIB
	Meezan Bank Limited	MBL
Conventional Banks	Allied Bank Limited	ABL
	Askari Bank Limited	ASBL
	Habib Bank Limited	HBL
	Muslim Commercial Bank	MCB
	United Bank Limited	UBL