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Islamic financial system and conventional banking: A comparison

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ABSTRACT

The present study is conducted to find out the difference between the two areas of banking, that is, Islamic and conventional banking with respect to profitability, efficiency and liquidity. The secondary data from banks of each banking sector is taken for assessment. Ratio analysis and one sample *t*-test is applied to determine the characteristics of study respondents and regression analysis is applied to examine the difference in term of significant factors that influence customer trust of Islamic banks and commercial banks. The results of the study oppose many previous findings as the analysis shows that there is significant difference between the both types of banking for the variables under study. Moreover, influence of return on asset is more on customer trust for the study period (2013-2017) for the Islamic bank as compared to the conventional banking. The study also examines the significant factors that are important for growth of Islamic banking.

1. Introduction

Islam prohibits interest, so the Islamic banking system involves the products which do not include riba (interest) and which are according to Shari'ah principles, therefore it is also called the interest-free banking. The system is developing with the passage of time as the demand of interest-free products is also increasing. More and more customers are keen to bank in the Islamic way and many commercial banks are also introducing Islamic banking products separate from the conventional ones. Many non-Muslims also are the customers of Islamic banks. Islamic banking is also very popular in some non-Muslim countries. According to a report by the State Bank of Pakistan, there are more than 300 Islamic financial institutions operating in almost 75 countries (Anwar, 2010).

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Islamic banks are continuously growing and in numbers since 1971. "At a growth rate of 15 percent, a year, Islamic banking has $65 billion in assets. However, this is less than 1 percent of bank assets worldwide" (Wilson, 1995). The first Islamic bank was established in 1963 in Egypt while in Pakistan, the Islamic banking emerged in 1970s (Ariff, 1988). Islamic banking was re-launched in Pakistan in the year 2002. And now, many full-fledged Islamic banks in Pakistan are operating (such as Faysal bank, Meezan bank, and Bank Islami, Dubai Islamic Bank, etc.). Many conventional banks (such as Askari bank, Bank Alfalah, etc.) are having separate Islamic Banking branches. So, the overall banking system can be called as a dual banking system where Islamic and conventional banking is in operation side by side. The fourth annual Islamic Finance news poll was held in the year 2008 and State Bank of Pakistan was voted as at second number from the central banks all over the world that are taking interest in promoting Islamic banking.

The current global financial crisis is the result of the interest-based economies. The countries which were having very successful markets and were leading the whole world, were also hit with the crisis to such an extreme that now the interest rate is brought down nearly to zero. These countries are now taking keen interest in Islamic banking because it is not based on interest rate systems. Rather it is asset-based banking as compared to the conventional banking which is money based. A report by the State Bank of Pakistan confirms that the Islamic banking is not directly infected by the crisis (Anwar, 2012).

1.1. *Background of Islamic banking*

Islamic financial system is based upon a commerce law known as fiqh al-mu'amalat. This law considers issues of social justice, equity, and fairness in all business transactions, and promotes the entrepreneurship, protects the property rights and emphasizes the transparency of contractual obligations according to divine law of Allah and his last messenger Muhammad (PBUH). It is based on Shariah approved products which do not involve Riba (interest/usury), gharar (uncertainty), maisir (gambling), and non-halal (prohibited) activities. Although Islam has allowed the profits, but the pre-determined fix amount of returns is not allowed. Risk of loss and variability of profits must be faced to get the returns (Ariss, 2010).

1.2. *Modern Islamic banking*

The Islamic banking was started with the simple profit and loss sharing accounts, Islamic savings and investment products but it is now flourishing as the Islamic bonds (Sukuk) and hedge funds are introduced in the market, the main products of Islamic banks are now based on profit and loss sharing principle (Mudarabah), partnerships or joint ventures (Musharakah), Sales contract (Salam), leasing contract (Ijarah) and interest-free loans (Qard-e-Hasna), trade with markup (Murabaha).

1.3. *Different Islamic banking products that are commonly used in Pakistan*

Ijarah: This product is mostly used for the purchase of vehicles like cars, delivery vans, etc. the bank purchases the vehicle for the client and the client pays monthly rentals. When the cost of the vehicle plus the profit amount is paid by the client, the ownership is transferred to the client (Chhapra, Ahmed, Rehan, & Hussain, 2018).

Mudarabah: This product is used to finance the businesses. The bank provides the finances and the business provides the labor. If any loss is occurred, it is borne by the bank provided if there is no intent of the Mudarib of the loss (Gunputh, 2014).

Murabaha: It is a contract to sell the goods with a mark-up profit on the cost of the goods. The client instructs the bank to purchase the goods from a third party. The bank then sells the goods to the client on the price that includes cost plus the profit. This product is also used to finance the business (Shahid, Hassan, & Rizwan, 2015).

Musharakah: it is a partnership contract between the bank and the client in which both the partners invest their capital in a project in a proportion. They share profit or loss in a way that the loss is shared between the partners in the proportion they invested their capital, but the profit is shared in a predetermined proportion with mutual consensus (Mehtab, Zaheer, & Ali, 2015). This product is generally used in home loans (for construction and renovation purposes).

1.4. *Islamic and conventional banking*

Islamic banking is different from the conventional banking as it is interest free. Islamic banking operates under different principles and they have different risk profiles. The Islamic banks have regulations of two types; first is the government and the central bank that govern the conventional banks as well and the other is the Shariah Supervisory Board that approves the products of the Islamic banks and keeps a check over the implementation of the rules defined by the board. The central bank defines some rules which are specific to the Islamic banks. For example, minimum capital requirements are higher to establish an Islamic bank than the conventional banks. Islamic banks have to pay more taxes and registration costs because it is *asset-based* banking and the bank has to own the goods it further sells which eventually are paid by the client, but it increases the cost.

1.5. *The present study*

The present study is confined to the profitability, efficiency and liquidity comparison between two types of banking, that is, Islamic and conventional banking. For this purpose, two big Islamic banks, i.e. Meezan Bank Pakistan and bank Islami are taken in the study for the comparison of their performance with two large commercial banks of Pakistan, i.e. Standard Chartered Bank Pakistan and

MCB Bank during the year 2013–2017. The importance of this period is higher because it is the latest available data and it shows the performance of the banks during the recession (financial crisis) period. So, the results also depict the impact of this crisis on both types of banking. Also, the selected banks are the representative of the both the categories as they are most well known in their field.

Meezan bank is the first full-fledged Islamic bank in Pakistan and now it is placed at the top of Islamic banks. It is one of the fastest growing banks in Pakistan as the average growth of its assets is 55% a year. At the end of 2009, the amount of total deposits was more than Rs. 10 billion. The profits earned on the financings were more than Rs. 10 billion and the import/export business handled by the bank was more than Rs. 100 billion during the period of 2002–2009. The bank is equipped with the latest technology, up to data software and database systems. The bank has a rapidly growing network of branches which is in 204 in number at present. It became the first customer of Islamic insurance Takatful (Pak-Kuwait Takatful Company Limited) in 2005. The bank has adopted cautious approach to fight against the global recession. Meezan Bank has the vision of 'establishing Islamic banking as the banking of the first choice' (MBL, 2009). The bank has a very prudent and cost-efficient management and the bank has shown a consistent profitability (Shah, Baloch, Tahir, & Ali, 2017). The bank also deals with the charity fund mobilization under the Islamic concept of Qard-e-Hasna which is a loan without any interest or mark-up. Many public awareness seminars are also conducted by the bank about the Islamic banking (M.B.L., 2012).

BankIslami is one of the leading Banks in Pakistan with over 320 Branches Nationwide. It is the Second largest Islamic Bank. In 2016, BankIslami Signed an agreement with Akhuwat Foundation, an Interest free Micro-finance NGO (Islami, 2018).

Standard Chartered Bank Pakistan is the conventional bank selected for the comparison. It is an international bank that opened its first branch in 1863 in Karachi. The bank many awards such as the Best Foreign Bank in Pakistan, Best Foreign Exchange Provider and the Best Debt House in Pakistan. The growth rate of the deposits of the bank is 18% and the gross interest income increased by 14% in the year 2009. Loans and Advances reached to Rs. 101 billion. The bank has established certain committees to look after certain risks like liquidity, regulatory and credit risk, etc. (Ahmad, 2016).

MCB Bank Limited, is one of the oldest bank in Pakistan. The Bank has also been acknowledged though prestigious recognition and awards by Euromoney, World Finance, MMT, Asia Money, SAFA (SAARC), The Asset Triple A, Finance Asia, NFEH, CFA, Pakistan Centre of Philanthropy and The Asian Banker Bank (MCB Bank, 2018).

The research employs the following three variables taken from the study entitled 'Religious aspects of finance promises: Evidence from Pakistan' (Bukhari, Nawaz, Imam, & Qadri, 2014) of for comparison between the both types of banking:

1. Profitability.
2. Efficiency.
3. Liquidity.

Different measures of profitability performance such as Return on Asset (ROA), Return on Equity (ROE), Return on Deposits (ROD) and Operating Profit Margin (OPM) are taken from another study entitled 'profitability of Islamic banks: case of Malaysia' (Nawaz & Bardai, 2017). The efficiency is measured by the ratios; Operating Income to Assets (OIA) and Asset Turnover (ATO). The liquidity is measured through Cash to Assets (CTA) and Cash to Deposit (CTD). While regression analysis is conducted to predict the relationship strength of Cash to Deposits (CTD),the ratio that enhance the customer trust on bank (Samad & Hassan, 1999), to other measures of each banking group financial performance.

2. Literature review

There are many researches published recently which study the differences between the performance of Islamic and conventional banking in different parts of the world (such as Abdul-Majid, Saal, & Battisti 2010; Saif-Alyousfi, Saha, & Md-Rus, 2017; Samad, 2004). Different researchers used different technique to measure the variables. Ratio analysis is most frequently used technique in this area. Different researchers found different results. Here is the review of more than twenty researchers related to the performance of Islamic and conventional banking.

The ratio analysis technique is used in a study of comparison between Islamic and conventional banking in Pakistan by Awan (2009). The author calculated the performance and profitability ratios for the year 2006-2008 for the sample of six Islamic and Six conventional banks of the same size from Pakistan. The results from the analysis of ratios like ROA, ROD, ROE, EPS, Equity to Total Assets, Debt to Asset, Cash to Deposit ratio, etc. show that most of the probability ratios were negative for the conventional banks that show their low performance during the study period. But the profitability ratios calculated of Islamic banks showed positive results that show high returns to the bank and its shareholders. The assets for Islamic banks increased about 278% as compared to only 57% in conventional banks' assets during the period 2006-2008. The market share has increased from 2.5% to 5%. The ratio for non-performing loans for Islamic banks was far less than the conventional banks'. Also, the Islamic banks are having more provisions for the bad debts than the conventional banks. The results conclude that the overall efficiency of Islamic banks is higher than the conventional banks. The study also revealed that all these good results are not attained by exploiting the depositors or shareholders in fact the Islamic banks are paying more to it investors than the conventional banks. The cost of funds for Islamic banks was 6.5% as compared to 4.5% for the conventional banks as the banks share 50% of its profits on Modaraba basis to its depositors. Also, the volatility of profitability in Islamic banks is less as than the conventional banks in Pakistan. All the measure for Islamic banks showed positive results and the author suggests that the Islamic banking is the ultimate solution to the current financial crisis in the world.

A Pakistani researcher (Rashid, 2007) studied the performance of Islamic banks in Pakistan and compared the profitability, liquidity and solvency ratios of an Islamic Bank (Meezan Bank) and eight conventional banks in Pakistan and used three ratios for the profitability; Return on Assets, Return on Equity and Profit Expense Ratio. He found that the *conventional banks* are more profitable than the conventional ones and the Return on Asset ratio is almost the double for the conventional banks. But the research revealed a positive prospect for Islamic banks because the comparison between the profitability of the selected bank was significantly increased during the period 1999–2006. The authors suggest that the Islamic banks should develop a totally different market and accounting principles for making the Islamic financial system more widely acceptable. According to Rashid (2007), the major source of funds for a bank is the deposits from its customers. The conventional banks can forecast their future profits for a certain period because they receive (from the borrowers) and pay (to the depositors) a certain amount of interest which is fixed. But an interest-free bank (Islamic bank) does not have control over the cost of funds since there is no certainty about the profit which they will have to share with the depositors (that is called PLS rate). Moreover, the cost of writing and enforcing a contract is higher in Islamic banking operations. Also, the cost of operations is higher because of market and informational imperfections in the countries where Islamic banks are located.

A comparison between the both types of banking was done by three Malaysian researchers (Abdul-Majid, Nor, & Said, 2005) who compared the efficiency aspect of the Islamic conventional banking in Malaysia. They applied two types of statistical tests; parametric and non-parametric to evaluate the inefficiency of the two types of banks. They found that there is no significant statistical difference between the both, but Islamic banks' results were better than the conventional ones.

Another attempt for the profitability comparison, using empirical techniques, between the Islamic and conventional banks and finance companies in Malaysia was conducted by Rosly and Bakar (2003). The author calculates six profitability ratios to examine the discrepancy including Return on Assets and Return on Deposits ratios. They found that the ratio results are significantly higher for the Islamic banks than the mainstream interest-based banks. But the author says that this is because the overhead expenses for the Islamic banks are discounted which reduce their operating cost and Islamic banking has yet to modify its operations and exclude Riba totally from the Islamic banking system. They should enhance risk sharing in their functions to completely formulate the system conforming to the religious requirements. Also, this enhancement will ensure the corporate success. The author further suggests that the Islamic banks can enhance their profitability by using the concepts of economies of scale and economies of scope. This goal can be achieved by concentrating on the ethical issues.

As the Islamic banking system is under developed yet, so the above mentioned higher results for Islamic banks in Pakistan could be justified with the empirical findings of two writers (Demirgüç-Kunt & Huizinga, 2000) who explored that the financial systems which are under developed show more profitability but lower efficiency levels. These findings were revealed by selecting samples of banks from different developed and developing countries of the world. The authors calculated different profitability and efficiency ratios for the purpose mentioned above. The regression results showed that the greater bank development lowers the profits of the banks but improves the efficiency as the competition between the banks increase.

The similar findings were revealed in a study by Hassoune (2002) which was conducted to know that how the Islamic banks manage to smooth their profitability and their findings were based on the analysis of the ROE and ROA ratios' comparison. Islamic conventional banks from Gulf Cooperation Councils' region were compared. The results suggest that Islamic banks' profitability is more profitable than the conventional banks. Also, Islamic banks are found to be more credit-worthy and Islamic banks are less exposed to the cyclical nature of the Return on Assets. But this does not show the correct picture for the future strategies because the main reason for the higher ratios of profitability indicators is that the Muslims who deposited their money to the banks do not want any profit on their savings. But as the scale of operations increase in any Islamic bank, it is not necessary that all the new depositors also do not want any return on their investment. These depositors who do not demand returns are a privilege for the Islamic banks and if the whole economy is transformed according to the Islamic banking model as the cost of funds will increase. But still the profit and loss sharing principle smoothes the Returns on Assets by absorbing shocks and this reduces the systematic risk in the banking industry.

Siddiqui (2008) from Kuwait studied the performance of Islamic banks in Pakistan. He selected the top two Islamic banks in Pakistan, i.e. Meezan and Albaraka Islamic Bank and calculated Return on Assets and Return on Equity ratios for both. The results revealed that the profitability measures for these two banks were better than the average for the banking industry. Meezan bank showed even better results than the other one.

The profitability between the Islamic and conventional banks all over the world was compared by an examiner (Ariss, 2010) who built a sample of banks from thirteen countries of world. This paper concludes that the Islamic banks have more credit (portfolio) risk because its asset base is comprised of loans and advances mostly but there is no significant difference between the profitability of the two types of banking, i.e. the Islamic banks are not more profitable than the conventional banks. The reason is may be that Islamic banking is still as its evolutionary stage and does not have attained its full potential. The study also concluded that Islamic banks are showing less competition in the global financial markets. The study also concluded that the Islamic banks have shown more resilience to the financial crises around the world because they invest more in the real assets rather than the financial assets because in Shariah, there is a law that you cannot sell the things that you do not own.

Olson and Zoubi (2008) conducted a research to compare the profitability, efficiency, asset quality, liquidity and solvency of the both types of banks in the Gulf Cooperation Council region. They selected a sample of 141 conventional and 96 Islamic banks for the consideration. The paper also assesses the authenticity of the accounting ratios to compare the both types of banking and found them as good estimators. According to the findings, the accounting information is helpful not only in the developed economies but also in the developing ones. The ratios for both kinds of banks revealed almost the similar results and this is obvious because the

both types of banks operate in the same financial environment. Secondly the banking regulations are same for both. But the operational characteristics of the both types of banking are different. So, the results indicate that the Islamic banks are more profitable than the conventional banks, but they are less efficient. Also, the Islamic banks keep more cash with them because of the risk of withdrawals from the customers. Also, the Islamic banks rely more on the deposits for their capital requirements which enhances their risk.

A case study on the Bank Muamlat Indonesia (an Islamic bank) was conducted to compare its profitability, liquidity, risk and solvency with the conventional banks in Indonesia. The author (Suyanto, 2009) used the ratios for the stated purpose and applied different statistical tests on the obtained data. The results revealed that there is no significance difference among the profitability of the BMI and the interest-based banks, but the results showed that the liquidity is comparatively less in the Islamic bank. The rest of the variables were also not significantly different from the conventional banks.

A study to find the reasons why Islamic banking is growing with such a fast pace was conducted by Indriani (2008). She picked twenty-five banks of Indonesia from which 2 banks were full-fledged Islamic banks, half of them with the Islamic (interest free) financing and the rest with the interest-based financing. She calculated ratios to analyze the profitability performance of the both types of banks. Descriptive statistics and regression analysis techniques were used to analyze the data and it was found that the Islamic banks are prone to more profit rate risk. This is because the Islamic banks are more uncertain about the forthcoming returns on their assets (that is the loans which are disbursed by the bank). The author concluded that the "Net Profit Margin" is an important factor which influences the profit risk of the banks. The research concludes that the Islamic banks are showing better performance than the conventional ones. The credit risk and the profit rate risk have a strong influence on this performance. But the Islamic banking sector is developing and hence reducing the risks.

A case study on two Islamic banks in Sudan; Faisal Islamic Bank and Tadamon Islamic Bank was conducted by Bashir (1999) to examine the relationship between the size of the Islamic bank (independent variable) and the profitability and market valuation (dependent variables) of the Islamic banks. Ten years and 15-year data from the selected banks was taken to compare different ratios for example ROA, ROE and ROD, etc. was then analyzed by applying regression techniques to find out the performance of Islamic Banks in Sudan. The results indicate that the growth of the size (scale of operations) has a positive and strong relationship with the profitability of any bank. Also, the risks decrease, and efficiency increases with the increase in size. But the market valuation decreases with the increase in the scale of operations in Islamic banks.

The same author (Hassan & Bashir, 2003) conducted a research to find out the determinants of the profitability of the Islamic banks in the Middle East. Bank characteristics and the overall financial environment of the country where the bank operates are the major factors that affect the banks' performance. The performance indicators of Islamic banks from eight countries were observed for 6 years (1993–1998) and regression analysis was applied to test for the accuracy of the predictions. According to the study findings, "Controlling for macroeconomic environment, financial market structure, and taxation, the results indicate that high capital-to-asset and loan-to-asset ratios lead to higher profitability". The results also indicate that foreign-owned banks are more profitable than the local banks of Middle East. Everything else remaining constant, the implicit and explicit taxes affect the bank performance and profitability negatively and the relationship is significantly strong. The government policies have also a very strong influence on the performance of bank for example high reserve ratios decline the profitability because of the opportunity cost. The favorable macroeconomic conditions impact performance measures positively for example higher GDP per capita and higher inflation rates increase the profits significantly. The results also indicated that the stock markets and banks are complementary to each other. The appropriate capital ratios and loan portfolios play an empirical role in determining the performance of Islamic banks. Higher wages and salaries to the employees of the banks and investment in advanced technology also impact positively in the profitability performance of the Islamic banks.

A very earlier study on the profitability of the Islamic banks competing with the conventional interest-based banks was conducted with the supposition that the Islamic banks operations are based on the PLS (Profit and Loss sharing) principle. The banks make profit out of the loans disbursed to the entrepreneurs and the Islamic banks do not take interest on the loans instead they share a certain percentage of profit which will be earned on the project (in which the entrepreneur invests the borrowed money). The percentage of profit that the entrepreneur shares with the bank determines the profitability of the Islamic banks. The profits for conventional banks are determined simply by the interest rate that the bank is charging on the loan. The author (Nienhaus, 1983) defined his own financial model to analyze the profits. He concluded that the Islamic banks take almost the same amount of profit, from the borrowers, as the amount of interest that conventional banks are taking. This shows that there is no difference between the profitability of the Islamic and conventional banks.

Iqbal (2001) compared the performance of Islamic banks with a control group of conventional banks and used trend and ratio analysis techniques to analyze the data for the year 1990–1998. A sample of twelve Islamic and twelve conventional banks was taken from the same countries (mostly from the Middle East). He calculated different types of ratios and the profitability ratios included ROA and ROE. The growth rate for the Islamic banks was found to be shrinking because the industry was matured in the later years. But still the growth rate was 10% per annum which is remarkable because the statistically base year for measuring the growth rate (which is the previous year) becomes larger with the passage of time which reduces the rate of growth. The profitability was higher in the Islamic banks when the ratios data was compared for both types of banks and the ratios' values were according to the international benchmarks in Islamic banks. But it was concluded by the author that the Islamic banks are not cost effective in their operations. As the banks are financed by the depositors who share the risk with the bank in case of Islamic banking, so they expect more profit on their deposits and the prevailing return on assets ratio was still not enough. According to another study conducted by Haron and Ahmad (2000) in Malaysia on the effects of conventional interest rates and rate of profit on the deposits in

Islamic banks, customers are guided with the profit maximization theory). The study rejects the general perception that the Islamic banks are more liquid than the conventional banks.

Abdul-Majid, Saal, and Battisti (2009) studied the "the impact of Islamic banking on the cost efficiency and productivity change of Malaysian commercial banks" was conducted which concluded that the Islamic banks are less efficient than the conventional banks as they require more input to produce the desire outputs. The study used the analytical model called Stochastic Frontier Analysis (SFA) to analyze the data for Malaysian banks of both types during 1996–2002. The study revealed that the full-fledged Islamic banks are overcoming the problem of higher costs by using the technical change. The conventional banks with Islamic windows are not coming up this pace.

A study by Haron (1996), was conducted to find out the performance of Islamic banks operating in two different types of markets; Competitive and monopolistic. The author used different mathematical formulas to analyze the data of the banks. The results indicate that there is no difference between the profits of Islamic banks working in monopolist environment maximizes the shareholders' and firm's wealth but the banks working in competitive market maximize the profits of the depositors. So, a competitive market should be created in the economy by introducing new Islamic banks so that the monopolist Islamic banks cannot exploit the depositors. The study results also show that the PLS (profit and loss sharing) principle is beneficial for the depositors as well as for the bank.

Profit that the banks pay to its depositors is the cost of fund for them. A study by two Malaysians (Erusan and Ibrahim, 2010) examined the profit rate on the fixed deposits in the Islamic and conventional banks. Monthly data for the rate of returns on the deposits varying in time period from 3-month to 15-month was taken from the year 2002 to 2006. Independent sample *t*-test was used to test the hypothesis that whether there is any difference between the returns on deposits provided by both types of banks to its customers. The results show a significant difference among the profit rates. The conventional banks offer a significantly higher return to its customer as compared to the Islamic banks. The authors also applied One Way Analysis of Variance (ANOVA) to test that whether there is any difference between the returns from one month to another. The results for this test show that the returns in different months differ considerably for both the Islamic and conventional banks.

A study by Bader, Mohamad, Ariff, and Hassan (2008) revealed that both the Islamic and conventional banks are less efficient than their capacity to be and there is room for improvement for both of them. The data for the period of 1990–2005 was taken from 43 Islamic and 37 conventional banks. Data Envelopment Analysis model was used to analyze the efficiency of these banks and *t*-test was applied to find if there exists any difference. The results suggest that there is no significant difference in the efficiency of both Islamic and conventional counterparts. The author concludes that the Islamic banks can strive more to become more efficient and exceed form the conventional banks significantly.

An Australian researcher (Metwally, 1997) conducted a research to know about the differences in the Islamic and the conventional banking characteristics and applied the ratio analysis to the data collected from the sample of 15 Islamic and 15 conventional banks. By applying different models to the financial data the results were obtained that suggest that the Islamic banks are having more liquidity as their Cash to Deposit ratio was higher than the conventional banks. The statistical results showed that there is no difference in the profitability and efficiency of the Islamic and conventional banks.

Another study by Abdul-Majid et al. (2009) was aimed to compare the efficiency of Islamic and conventional banks. The Output Distance Function method was used to analyze the data for the inputs and outputs generated with that input by the bank for the time period of 1996–2002. Inputs were the equity, deposits and operating expenses while outputs were the loans and other earning assets. A sample of banks from 10 countries was selected. The results showed that the Islamic banks have 12.7% lower output for the given input. The author suggests that this lack of efficiency is not because of the insufficient management rather it is the result of the fact that the Islamic banks have to work according to Shariah principles. Although the writer suggests that the Islamic banking has more potential than the traditional banks to be sufficient.

3. Methodology

3.1. *Theoretical framework*

Here banking system is categorical variable with two categories:

- Conventional banking

The characteristics of the following three variables of the both categories is measured by one sample *t* test:

- Profitability.
- Efficiency.
- Liquidity.

The statistical model is built on the following equation to predict the differences of financial performance between Islamic banks (IB) and conventional banks (CB) with respect to CTD.

$$CTDIB = \alpha + \beta 1ROAIB + \beta 2ROEIB + \beta 3RODIB + \beta 4OPMIB + \beta 5OLAIB + \beta 6ATOIB + \beta 7CTAIB + e \quad (1)$$

$$CTDCB = \alpha + \beta 1ROACB + \beta 2ROECB + \beta 3RODCB + \beta 4OPMCB + \beta 5OLACB + \beta 6ATOCB + \beta 7CTACB + e \quad (2)$$

where dependent variables are:

CTD_{IB}=Cash to Deposit of Islamic banks;
CTD_{CB}=Cash to Deposit of conventional banks.

Independent variables are:

ROA_{IB}=Return on Asset of Islamic banks;
ROE_{IB}=Return on Equity of Islamic banks;
ROD_{IB}=Return on Deposits of Islamic banks;
OPM_{IB}=Operating Profit Margin of Islamic banks;
OIA_{IB}=Operating Income to Assets of Islamic banks;
ATO_{IB}=Asset Turnover of Islamic banks;
CTA_{IB}=Cash to Assets of Islamic banks;
ROA_{CB}=Return on Asset of conventional banks;
ROE_{CB}=Return on Equity of conventional banks;
ROD_{CB}=Return on Deposits of conventional banks;
OPM_{CB}=Operating Profit Margin of conventional banks;
OIA_{CB}=Operating Income to Assets of conventional banks;
ATO_{CB}=Asset Turnover of conventional banks;
CTA_{CB}=Cash to Assets of conventional banks
e=Error term; β=Beta.

3.2. *Problem statement*

Many researchers have concluded that the Islamic banks are more profitable and efficient than the conventional banks. Some authors believe that Islamic banks are suffering from excess liquidity. Is there a difference between the profitability, efficiency and liquidity of the Islamic Banks and the conventional banks?

3.3. *Hypothesis*

H_0. There is significant factor that influence on customer trust of both banking system.
i.e. Islamic banks and conventional banks of Pakistan.

H_1. There is no significant factor that influence on customer trust of both banking system.

i.e. Islamic banks and conventional banks of Pakistan.

3.4. *Financial ratios*

Profitability, Efficiency and Liquidity Ratios of two banks (Islamic and conventional) is calculated and then compared. The following ratios were calculated:

Return on Assets (ROA)=*Net Profit after Taxes+Interest Expense/Average Total Assets* ROA measures the success a bank has in using its assets to earn profit. Total assets are financed by the creditors, depositors and the shareholders. Interest (profit in the case of Islamic bank) is the income earned on the money provided by the creditors and depositors and net income is the profit available to be distributed to the shareholders. So, the interest expense is added bank to the net income because this expense is also the return earned on the assets by the business (banks in our case). The average of the total assets is taken to get a representative figure.

Return on Equity (ROE) = *Net Income/Average Common Stock Holders Equity*

This ratio is the relationship between the net income the common shareholders' investment in the bank. The common stockholders' equity includes the retained earnings and any additional paid in capital.

$$\text{Return on Deposit (ROD)} = \text{Net Income}/\text{Total Customer Deposits}$$

This is the relationship of the profits earned on the usage of money provided by the depositors.

$$\text{Operating Profit Margin} = \text{Operating Income}/\text{Mark-up Earned}$$

This ratio calculates the operating income generated on a single rupee of mark-up (return or interest) earned. The operating income is calculated by subtracting the operating expenses (i.e. Cost of Goods Sold and Selling, General and Administrative expenses).

$$\text{Operating Income to Assets} = \text{Operating Income}/\text{Total Assets}$$

This is the net return after provisions earned on the total (current and fixed) assets of the bank.

$$\text{Asset Turnover} = \text{Revenue}/\text{Total Assets}$$

The above ratio is calculated by taking the interest/markup earned in the enumerator and dividing it by the amount of total assets of a bank. This efficiency ratio tells the return earned by utilizing the fixed and currents assets of the bank.

$$\text{Cash to Assets} = \text{Cash}/\text{Total Assets}$$

This ratio calculates the proportion of cash in the assets of the bank. The higher amount of cash ensures that the bank has enough cash to pay its obligations on time, but it reduces the ability to generate profits as the cash in hand does not generate more cash on it.

$$\text{Cash to Deposits} = \text{Cash}/\text{Total Customer Deposits}$$

This ratio calculates the proportion of cash amount which the bank is having with it to the deposits. Deposits are the main source of finance for the banks especially for Islamic banks, but they are usually for the least time period. The maximum duration for a (say fixed deposit) is 15 months. So, it is very important to measure the bank's ability to pay the amount of deposits on time.

3.5. *Population and sample*

Our population contains all the Islamic banks (in the category of Islamic banking of out independent variable) and all the conventional banks (in the Conventional banking categorical variable "Banking System") in Pakistan. The following four banks are selected for the assessment.

Islamic bank: Meezan Pakistan Ltd and Bank Islami Limited, Pakistan.

Conventional bank: Standard Chartered Bank (Pakistan) Ltd and MCB Bank Limited, Pakistan.

Data type: Secondary data.

Data source: The data is collected from the financial statements of the above-mentioned banks. Most of the statements were taken from the official websites of these banks.

Tools and techniques:

Ratio analysis: Statistical test– one sample *t*-test to test the difference.
Software: (a) Microsoft Excel is used to calculate ratios and draw graphs. (b) SPSS is used to analyze the data.

4. Data analysis and discussion

Respondent's characteristics are an integral part of the study to categorize the sample banks (Fig. 1). In order to verify the sample of observation for respondents of Islamic banks and conventional banks, *t*-tests for all items were conducted (Samad & Hassan, 1999). The results show that all of the variables except ROA_{CB} and ROE_{IB} of both groups are significant at .05 level. In terms of the group mean of underlying items, the results indicate that the mean scores of convention banks are higher than that of the Islamic banks respondents.

Table 1 shows the characteristics of respondent by *t*-test respectively for both categories of banks, i.e. Islamic and conventional banks. Table 1 shows the financial ratios for respondents of this study during the study period 2013-2017.

Return on Assets (ROA) is the most frequently used measure of profitability. Fig. 2 represents the values of this measure during the study period for both types of bank (Islamic and conventional bank). This value was very high in the underlying year of our analysis (0.0363 or 3.63%) for the conventional bank which is Standard Chartered Bank in the study, but it declined with a very fast

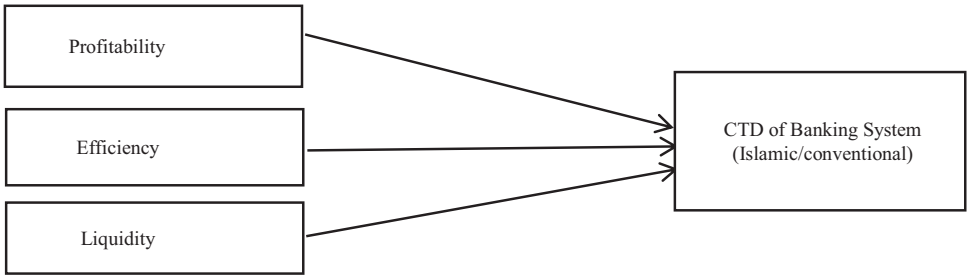

Fig. 1 – Research model.

Table 1 – Financial ratios: conventional banking (CB) vs Islamic banking (IB).

Ratios	Standard Chartered Bank					Meezan Bank				
	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
ROA	3.63%	2.32%	1.08%	0.24%	0.21%	1.37%	1.30%	1.43%	0.73%	0.83%
ROE	NA	14.75%	7.14%	1.63%	1.73%	13.87%	12.69%	16.88%	10.40%	11.16%
ROD	4.85%	3.64%	1.56%	0.36%	0.32%	1.84%	1.75%	1.77%	0.88%	1.02%
OPM	76.12%	60.23%	45.00%	30.47%	25.76%	50.01%	41.31%	36.86%	44.06%	35.76%
OIA	4.78%	3.56%	3.97%	2.68%	2.19%	2.38%	2.41%	2.51%	3.52%	2.91%
ATO	6.28%	5.91%	8.82%	8.81%	8.52%	4.76%	5.82%	6.81%	7.98%	8.13%
CTA	8.89%	9.26%	10.29%	8.59%	6.88%	12.90%	12.70%	8.40%	6.76%	6.75%
CTD	11.87%	14.53%	14.84%	13.03%	10.40%	17.38%	17.12%	10.34%	8.21%	8.36%
Ratios	MCB Bank					Bank Islami Limited				
	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
ROA	1.89%	2.13%	2.63%	2.78%	2.72%	0.21%	0.31%	−0.15%	0.39%	0.79%
ROE	17.65%	18.94%	23.21%	23.83%	23.09%	2.96%	4.56%	−1.75%	6.04%	113.4%
ROD	6.23%	7.68%	9.45%	8.20%	7.76%	51.00%	45.00%	45.00%	55.00%	66.47%
OPM	2.43%	3.52%	4.28%	3.73%	3.61%	49.30%	42.82%	42.05%	42.92%	39.74%
OIA	2.43%	3.52%	4.28%	3.73%	3.61%	−0.27%	−1.16%	0.00%	0.28%	0.20%
ATO	4.55%	5.70%	6.56%	6.04%	6.01%	7.24%	7.66%	0.05%	0.06%	0.05%
CTA	832.0%	7.45%	634.0%	529.0%	746.0%	0.47%	0.47%	0.47%	0.47%	0.47%
CTD	529.0%	778.0%	596.0%	516.0%	571.0%	66.47%	66.47%	66.47%	66.47%	66.47%

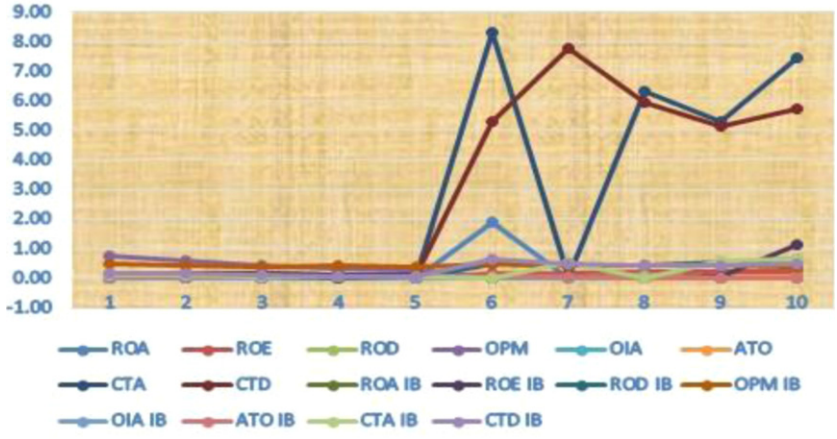

Fig. 2 – Trend of financial ratios: conventional banking (CB) vs Islamic banking (IB).

pace and came near 0. This huge decline was the result of global financial crises. But, as it is clear that the value of this ratio, for the Islamic banks, has not declined at that rate. In fact, it was slightly changes during the study period and then there was a slight decline. This shows that the Islamic banking was not hit by the financial crises to the extent it hit the conventional banks. Although it was not that much high in the starting period for the Islamic bank, but it remained almost constant during the period of study.

Return on Equity is the second measure of profitability which is higher for Islamic bank for the year 2015. The numerical data is shown in Table 1. The difference between the ROE is increasing with the passage of time and it was only 1.73% and 23.09% for the conventional banks in the last year but 11.16% and 113.4% for the Islamic bank. The value of ROE for the conventional bank is showing a prominent decline but this value is almost consistent for the Islamic bank. The returns to the shareholders are of two types, the dividends paid directly to them and the capital gains which benefit them by increasing the value of the shares. The conventional bank has not paid any cash or stock dividend during the study period, but the Islamic bank paid the stock dividends each year.

The third measure of profitability is Return on Deposit which measures the profits earned on the usage of the money provided by the depositors. This ratio is higher for the conventional bank in the beginning of the study period, but this ratio did not crossed the bank Islamic return on deposit value of 51.00% of 2013 to till 2017. In Islamic bank, it shows a consistency of returns. This is because, as it can be seen in the financial statements of the banks, the Net Income figure is decreasing with the passage of time while the amount of deposits is increasing in the commercial bank but in the Islamic bank's statements, Net Income figure is also increasing with the increase in the amount of deposits with time. The profit margin ratios depict the profitability position of the bank by taking the values from the income statement and checking for the differences of the profits of the banks relative to their sales each year.

Operating Profit Margin (explained in methodology part) is the profit margin ratio. It was highest for the very first year of analysis of conventional banks that is in 2013 but declined quickly till 2017. The variations are occurring in the values of this ratio for the Islamic bank but not to that extent as it declined in conventional banks. This is because the Net spread after provisions is less in relation to its returns earned on the financings for the conventional bank as compared to Islamic bank (although the denominator is increasing with the passage of time for both the banks). The proportion of bad debts and the provisions for them is higher in the conventional bank. There were no bad debts *directly written off* for the Islamic bank during the study period. This shows a great achievement of the Islamic banking.

The measure of efficiency is the Operating Income to Assets. From Table 1, the difference in value of this ratio of both types of banks is not different significantly. The efficiency of the Islamic banks is the same according to the values of operating income to assets ratio.

Another ratio calculated to measure the efficiency is the Assets Turnover. Table 1 and Fig. 3 show that the values of this ratio for both the banks are almost going side by side every year. This shows that the returns earned by utilizing their total assets are almost same for the Islamic and conventional bank.

The first of the two liquidity ratios are the Cash to Assets ratio. The conventional bank is showing the increasing trend in the years of study, but the Islamic bank is showing a continuous decline. This shows that the both types of banks are leaning toward having less cash with them and invest the cash in other profitable assets. This trend is healthy with the view that these assets generate profits as cash itself does not generate more cash. But it is risky also as the bank may fail to meet the currently maturing liabilities. But as far as the latest figure of the State Bank's regulation for this ratio is concerned, the liquidity is enough even in the later period because the requirement is 5%.

Another liquidity ratio is the Cash to Deposits ratio which calculates the amount of cash available to secure the depositors' money, that is, whether the bank is having enough cash to meet the deposit side liabilities or not. This ratio is carried out later to study its relationship with other variables of study to test hypothesis. As it is clear from Table 1 and Fig. 3 that the conventional banks was having more cash to deposits ratio variations but the variation in this ratio for the Islamic banks is low. This is because the Islamic banking products are developing with the passage of time and Islamic banks can now invest in more assets. But again, the risk is there to fail to meet the deposits liabilities.

The overall descriptive analysis of financial ratios shows that the financial position of Islamic banking remained almost constant during the period of study. In fact, it was slightly changes during the study period and then there was a slight decline. This shows that the Islamic banking was not hit by the financial crises to the extent it hit the conventional banks. Although financial indicator was not that much high for the Islamic bank as compared to conventional banks, but as the Islamic banking industry is developing with the passage of time, the indicators show that Islamic banks can perform better than the conventional ones as depicted in Fig. 3. Islamic bank is having fewer bad debts than the conventional bank during the study period 2013–2017. Islamic

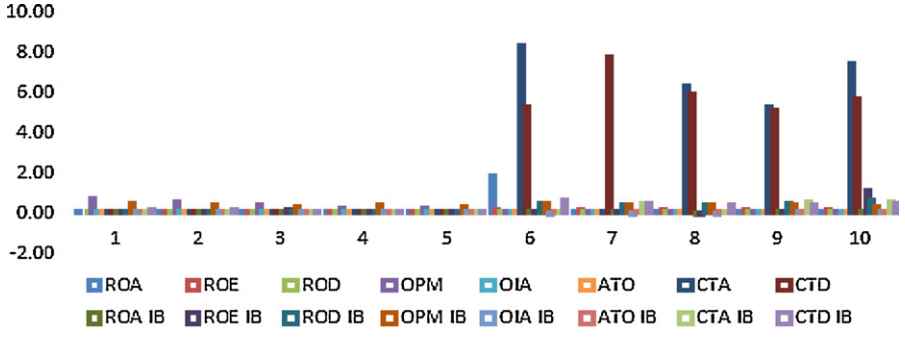

Fig. 3 – Comparison of conventional banking (CB) vs Islamic banking (IB).

Table 2 – Regression analysis for Islamic banking.

Model	R	R square	Adjusted R square	Std. error of the estimate	Durbin–Watson	Sig.
1	.997[a]	.994	.974	.0351083	2.885	.020[b]

[a] Predictors: (Constant), OPM IB, ATO IB, ROA IB, CTA IB, ROE IB, OIA IB, ROD IB.
[b] Dependent variable: CTD IB.

Table 3 – Regression analysis for conventional banking.

Model	R	R square	Adjusted R square	Std. error of the estimate	Durbin–Watson	Sig.
1	.996[a]	.991	.960	.6345943	2.870	.031[b]

[a] Predictors: (Constant), CTA, OIA, ATO, OPM, ROA, ROE, ROD.
[b] Dependent variable: CTD.

banking is not hit by the financial crisis to the extent the conventional banking is suffered as it is not interest based rather it is assets based. So, the profits are not declined with that pace. These finding are opposing the claim of Yudistira (2004).

4.1. *Regression model*

Many researches by different authors in different parts of the world concluded that Islamic banking is suffering from excess liquidity as described in section of literature review, to analysis and test the impact of big liquidity ratio, the ratio that enhance the customer trust on bank (Samad & Hassan, 1999), the hypothesis testing is done by regression.

Table 2 for Islamic bank regression for CTD shows the estimated *R* square is .994, indicating that 99.4% changes in CTD (dependent) is due to changing in independent variable are reliable. Moreover, the result shows there is significant variables that influences profitability with respect to CTD for Islamic banks. The Durbin–Watson test results are 2.885; which implies that there is no autocorrelation among the residuals from the regression investigation.

Table 3 for conventional bank regression for CTD shows the estimated *R* square is .991, indicating that 99.1% changes in CTD (dependent) is due to changing in independent variable are reliable. Moreover, the result shows there is significant variables that influences profitability with respect to CTD for conventional banks. The Durbin–Watson test results are 2.870; which implies that there is no autocorrelation among the residuals from the regression investigation.

Hence, Eq. (3) for B-coefficient of Islamic banks CTD shows that it is 8.183 for ROA_{IB} which suggests that increase in ROA_{IB} has positive big impact on dependent variable. The percent increase in ROA_{IB} leads to proportional increase in CTD of Islamic banks. Generally, the findings of this study are in parallel to a number of previous studies including Hassan and Bashir (2003) that indicate a correlation between profitability variable. While the relationship of ROA_{CB}, ROE_{CB}, ROD_{CB}, OPM_{CB}, ATO_{CB}, and CTA_{CB} is negative with CTD of conventional bank as depicted in Eq. (4). The finding of this study confirms the significant impact of financial indicators in evaluating a bank's performance (Samad, 2004).

$$CTDIB = \alpha + 8.183ROAIB - .053ROEIB + .863RODCB + .607OPMIB - 3.607OIAIB + 1.012ATOIB - .199CTAIB + e \quad (3)$$

$$CTDCB = \alpha - .182ROACB - 5.163ROECB - 35.63RODCB - 15.860OPMCB + 238.299OIACB - 152.04ATOCB - .299CTACB + e \quad (4)$$

We can argue that in case of Islamic banking, customer trust increases with increase in return on asset of Islamic banks while customer trust that is representative of CTD is proportionally increased with the net return after provisions earned on the total (current and fixed) assets of the conventional bank. The regression statistics show that there is a difference between the liquidity positions of both types of banking and impact of financial indicators is not the same on cash deposit of both category of banks (Madura, 2000).

5. Summary and conclusion

The present study is conducted to empirically test that whether there is any difference in the performance of the Islamic and conventional banking with respect to the customer deposit of each bank. The secondary data is taken from the annual reports of the conventional and Islamic banks. Most of the data was available on the official websites of the banks. The descriptive analysis of different profitability, efficiency and liquidity ratios is done for both categories of the banks. The analysis of the data accepts null

hypotheses that the Islamic banking and the conventional banking are different from each other in terms of their performance. But most of the performance measures are showing a positive trend for the Islamic banking. This shows a growth of the Islamic banking industry as the Islamic bank in our study is showing better performance than the conventional bank in the later years.

The future of Islamic banking seems brighter than the conventional banking as the results show that the Islamic banking is not suffered from the global financial crisis to the extent conventional banking is suffered. The results of this study are in parallel to study of Nawaz and Bardai (2017) and Bukhari et al. (2014), banking strategies can be built around the significance and importance of certain financial ratios. A future study based on a larger sample and more advanced statistical tools covering all financial ratios of Pakistan would have allowed us a more powerful analysis.

Conflict of interest

The authors have no affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; Membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), in the subject matter or materials discussed in this manuscript.

Appendix A. SPSS results of t-test

Variables	Mean difference	t	Sig. (2-tailed)
ROA	.2067400	1.105	.298
ROE	.1319700	4.313	.002
ROD	.0500520	4.667	.001
OPM	.2551427	2.981	.015
OIA	.0347427	13.386	.000
ATO	.0672045	14.399	.000
CTA	2.7923600	2.469	.036
CTD	3.0546700	3.054	.014
ROA IB	.0072100	4.263	.002
ROE IB	.1902700	1.788	.107
ROD IB	.2697300	3.096	.013
OPM IB	.4248300	29.100	.000
OIA IB	.0127744	2.481	.035
ATO IB	.0485553	4.432	.002
CTA IB	.2271645	2.781	.021
CTD IB	.3191900	4.646	.001

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