Financial Performance of Islamic and Conventional Banks During and After US Sub-prime Crisis in Pakistan: A Comparative Study

Muhammad Bilal (Corresponding author)

IIUM Institute of Islamic Banking and Finance (IIiBF), International Islamic University Malaysia, Kuala Lumpur, Malaysia

Tel: +60.132523580 Email: mbilalafzal@hotmail.com

Hanudin Amin

Labuan Faculty of International Finance, Universiti Malaysia Sabah, Labuan, Malaysia, and

IIUM Institute of Islamic Banking and Finance (IIiBF), International Islamic University Malaysia, Kuala Lumpur, Malaysia

Tel: +60-138555760 Email: hanudin_zu@yahoo.com

Abstract

Islamic banking system that is based on Shariah principles is considered more resilient to the financial shocks due to its interest free nature. This study is aimed to compare the financial performances and investigate whether Islamic banks are more profitable, liquid, less risky and operationally efficient compared to conventional banks during and after US Sub-prime crisis in Pakistan. The time span used for the study was from 2007 to 2012. Thirteen financial ratios composed of five Islamic and five conventional banks to measure the financial performance in terms of profitability, risk and solvency, liquidity and capital adequacy. Independent sample t-test is used to determine the significance of mean differences of selected ratios. The results of profitability measures indicate that Islamic banks remained less profitable; however, liquidity performances of Islamic banks were better than conventional banks. However, overall operational efficiency measures are not in favour of Islamic banks. The study concluded that conventional banks performed more efficiently and profitably as compared to Islamic banks. The opportunity of future empirical study is recommended at the end of this paper.

Keywords: Islamic banks, Conventional banks, US Sub-prime crisis, Financial performance

Introduction

Islamic banking that is based on Shariah principles is distinct in operations and procedures as compared with its conventional counterpart. Islamic banking derives its inspiration and guidance from the religious laws of Islam and conducts its operations strictly in compliance with the principle of Shariah (Memon, 2007). According to Mirakhor (2000) and Haque et al. (2007), the principles of Shariah provide a clear direction to Islamic banks on the prohibition of riba (interest) and on the earnings of profit through permissible Shariah-compliant transactions. Islamic banks with their wide range of of financial products and services are mainly focused on the objectives of Shariah in promoting both economic and social welfare together (Mirakhor, 2000).

Today, Islamic banks exist in many countries and are recognized as a viable and competitive alternative to conventional banks not merely in the M*uslim* countries but outside as well (Dusuki, 2008). Islamic banking with wide range of products and services has now gained universal recognition with more than 300 Islamic financial institutions in 75 countries around the globe (Sufian et al., 2008) . It is in fact one of the fastest growing financial sectors in the past four decades in the world with the growth rate

of 15 to 20 percent per annum. According to Malaysia World's Islamic Finance Marketplace (2014) report, the global Islamic banking and finance industry has reached US $2.1 trillion at the end of year 2014 and the industry forecast suggests that the Islamic banking assets will grow beyond the milestone of US $2.4 trillion in the end of 2015.

The emergence of Islamic banking in a global financial market can be traced down with the opening of two interest-free financial institutions named Mit-Ghamr Saving Bank (1963) and Nasser Social Bank (1970) in Cairo, Egypt (Henry & Wilson, 2006). The progress was made in this movement as of early 1970's, when Dubai Islamic Bank started its operations in Dubai (U.A.E) and in 1975, the Islamic Development Bank (IDB) was created by the M*uslim* world to support the M*uslim* countries and communities by arranging finance for trade and development on non-interest basis (Siddiqi, 2006).

Later, in 1980s, various Islamic banks and Islamic financial institutions have begun their operations in different Islamic countries. Pakistan was among one of the first countries to take steps towards establishing interest-free banking system in the whole banking sector. In this regard, State Bank of Pakistan (SBP) has established Islamic Banking Department to give focused attention to the area (Memon, 2007). The Islamic Banking Department of SBP developed three-pronged strategy to promote Islamic Banking in Pakistan (Ansari & Rehman, 2011): (1) Establishing full-fledged Islamic banks in the private sector; (2) Setting up of subsidiaries by the existing commercial banks; (3) Separating branches for Islamic banking by the existing commercial banks

The country's first full-fledged Islamic bank was established in 2002 named Meezan Bank and later more Islamic banks have entered into the market. Bank Islami was the second full-fledged Islamic commercial bank in Pakistan, incorporated in October 2004 whereas Dubai Islamic Bank (DIB) commenced its operations in 2006. Presently, there are at least five full-fledged Islamic banks operating in Pakistan: (i). AlBaraka Islamic Bank Pakistan (1991); (ii). Meezan Bank Limited (2002); (iii). BankIslami Pakistan Limited (2003); (iv). Dubai Islamic Bank Pakistan Limited (2005); (v). Burj Bank Limited (2007).

In terms of market growth and share, Islamic banking sector is performing remarkably well for the past one decade. The overall growth of the Islamic banking sector marked at 31.5% in March, 2013 which was 2.0% more in comparison to 29.5% in March, 2012 (SBP, 2013). The historical growth trends show us sustainability in Islamic banking sector even in the times of US Sub-prime crisis. The Islamic banking system strikes a balance between flexibility and oversight. Therefore, the proponents of Islamic banking system believe that credit crunch could not happen in the Islamic financial institutions, because the system operates based on partnership between the client and the banks and that the interest-free banking system is invariant to interest rate shocks (Darrat, 2002; Kia, 2001; Kia & Darrat, 2003; Kaleem, 2000).

There is a social commitment within the Islamic banking and financial system enabling it to resist against the financial crisis as experienced in US Sub-prime crisis in 2007 to 2008. However, the annual growth and increase in the total assets cannot be taken as the sole evaluation measure to estimate the overall performance of any banking system. It is, therefore, important to compare the financial performance, while using financial ratios of Islamic and conventional banking systems that co-exist in the same economy.

This main purpose of this study is to compare the financial performance of Islamic and conventional banks during and after US Sub-prime crisis period from 2007 to 2012 in Pakistan. The objective of the study is, therefore, to identify the banking system that performs adequately and efficiently during the crisis time and becomes more resilient from the financial

shock. For this purpose, the study has selected five Islamic and five conventional banks and thirteen financial ratios that will be estimated to measure the financial performance in terms of profitability, risk and solvency, liquidity and capital adequacy. Lastly, the findings of the study will be of significance for Islamic banks and the ratio analysis provides important information not only to depositors, but it also helps the management of the bank in improving the future performance against any potential financial crisis in the economy.

In the past, a number of studies was conducted to evaluate the financial performance of Islamic and conventional banks in *Muslim* countries. Some studies have discussed the performance of Islamic banks on a theoretical level and a few studies provide rigorous empirical evidence. The majority of empirical studies focused on the performance and issues of efficiency and profitability in Islamic banks.

Bashir (2001) examines the determinants of 18 Islamic banks performance across eight Middle Eastern countries namely Egypt, Bahrain, Jordan, Kuwait, Qatar, Sudan, Turkey and United Arab Emirates (UAE) during 1993 and 1998. The study uses four measures of performance net non-interest margin (NIM), before tax profit to total assets (BTP/TA), ROE, and ROA. The study uses external variables such as macroeconomic environment, regulation and financial markets. The regression analysis shows that there is a positive relationship between Islamic banks performance and capital to assets and loan to assets ratios.

Brown (2003) investigates the efficiency of Islamic banks across countries. He measures the performance of Islamic banks over the period 1998-2001. The methodology employed includes Data Envelopment Analysis (DEA) cost efficiency and ratio analysis. The finding shows that the most liquid market which includes liquid assets or customers and short-term funding, is in the Bahamas and the correlations are not significant when the cost efficiency scores are

compared with the standard ratio cost efficiency measurement.

Some studies have compared the performance of Islamic and conventional banking systems. They used indicators to measure banking performances, namely financial ratios. Metwally (1997) evaluates the performance of 15 interest-free banks and 15 conventional banks in terms of liquidity, leverage, credit risk, profitability and efficiency. The study finds that the two types of banks may be differentiated in terms of liquidity, leverage and credit risk, but not in terms of profitability and efficiency. Moreover, both types of banks offer depositors similar returns and direct the largest proportion of their funds towards the financing of durables.

Samad and Hassan (1999) evaluate intertemporal and interbank performances of Bank Islam Malaysia Berhad (BIMB) in profitability, liquidity, risk and solvency and community involvement for the period 1984-1997. Financial ratios such as profitability ratios, liquidity ratios, risk and solvency ratios are applied in measuring these performances, while t-test and F-test are used in determining their significance. In terms of sample the study first compared BIMB with a conventional bank (Bank Pertanian) which is a smaller bank (in terms of asset) than BIMB. The second comparison is made with another conventional bank (Perwira Affin). Third, the comparison of BIMB is made with the 8 conventional banks in Malaysia. The findings show that the Islamic bank made (statistically) significant progress on return on assets (ROA) and return on equity (ROE) during 1984-1997. The comparison of BIMB with a group of conventional bank on ROA and ROE does not show (statistically) any difference in performance.

Rosly and Abu-Bakar (2003) compare the performance of Islamic and mainstream banks in Malaysia and uses descriptive statistics and the *t*-test of the average profitability performance tests. The study discovers that during the period of 1996 and 1999 the mainstream

banking performed better than Islamic banks on efficiency terms. This is described as the mainstream banks that have a larger market size, long-term experience and financial deepening factor, which Islamic banks have yet to develop.

Ayub et al. (2012) evaluate the performance of Islamic and conventional banks in Pakistan during 2001 and 2007. The study selects five conventional banks and compares their performance with Al-Baraka Bank in Pakistan. The variables selected to evaluate the overall performance of the banks were net investment, advances net, operating fixed assets, borrowing from financial institutions, deposits and other accounts, administrative expenditures, profit and number of employees. Augmented Dickey-Fuller (ADF) and correlogram tests were used to analyse the collected data. The results showed that there has been a positive insignificant impact of selected Islamic bank. In this regard, it was concluded that Al-Baraka Bank was less profitable and less cost-effective as compared with five conventional banks in Pakistan. The results also indicate that the conventional banking has a long history, experience and large contribution in the monetary resources of Pakistan that gives superior financial performance and competitive edge on Islamic banking in Pakistan.

Ansari and Rehman (2011) compare five Islamic and five conventional banks in order to analyse their financial performance during 2005 and 2009. For this purpose, the study uses return on assets (ROA) as a proxy and it is measured with other explanatory variables to measure the financial performance of banking industry. Descriptive statistics, correlation matrix and F-value are used to examine the impact of explanatory variables. The results of financial comparisons of Islamic and conventional banks are consistent with the previous studies like Hassan and Bashir (2003) as well as Ben Naceur (2003). In the findings of the study, the total assets show negative relationship on financial performance for conventional banks and positive on Islamic banks, while conventional banks

deposits ratio is less than Islamic banks which means that deposits of Islamic banks increase the profitability more than the conventional banks. Therefore, in terms of profitability, the Islamic banking system is much superior to the conventional banks and they have the capacity to increase their market share by generating new activities in Pakistan.

Hasan and Dridi (2010) examine the performance of Islamic banks and conventional banks during the global financial crisis by looking at the impact of the crisis on profitability, credit and asset growth, as well as external ratings in a group of countries. The study selected about 120 conventional and Islamic banks from Bahrain, Jordan, Kuwait, Malaysia, Qatar, Saudi Arabia, Turkey, and the UAE. The study has selected seven financial ratios and run the regression analysis in order to make a comparison between the two banking business models during the global financial crisis. The study suggests that Islamic banks have been affected differently than conventional banks. Factors related to Islamic bank business model helped limit the adverse impact on profitability in 2008, while weaknesses in risk management practices in some Islamic banks led to a larger decline in profitability in 2009 compared to conventional banks. However, Islamic banks credit and asset growth performed better than the conventional banks in 2008–09, contributing to financial and economic stability. Hence, Islamic banks showed stronger resilience, on average, during the global financial crisis.

Sehrish et al. (2012) compared the financial performance of Islamic and conventional banks in Pakistan from 2007 to 2011. The study has selected six financial ratios in order to make a comparison between the two banking systems. The results show that Islamic banks are less risky in terms of dealing in loans and less efficient in expense management as compared with the conventional banks. This is owing to the problem that lies with the operating expenses of Islamic banks. Despite the increase in revenues during 2007 to 2011, the expenses to generate

these revenues were much greater which has put a barrier to Islamic banks' efficiency. Nevertheless, no significant difference has been found in the profitability of both the banking sectors.

Amjad et al. (2013) investigate the performance of Islamic and conventional banks in Pakistan. This study has selected four Islamic and conventional banks and thirteen financial ratios were estimated to measure these performances in terms of profitability, liquidity, risk and solvency, as well as capital adequacy. The data were extracted from annual reports and financial statements for the period of 2008 to 2011. To test the significance of mean differences of these ratios, independent sample *t*-test and ANOVA were used between and among banks. The study has concluded that Islamic banks have proven to be more liquid, less risky and operationally efficient than conventional banks.

Nonetheless, there are limited studies conducted to evaluate the financial performance of Islamic and conventional banks during the US Sub-prime crises in Muslim countries. In this regard, the study conducted by How et al. (2005) demonstrate that the Islamic banking model is relevant in dealing with the impact of the hostile current financial crisis. The study evaluates the impact of the dollar collapse as a result of the US Sub-prime crisis, on the return on assets during the financial period (1998-2009).

Abd-Majid and Kassim (2010) examine the impact of financial shocks on Malaysian Islamic banks during ASIAN (1997) and US Sub-prime crisis (2007). The study provides the empirical evidences on the impact of financial shocks on the Islamic banks vis-a-vis the conventional banks. The study is aimed at testing the validity of the proposition that the Islamic banks are more resilient to the financial shocks compared with the conventional banks and for this it employs the impulse response functions and variance decomposition analysis (VDA) based on the vector auto-regression (VAR) method. The VDA results indicate that both the Islamic and

conventional banking systems are vulnerable to macroeconomic and financial shocks. In case of loans (financing), during both the 1997 and 2007 crises periods, the variations in conventional loan were explained by the macroeconomic factors.

However, for Islamic financing the role of interest rate and other macroeconomic variables are significant in accounting for the variations in Islamic financing. Therefore, these results negate the popular belief that the Islamic financial system is sheltered from the financial shocks due to its interest-free nature, in turn, it is described as the weakness of the interest-free monetary system particularly in a dual banking system, such as in Malaysia, lies in the current financial market setup.

A few more recent studies have attempted to evaluate and compare the financial performance of Islamic and conventional banking during US Sub-prime crisis. Johnes et al. (2013) compare the efficiency of Islamic and conventional banks located in18 countries over the period of 2004 to 2009 (a period which covers the start of the global financial crisis) using data envelopment analysis (DEA) and meta-frontier analysis (MFA). The DEA results are in-line with previous studies of El-Gamal and Inanoglu (2005), Mokhtar et al. (2006), Bader (2008), and Hassan et al. (2009) which provide evidence that there are no significant differences in gross efficiency, on average, between conventional and Islamic banks. The study has analyzed the performance in two perspectives; type efficiency and net efficiency. The type efficiency results strongly indicate that Islamic banking is less efficient, on average, than conventional banking. However, the net efficiency is significantly higher, on average, in Islamic compared with conventional banks suggesting that the managers of Islamic banks are particularly efficient given the rules by which they are constrained.

Another study by Daly et al. (2013), aims to test the resistance of the Islamic Banks in comparison to conventional banks during Sub-prime crisis

in 2007. The study extends an empirical sample of 48 Islamic and conventional banks in 8 banking systems and findings have shown that small Islamic banks tend to be financially stronger than small conventional banks and large conventional banks tend to be financially stronger than large Islamic banks. Moreover, the small Islamic banks have tendency to be more solid than the large conventional banks. This is explained that in comparison to large conventional banks, the small Islamic banks are being relatively more stable as they operate in a limited market and therefore concentrate on low-risk investments.

In a recent study, Berg and Pattillo (2015) examine the Islamic banking claims about its relative resilience to financial crises as compared to conventional banking. The data set comprises weekly deposit data for all Islamic and conventional banks operating in Pakistan between July 11, 2008 and January 2, 2009. The study defines the "financial panic" period as that of large deposit outflows from the banking system spanning seven weeks starting on September 27, 2008 and ending on November 14, 2008. The results show that Islamic bank branches are less prone to deposit withdrawals during financial panics, both unconditionally and after controlling for bank characteristics. The Islamic branches of banks that have both Islamic and conventional operations tend to attract deposits during panics, which suggest a role for religious branding.

In sum, most of the studies reviewed are of importance in comparing the financial performance of Islamic and conventional banks in diverse countries along with different time durations. Furthermore, those studies have also evaluated the financial performance of Islamic and conventional banks during the period of US Sub-prime crisis 2007. Given this disparity in mind, the results from those studies are different because of their individuality in selected time periods, sample size, analytical tools, as well as economic and cultural perspectives. However, in the case of Pakistan, it was not found of any study that has been conducted to compare the financial performance of Islamic and conventional banks during and after US Sub-prime crisis period from 2007 to 2012.

Methodology

Financial performance of a bank can be measured through various indexes provided by financial management theories. The uses of financial ratios, calculated through the bank's accounting statements, are found quite common in the past literature. Bashir (2001), Brown (2003), Booker (1983), Korobow et al. (1983), Putnam (1983), Akkas (1994), Meinster and Elyasiani (1988) and Spindler (1991) have used various financial ratios in evaluating bank's performance. Some studies, for example, Metwally (1997), Samad and Hassan (1999), Rosly and Abu Bakar (2003), Ayub et al. (2012), Ansari and Rehman (2011), Sehrish et al. (2012), Amjad et al. (2013), How et al. (2005), Abd-Majid and Kassim (2010), Daly et al. (2013) have presented ratio analysis and compare financial performance of Islamic and conventional banks in different countries. The ratio analysis is a quantitative study that involves method of calculating and interpreting financial ratios to assess banks' performance.

In order to compare the financial performance of Islamic and conventional banks during and after US Sub-prime crisis period of 2007-2012 in Pakistan, this study selects five Islamic banks (Meezan Bank Limited, Bank Islami Pakistan Limited, Dubai Islamic Bank (Pakistan) Limited, Albaraka Bank (Pakistan) Limited and Burj Bank Limited) and five conventional banks (Allied Bank Limited, Faysal Bank Limited, Habib Bank Limited, MCB Bank Limited and United Bank Limited). Thirteen financial ratios have been selected for the bank's performance.

These ratios are grouped under five broad categories namely (i) Profitability (ii) Liquidity (iii) Risk and Solvency (iv) Capital Adequacy and (v) Operational.

Profitability ratio

The profitability can be judged by the following criteria.

1. Return on average assets (ROAA) = Earnings after tax / Average assets
2. Return on average equity (ROAE) = Earnings after tax / Average equity

Profitability ratios measure the managerial efficiency that shows bank's overall efficiency and performance. Profitability ratios use margin analysis and indicate the return on assets, investments, deposits and equity. The higher profitability ratios are indicator of better performance of the bank. Sabi (1996), Samad and Hassan (1999) and Ansari and Rehman (2011) used ROAA and ROAE to evaluate the performance of Islamic and conventional banks. This study will also use these two profitability ratios to compare the financial performace of Islamic and conventional banks during and after US Sub-prime crisis in Pakistan.

Liquidity ratio

Liquidity ratios are used to determine the ability and capacity of a financial institution to meet its short-term debt obligations. Bank share liquidity risk because transaction deposits and saving accounts can be withdrawn by the customers at any time. Therefore, in the case of demand for withdrawal increased significantly over a short period of time, it may create a liquidity problem for the bank (Samad & Hassan, 1999).

Iqbal (2001) used current ratio as liquidity measure. Samad and Hassan (1999), Hasaan and Abdel-Hameed (2003) as well as Ansari and Rehman (2011) apply five liquidity ratios namely cash deposit ratio (CDR), loan deposit ratio (LDR), current ratio (CR), current asset ratio (CAR) and net loan/total asset ratio (NLTA) to measure financial performance of banks in Malaysia and Pakistan. As such, the current study tends to employ three liquidity ratios in order to compare the liquidity position of Islamic and conventional banking during and after US Sub-prime crisis in Pakistan.

1. Current Ratio (CR) = Cash and account with banks / Total deposits
2. Current Asset Ratio = Current asset / Total asset
3. Net Loan/ Total Asset Ratio (NLTA) = Net loans / Total assets

Capital adequacy ratio

Capital adequacy ratios are a measure of the amount of a bank's capital expressed as a percentage of its risk weighted credit exposures. It indicate the healthiness of financial institution to shock withstanding losses. Ansari and Rehman (2011), Iqbal (2001) and Hassan and Bashir (2003) use capital adequacy ratios in their studies. The current study focuses on two following capital ratios.

1. Capital Adequacy Ratio (CAR) = Tier 1 Capital + Tier 2 Capital / Risk-weighted Exposures
2. Equity/Liabilities ratio (ELR) = Average equity / Average liabilities

Risk and solvency ratio

The solvency ratio indicates whether a company's cash flow is sufficient to meet its short-term and long-term liabilities. A bank is solvent when the total value of its asset is greater than its liability (Samad & Hassan, 1999). Ansari and Rehman (2011) and Samad and Hassan (1999) apply risk and solvency ratios to their studies. The current study tends to employ loan deposit ratio (LDR) to measure the risk and solvency of Islamic and conventional banks and compare it during and after US Sub-prime crisis period from 2007 to 2012.

1. Loan Deposit Ratio (LDR) = Loans/ deposits

Operational ratio

Operational ratios typically used to analyze how efficiently and effectively a company is using its resources to generate sales and increase shareholder value. There are several ways of measuring operations of a bank. Iqbal (2001) used cost to income ratio to evaluate the operational efficiency of banks. Hassan and Bashir (2003) used thirteen operating ratios to evaluate operating efficiency of banks in their study. Some ratios used by Hassan and Bashir (2003) as operating ratios other researches used them as profitability ratios.

This study applies five operational ratios and focused them as profitability measures. The current study will measure these ratios and compare them to evaluate the financial performance of Islamic and conventional banks during and after US Sub-prime crisis.
1. Net Interest Margin = Net markup & interest income / Average assets
2. Net Interest Revenue / Average Assets
3. Other Operating Income/Average Assets = Other operating Income / Average Assets
4. Non-Interest Expense /Average Assets = Non-interest expenses / Average Assets
5. Cost/Income ratio

Research hypothesis

The current study examines four alternative hypotheses as presented as follows:

H_1: Islamic banks are more profitable than conventional banks during and after US Sub-prime crisis.

H_2: Islamic banks liquidity is higher than conventional banks during and after US Sub-prime crisis.

H_3: Islamic banks are less risky than conventional banks during and after US Sub-prime crisis.

H_4: Islamic banks operational efficiency is better than conventional banks during and after US Sub-prime crisis.

Data source and analysis

The Bank Scope Database is used to collect secondary data. The study accumulates income statements and balance sheets of five Islamic and five conventional banks for the period of 2007 to 2012 to calculate financial ratios. These ratios are computed using the ratio formulae. Cross-sectional analysis is applied to compare both performances of Islamic and conventional banks. Independent sample t-test is used to determine the significance of mean differences of these ratios between banks. The decision criterion is p-value. If p-value is less than 0.05, then it is in order to accept alternative hypotheses as proposed.

Results & Discussion

T-test is used to check the significance of mean differences between Islamic and conventional banks. In this section, the study examines and discusses the results gathered from independent sample *t*-test through using financial ratios of Islamic and conventional banks during and after US Sub-prime crisis for the period of 2007 to 2012.

Profitability

Profitability of banks is examined using two profitability measures, ROAA and ROAE. ROAA is the net earnings per unit of a given asset. The results show that the ROAA of Islamic banks for the period of 2007 to 2012 has been inconsistent in terms of trend. However, the conventional banks have experienced a fluctuating trend during this period but the results are of positive. An independent samples t-test is conducted to compare the scores for Islamic bank and conventional banks. There is a significant difference in scores for Islamic banks (M=-0.14, SD=0.54) and conventional banks (M=1.62, SD=0.20; t (12)=-7.434, p=.000). The magnitude of the differences in the means is quite big (eta squared=.85).

Table 1: T-test of Return on Average Assets (ROAA)

Bank	Ratios	2012	2011	2010	2009	2008	2007	Mean	S.D	t-value	p-value
IB	ROAA	0.41	0.46	-0.85	-0.69	-0.18	-0.02	-0.14	0.54	-7.434	.000**
CB	ROAA	1.50	1.67	1.54	1.58	1.45	2.02	1.62	0.20		

Note:** Significant at 5%

Table 2: T-test of Return on Average Equity (ROAE)

Bank	Ratios	2012	2011	2010	2009	2008	2007	Mean	S.D	t-value	p-value
IB	ROAE	5.43	7.86	-3.18	-2.75	-0.03	1.51	1.47	4.43	-7.748	.000**
CB	ROAE	15.96	17.44	16.07	17.31	14.87	21.23	17.14	2.21		

Note:** Significant at 5%

An independent samples t-test is conducted to compare the scores for Islamic bank and conventional banks. There is a significant difference in scores for Islamic banks (*M*=-0.14, *SD*=0.54) and conventional banks (*M*=1.62, *SD*=0.20; $t(12)=-7.748, p=.000$). The magnitude of the differences in the means is quite big (eta squared=.86). In all, since ROAA and ROAE for Islamic banks are lower than that of conventional banks, hence, *H1* is not supported.

Liquidity

The liquidity position of Islamic and conventional banks is examined through Current Ratio (CR), Current Asset Ratio (CAR), Net Loans to Total Asset Ratio and Loan Deposit Ratio. CR indicates the bank ability to meet its current liabilities. A higher value of CR shows that the bank has more liquid assets to pay-back to its depositors. The CAR shows the percentage of liquid assets with the bank and a higher CAR value is an indication of better liquidity position of the bank. Net loans to Total Assets Ratio (NL/TA) measures the total loans outstanding as a percentage of total assets. The higher value of NL/TA ratio indicates that a bank is loaned up and its liquidity is low. Loan-To-Deposit Ratio (LDR) is used to assess a bank's liquidity by dividing the banks total loans by its total deposits. The lower LDR value indicates that the bank is able to rely on its own deposits to make financing to its customers and has enough liquidity to cover any unforeseen fund requirements.

Table 3 indicates the current ratio for Islamic bank is greater compared with conventional bank. In terms of current ratio, the liquidity for Islamic banks is greater than that of conventional banks. The magnitude of the differences in the means is quite satisfactory (eta squared=.51).

Table 3: T-test of Current Ratio (CR)

Bank	Ratios	2012	2011	2010	2009	2008	2007	Mean	S.D	t-value	p-value
IB	CR	15.32	16.24	24.34	35.41	25.35	40.82	26.25	10.20	3.221	0.009**
CB	CR	11.48	11.42	12.14	13.96	12.26	14.94	12.70	1.432		

Note:** Significant at 5%

Table 4: T-test of Current Asset Ratio

Bank	Ratios	2012	2011	2010	2009	2008	2007	Mean	S.D	t-value	p-value
IB	Current Asset Ratio	14.50	14.35	18.08	21.70	14.58	21.27	17.41	3.45	4.355	0.001**
CB	Current Asset Ratio	10.00	9.81	10.41	12.05	10.48	12.75	10.92	1.20		

Note:** Significant at 5%

Table 4 indicates current asset ratio for both Islamic and conventional Islamic banks. There is a significant difference in scores for Islamic banks (M=17.41, SD=3.45) and conventional banks (M=10.92, SD=1.20; t(12)=4.355, p=.000). The magnitude of the differences in the means is satisfactory (eta squared=.65).

the lower this ratio is considered better. These results are consistent with those of Metwally (1997), Hassan (1999), Iqbal (2001) as well as Ansari and Rehman (2011). Therefore, the overall results support the hypothesis that Islamic banks are more liquid than conventional banks.

Table 5: T-test of Net Loan/ Total Asset Ratio (NL/TA)

Bank	Ratios	2012	2011	2010	2009	2008	2007	Mean	S.D	t-value	p-value
IB	NL/TA	39.84	38.99	41.72	41.34	48.58	43.17	42.27	3.42	-2.336	.042**
CB	NL/TA	40.05	43.12	49.74	52.54	60.16	55.67	50.21	7.59		

Note:** Significant at 5%

Table 5 indicates net loan/total asset ratio for both Islamic and conventional Islamic banks. There is a significant difference in scores for Islamic banks (M=42.27, SD=3.42) and conventional banks (M=50.21, SD=7.59; t(12)=2.336, p=.000). The magnitude of the differences in the means is satisfactory (eta squared=.35). The lower value of NL/TA ratio is in favour of Islamic banks as the lower this ratio is considered better.

Risk

Capital Adequacy of banks is measured using Equity/Liability (ELR) and Capital Adequacy Ratio (CAR). The ELR and CAR of Islamic banks shows a decreasing trend whereas the conventional banks show a mixed trend of increase and decrease during 2007 to 2012. The results of t-test show that there is a significant

Table 6: T-test of Loan Deposit Ratio (LDR)

Bank	Ratios	2012	2011	2010	2009	2008	2007	Mean	S.D	t-value	p-value
IB	LDR	52.38	52.24	56.38	64.94	82.84	110.28	69.84	22.90	-.127	0.902ns
CB	LDR	57.57	61.94	69.90	75.71	82.96	78.72	71.13	9.88		

Note:ns Not Significant

The results for LDR show a decreasing trend in both Islamic and conventional banks. Islamic bank average LDR ratio is 69.84 as compared with 71.13 for conventional banks. This mean difference between two banks is significant at 5% level of significance. The lower value of LDR and ratio is in favour of Islamic banks as

mean difference between these ratios at 5% level as p-value is less than 0.05. This means the Capital Adequacy Ratio of Islamic and conventional banks is significantly different. Hence, the hypothesis is accepted and can be concluded that Islamic banks are less risky than conventional banks.

Table 7: T-test of Equity/Liabilities Ratio (ELR)

Bank	Ratios	2012	2011	2010	2009	2008	2007	Mean	S.D	t-value	p-value
IB	ELR	9.99	13.73	16.21	25.07	34.10	52.18	25.21	15.81	2.403	0.037**
CB	ELR	9.26	9.65	9.69	9.68	9.40	10.45	9.68	0.41		

Note:** Significant at 5%

Table 8: T-test of Capital Adequacy Ratio (CAR)

Bank	Ratios	2012	2011	2010	2009	2008	2007	Mean	S.D	t-value	p-value
IB	CAR	16.41	22.00	21.42	25.90	29.16	34.46	24.89	6.37	4.273	0.002**
CB	CAR	15.20	14.47	13.98	13.94	11.75	11.45	13.46	1.51		

Note:** Significant at 5%

Operational efficiency

Operational ratios show how efficiently and effectively a company is using its resources to generate sales and increase shareholder value. Net Interest Margin (NIM) is one indicator of bank operational efficiency. The higher this ratio it is considered better. The results for NIM show that both Islamic and conventional banks experiencing fluctuating trends from 2007 to 2012. The average NIM ratio for conventional bank is 5.67 that slightly higher than Islamic bank ratio 5.23. The p-value is greater than 0.05, therefore, the mean difference between two banks is not statistically significant at 5% level of significance.

The Average Net Interest Revenue/Average Assets (NIR), Other Operating Income/Average Assets (OOI) and Non-interest Expense /Average Assets (NIE) ratios are 4.22, 0.96 and 5.65 for Islamic banks as compared with 4.81, 1.11 and 3.52 for conventional banks. Meanwhile, the Cost/Income Ratio (CIR) for Islamic bank is 104.38 that is higher than conventional bank at 48.24. The lower value of CIR is considered healthier for a bank performance. Therefore, the mean differences of these ratios are significant at 5% level. However, the overall results indicate that the majority of operational ratios NIM, NIR, OOI and CIR are not in favour of Islamic banks and do not support the hypothesis that Islamic banks operational efficiency is better than conventional banks.

Table 9: T-test of Net Interest Margin (NIM)

Bank	Ratios	2012	2011	2010	2009	2008	2007	Mean	S.D	t-value	p-value
IB	NIM	4.29	5.54	4.65	5.63	6.06	5.28	5.23	0.65	-1.378	0.198ns
CB	NIM	4.97	6.05	5.70	6.06	5.87	5.42	5.67	0.42		

Note:ns Not Significant

Table 10: T-test of Net Interest Revenue / Average Assets (NIR)

Bank	Ratios	2012	2011	2010	2009	2008	2007	Mean	S.D	t-value	p-value
IB	NIR	3.72	4.60	3.74	4.44	4.78	4.06	4.22	0.45	-2.550	0.029**
CB	NIR	4.22	5.11	4.83	5.14	4.98	4.63	4.81	0.35		

Note:** Significant at 5%

Table 11: T-test of Other Operating Income/Average Assets (OOI)

Bank	Ratios	2012	2011	2010	2009	2008	2007	Mean	S.D	t-value	p-value
IB	OOI	0.86	0.72	0.81	1.16	0.84	1.41	0.96	0.26	-1.421	0.186 ns
CB	OOI	1.09	1.05	1.14	1.18	1.14	1.12	1.11	0.04		

Note:ns Not Significant

Table 12: T-test of Non-Interest Expense /Average Assets (NIE)

Bank	Ratios	2012	2011	2010	2009	2008	2007	Mean	S.D	t-value	p-value
IB	NIE	3.97	4.54	6.04	6.98	6.22	6.16	5.65	1.14	4.473	0.001**
CB	NIE	3.09	3.50	3.53	3.75	3.58	3.68	3.52	0.23		

Note:** Significant at 5%

Table 13: T-test of Cost/Income Ratio (CIR)

Bank	Ratios	2012	2011	2010	2009	2008	2007	Mean	S.D	t-value	p-value
IB	CIR	84.7	82.7	123.7	108.07	107.2	104.3	101.8	15.5	8.015	0.000**
CB	CIR	54.3	53.8	49.62	45.01	44.49	42.24	48.24	5.10		

Note:** Significant at 5%

Conclusion, Implication and Future Study

In the light of empirical results and their comparative analysis, the study concludes that although the Islamic banks show less riskiness and higher liquidity, the conventional banks have excelled in terms of profitability performance and operational efficiency. This leads to the following conclusions: (1). Islamic banks are less profitable. ROAA and ROAE illustrate significant difference between the performances of Islamic and conventional banks. It is reported that Islamic banks are less profitable compared to conventional banks; (2). Islamic banks are more liquid than conventional banks in CR and current asset ratio measures. The results for net loan to Total Asset Ratio (NL/TA) and Loan Deposit Ratio (LDR) show a decreasing trend in both Islamic and conventional banks. LDR and NL/TA ratios are lower for Islamic banks, which mean that Islamic banks do not rely more on borrowed funds, and their percentage of assets tied up in loan is lower than conventional banks; (3). Islamic banks are less risky compared to their conventional counterparts. Equity/Liability (ELR) and Capital Adequacy Ratios (CAR) have been significant difference between the performances of the two banks. It is described that Islamic banks have a greater financial strength in servicing their debtors compared with conventional banks; (4). Islamic banks have poor operational efficiency. Explained in more detail, operational efficiency measures both Islamic and conventional banks do not show significant difference between their performances. The overall results indicate that the majority of operational ratios are not in favour of Islamic banks and do not support the hypothesis that Islamic banks operational efficiency is better than conventional banks. Therefore, the research concluded that the conventional banks perform more efficiently and profitably as compared to Islamic banks during and after US Sub-prime crisis period from 2007 to 2012.

In terms of practical implication, financial institutions play a vital role in economic development of any country. This role of financial institutions becomes more crucial in times of financial crisis. The recent US Sub-prime crisis that brought panic and turmoil to the United States economy has also left its footprints in other financial markets of the world. The situation was not much different for financial industry in Pakistan. The findings of this study have direct practical implications on the Islamic financial industry of Pakistan. The overall results show that Islamic banks remained more liquid and less risker than conventional banks during and after US Sub-prime crisis. In terms of profitability and operational efficiency, Islamic banks however, lagged behind the conventional banks.

The current results indicate that there is plenty of room for improvement in Islamic banking performance. Two considerations are of importance, namely profitability and operational efficiency of Islamic banks. In

terms of profitability, Islamic banks are called to improve their ROAA and ROAE in order to generate good performance to the banks. Taking necessary cautions when investing is a sort of recommendation, which could help the manager of Islamic banks to detect profitable business segment that contributes to the bank.

Besides, the management of Islamic banks is required to take necessary steps in order to improve their operational efficiency. For that, bank personnel should be able to utilize available resources to generate sales and increase shareholders value. Training and development can also play a vital role in increasing the financial performance of bank. Furthermore, efficient communication with clients on Islamic banking products and services can improve the overall operational efficiency of the bank.

Even though this study has contributed to the literature by comparing financial performance of Islamic and conventional banks in perspective of US Sub-prime crisis in Pakistan, it has also three main limitations. These limitations, however, offer direction for future researches in that area.

Firstly, this research is confined to five Islamic and conventional banks in Pakistan, besides its coverage that is limited up to 5 years given the investigated financial ratios for the period of 2007 to 2012. Future studies, hence, are expected to enlarge the sample size, which can produce more accurate empirical results. More banks can be considered in order to generalize the result of study on the whole Islamic and conventional banking industry in Pakistan.

Secondly, the study is limited to comparing financial performance of Islamic and conventional banks, based on thirteen financial ratios divided into four broad categories of profitability, risk and solvency, liquidity and capital adequacy. This creates an opportunity for future studies to undertake other financial ratios to compare the financial performance of Islamic and conventional banks.

Third, the research is limited to the banking industry of single country. Future studies can be conducted on Islamic and conventional banking industry of two or more countries and compare their financial performance during and after the US Sub-prime crisis period.

References

Abd-Majid, M. S., & Kassim, S. H. (2010). Impact of financial shocks on Islamic banks: Malaysian evidence during 1997 and 2007 financial crises. International Journal of Islamic and Middle Eastern Finance and Management, 3, 291-305.

Akkas, A. (1994). Relative efficiency of the conventional and Islamic banking system in financing investment. Dhaka University, Dhaka.

Amjad, M., Tahira, H., Akram, Y., and Usman, M. (2013). Performance of Islamic and Conventional Banks in Pakistan (2006-2011), A comparatives study. IOSR Journal of Business and Management (IOSR-JBM), 63-76.

Ansari, S., & Rehman, A. (2011). Comparative financial performance of existing Islamic banks and contemporary conventional banks in Pakistan. International Proceedings of Economics Development & Research, 22, 45-49.

Ayub, S., Sohail, N., & Mumtaz, R. (2012). Performance evaluation of Islamic and conventional banks in Pakistan. World Applied Sciences Journal, 20, 213-220.

Bader, M. K. I. (2008). Cost, revenue, and profit efficiency of Islamic versus conventional banks: international vidence using data envelopment analysis. Islamic Economic Studies, 15, 2, 23–76.

Bashir, M. (2001). Assessing the performance of Islamic banks: Some evidence from the Middle East. Islamic Economic Studies, 31-60.

Ben Naceur, S. (2003). The Determinants of

the Tunisian Banking Industry Profitability: Panel Evidence. Working papers, Universite Libre de Tunis.

Booker, I. (1983). Tracking banks from Afar: A risk monitoring. Federal Reserve Bank of Atlanta Economic Review, 36-41.

Brown, K. (2003). Islamic banking comparative analysis. The Arab Bank Review, 43-50.

Daly, S., Ghorbel Zouari, S., & Frikha, M. (2013). Islamic Financial Stability during the US Sub-prime crisis: Using from Data Panel. Journal of Behavioural Economics, Finance, Entrepreneurship, Accounting and Transport, 1, 1-12.

Darrat, A. F. (2002). The relative efficiency of interest-free monetary system: some empirical evidence. Quarterly Review of Economics and Finance, 42, 747- 64.

Dusuki, A. W. (2008). Understanding the objectives of Islamic banking: A survey of stakeholders' perspectives. International Journal of Islamic and Middle Eastern Finance and Management, 1, 132-148.

El-Gamal, M.A., Inanoglu, H. (2005). Inefficiency and heterogeneity in Turkish banking: 1990-2000. Journal of Applied Econometrics, 20, 641– 664.

Farooq, M., Zaheer, S. (2015). Are Islamic Banks More Resilient during Financial Panics?. IMF Working papers, Washington, DC.

Haque, A., Zaki, A., & Jamil, O. (2007). Islamic banking: Customer perception and its prospect on bank product. paper preseneted in Fifth International Islamic Finance Conference. Kuala Lumpur, Malaysia.

Hasaan, M., & Abdel-Hameed, M. B. (2003). Determinants of Islamic banking profitability. International Seminar on Islamic Wealth Creation, University of Durham, UK.

Hasan, M., & Dridi, J. (2010). The effects of the global crisis on Islamic and conventional banks: A comparative study. IMF Working papers, Washington, DC.

Hassan, M.K., & Bashir, A.H.M. (2003). Determinants of Islamic banking profitability. paper presented in The Economic Research Forum (ERF) 10th Annual Conference, Morocco.

Hassan, T., Mohamad, S., Bader, M.K.I. (2009). Efficiency of conventional versus Islamic banks: evidence from the Middle East. International Journal of Islamic and Middle Eastern Finance and Management, 2, 1, 46–65.

Henry, C., & Wilson, R. (2006), "The politics of Islamic finance", Islamic Econ, Vol. 19, pp. 45-50.

How, J. C., Karim, M. A., & Verhoeven, P. (2005). Islamic financing and bank risks: The case of Malaysia. Thunderbird International Business Review, 47, 75-94.

Iqbal, M. (2001). Islamic conventional banking in the 1990s: A comparative study. Islamic Economic Studies, 8, 1-28.

Johnes, J., Izzeldin, M., Pappas, V. (2013). A comparison of performance of Islamic and conventional banks 2004–2009. Journal of Economic Behavior & Organization, 103, S93-S107.

Kaleem, A. (2000). Modelling monetary stability under dual banking system: the case of Malaysia. International Journal of Islamic Financial Services, 2, 1, 21-42.

Kia, A. (2001). Interest-free and interest-bearing money demand: policy invariance and stability. working paper, Department of Economics, Emory University, Atlanda, GA.

Kia, A., & Darrat, A.F. (2003). Modelling

money demand under the profit-sharing banking scheme: evidence on policy invariance and long-run stability. paper presented at the ERF's 10th Annual Conference, Marrakech.

Korobow, Leon,   Stuhr, D. P. (1983). The relevance of peer groups in early warning analysis.Federal Reserve Bank, 27-34.

Malaysia World's Islamic Finance Marketplace. (2014). 2014 - A Landmark Year For Global Islamic Finance Industry. MIFC - Malaysia Internation Islamic Finance Center, Kuala Lumpur, Malaysia.

Meinster, D., & Elyasiani, E. (1988). The performance of foreign-owned, minority-owned and holding-company-owned banks in the U.S. Journal of Banking and Finance, 12, 293-314.

Memon, N. A. (2007). Islamic banking: Present and future challenges. Journal of Management and Social Sciences, 3, 1-20.

Metwally, M. (1997). Differences between the financial characteristics of interest-free banks and conventional banks. European Business Review, 97, 92-98.

Mirakhor, A. (2000). General Characteristics of an Islamic Economic System. Institute of Islamic Banking and Insurance, London.

Mokhtar, H.S.A., Abdullah, N.,   Al-Habshi, S. M. (2006). Efficiency of Islamic banking in Malaysia: a stochastic frontier approach. Journal of Economics Cooperation, 27, 2, 37–70.

Putnam, B. H. (1983). Concepts of financial monitoring. Bank of Atlanta Economic Review, 6-13.

Rosly, S. A., & Abu Bakar, M. A. (2003). Performance of Islamic and mainstream banks in Malaysia. International Journal of Social Economics, 30,1249-1265.

Sabi, M. (1996). Comparative analysis of foreign and domestic bank operation in Hungary. Journal of Comparative Economics, 12, 179-188.

Samad, A. (1999). Comparative efficiency of the Islamic bank Malaysia vis-à-vis conventional Banks. IIUM Journal of Economics and Management, 7, 1-25.

Samad, A., & Hassan, K. (1999). The performance of Malaysian Islamic bank during 1984-1997: An exploratory study. International Journal of Islamic Financial Services, 1, 1-13. SBP. (2013). Islamic Banking Bulletin. Islamic Banking Department State Bank of Pakistan (SBP), Karachi, India.

Sehrish, S., Saleem, F., Yasir, M., Shehzad, F., & Ahmed, K. (2012). Financial performance analysis of Islamic banks and conventional banks in Pakistan: A comparative study. Interdisciplinary Journal of Contemporary Research, 4, 186-200.

Siddiqi, M. (2006). Islamic banking and finance in theory and practice: A survey of state of the art. Islamic Economic Studies, 13, 1-48.

Spindler, A. (1991). The performance of Internationally Active Banks and Securities Firms Based on Conventional Measure of Competitiveness. Federal Reserve Bank, New York, USA.

Sufian, F., Noor, M. A., & Abdul Majid, M.-Z. (2008). The efficiency of Islamic banks: Empirical evidence from the MENA and Asian countries Islamic banking sectors. The Middle East Business and Economic Review, 1-20.