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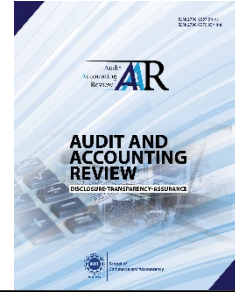|	
Title:	**Impact of Global Financial Crisis on Islamic Banks of Pakistan**
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Impact of Global Financial Crisis on Islamic Banks of Pakistan

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Abstract

This study aims to analyze the financial performance of Islamic banks, which remains a widely discussed topic after the latter's development. Literature review suggests that Islamic banks outperformed conventional banks during the global financial crisis of 2008. The collected data supports the premise that the crisis of 2008 had no impact on Islamic banks. This empirical study tests this hypothesis and compares the ratios and stock prices between pre, During and post crisis time period of full-fledged Islamic banks operating in Pakistan by conducting ratio analysis. It includes three study periods namely pre-crisis (2006), during crisis (2007-2009), and post-crisis (2010-2020). The findings states that the ratios and stock prices remain unchanged during the crisis. Through the application of Univariate Analysis of Variance (UAV), this study asserts that the asset turnover ratios of banks and stock return remained unaffected by the crisis. In contrast, Islamic banks profitability, efficiency, risk management, liquidity, asset quality, and Earning per share ratios were extensively affected by the said crisis.

Keywords: full-fledge Islamic banks, global financial crisis, Islamic banks, Pakistan, ratio analysis

Introduction

Financial institutions, especially banks, are an essential part of the economic activity of any country. Their stability and performance indicate the economy's well-being. The liquidity crunch initiated by banks might result in an economic crisis countrywide and at times, worldwide. The banking industry has already survived many financial crises. The banking history dates back to the 1600s, whereas the first financial crisis happened in 1720. The banking history is full of bank runs, which ultimately caused ripple

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effects or systematic risks and thus, resulted in the collision of economies and countries.

Bank runs and financial crises are a paradox. Bank runs are the reason for causing financial crises and financial crisis causes bank runs. The cause of financial crisis 2008 is assumed to be subprime mortgages (Shafique et al., 2012). The investments and large speculative positions by big banks in mortgages and the sharp fall of house prices in the USA was attributed to the crisis. Many big names, such as Lehman Brothers and Bear Stearns, faced liquidity crises and ultimately went bankrupt. The conventional financial system has faced such a crisis repeatedly. In opposition to this system, Muslim economists developed the Islamic financial system (IFS) based on the Sharia'ah principles.

The development of the Islamic banking system is an important milestone in finance as it divides the banking consumers into two channels, which differ in their basic system. The conventional bank system largely relies on borrowers and creditors with interest as the basic unit. On the other hand, Islamic banking is a contract-based system, which promotes real asset financing and trade.

The global financial crisis 2008 had a severe impact on financial institutions all over the world. The conventional financial industry lost more than $ 1 trillion from bad debts in this crisis (Reuters, 2009). On contrary, the growth rate of Islamic banks during crisis was positive (Islamic Financial Services Industry Report, 2013). The preliminary literature showed that Islamic banks are less prone to crises and the global financial crisis 2008 had no significant impact on Islamic financial institutions. This study tested whether the financial and stock performance of Islamic banks in Pakistan remained unchanged during the crisis. In Pakistan (Bilal &Amin, 2015) conducted a study in which they selected conventional and Islamic banks of Pakistan as a sample and checked their financial performance during and after the subprime crisis. They concluded that the recent US subprime crisis that hit the US economy so badly had also left its signs on the overall world's financial market. The situation was quite similar for the financial industry in Pakistan.

Distinguishing Features of Islamic Banks

Islamic banking is conceptually and operationally different from conventional banking. Islamic finance relies on the Sharia'ah rules and

regulations, which pay immense importance to justice, ethics, and moral values. Khan (1990) claimed that the Islamic financial system (IFS) is beneficial for both Muslim and Non-Muslim participants, and largely relies on ethics. The differentiating features of Islamic banks are:

No Riba

Riba could be defined as excess interest on lent money, which is charged without consideration of risk. Instead of interest, Islam believes in profit and loss sharing.

No Gharar

Islamic banking is totally contract based banking system. Any uncertainty in the elements of contract is referred as 'gharar'. When Islamic bank made a contract with any party (for example sale of car on zero% markup) then price of that contract should be known by both parties and any other conditions relevant to that contract should be known by both parties. The prohibition of Gharar means that Islamic banks cannot invest in hedging instruments, derivatives market, and speculative activities as they come under the prohibited category. Zehri et al. (2012) claimed that prohibition of dealing in derivatives and speculative activities upon Islamic banks protected them from declining during the global financial crisis.

Risk Sharing

Instead of risk transfer, Islamic banking system believes in risk sharing. Islam announces return prohibited without bearing risk for that return. This promotes real economic activity and trade and discourages buying and selling of the conventional insurance.

Contract Based Financing

All Islamic financial products are contract-based and promote profit, loss, and risk sharing. The contracts are on real assets, and the banks and customers share an equity relationship and partnership of debtor-creditor. This asset-backed financing promotes real economic growth, overall prosperity, and better living standards for all participants.

Most of the previous literature focuses on the comparison between conventional and Islamic banks. The focus of this current study is on Islamic banks only. Current study compares the performance of Islamic banks between different time periods (pre, during and post) crisis period. The

previous literature compared the banks performance through different selected periods. Over the time, this trend analysis would help to capture the performance of Islamic banks while comparing them with their own performance, instead of comparing them with already grown conventional banking system. As a result, this study contributes to the financial literature, provides data for later time period to analyze the overall trend of financial and stock performance of the Islamic banks in Pakistan.

In previous studies, most of the researchers compare performance of conventional banks and Islamic banks during a crisis. This empirical research aims to study the impact of crisis on full-fledged Islamic banks of Pakistan. A significant point studied in this research was the performance of Islamic banks during the crisis. Most of the researchers used ANOVA and T-tests for measuring the performance of both banks however, in this study we have applied Univariate Analysis of Variance (UAV) in order to test the performance of Islamic banks (pre, during, and post crisis periods).

Research Questions

- Do the crisis of 2008 had any effect on the profitability ratios of Pakistan's Islamic banks?
- Do the crisis of 2008 had any effect on the efficiency ratios of Pakistan's Islamic banks?
- Do the crisis of 2008 had any effect on the risk indicators ratios of Pakistan's Islamic banks?
- Do the crisis of 2008 had any effect on the liquidity ratios of Pakistan's Islamic banks?
- Do the crisis of 2008 had any effect on the asset quality ratio of Pakistan's Islamic banks?
- Do the crisis of 2008 had any effect on the returns of Pakistan's Islamic banks?

Theoretical Framework

The foundation of this research study is the performance evaluation theory. This theory explains that performance of any organization depends on some essential performance indicators, KPIs (Key performance indicators). These key performance indicators might be different for every industry. Therefore, the objective of this paper is to determine the financial performance of Islamic banks of Pakistan and impact of financial crisis (2008) on the selected Islamic banks. The instruments, which would help in

measuring the financial performance has its roots laid in the performance evaluation theory. In case of financial performance, the key performance indicators are accounting ratios that are discussed above in the introduction. A very wide application of these accounting ratios could be seen in CAMELS rating system[†]. Primarily, this system was used to measure the performance of banks and their ability to survive in the longer run.

The performance indicators also include stock price returns. This research also calculates stock returns to analyze the impact of crisis on the stock-market prices.

Literature Review

Zehriet al. (2012) examined the effect of crises on Islamic and conventional banks using ratio analysis. In their study, they proved that accounting ratios are good indicator of performance which evaluated the performance of Islamic and conventional banks. Their comparative study showed that Islamic banks outperformed conventional banks during crisis. According to Zehriet al point of view Islamic banks are performing well even in crisis as compare to conventional banks because Islamic banks follow Islamic system in which there is no concept of interest and include profit and loss sharing of both parties.

Imran et al. (2021) observed the impact of operational risk and efficiency at the financial performance of Pakistan's leading Islamic banks. Total Operating Cost was divided by Total Operating Income (BOPO), and Performance was determined by dividing Residual Interest Profit by the Income Product Rate (NIM). They employed ROA and ROE ratios to evaluate financial health and data from Islamic bank annual reports. The technique employed in this study was regression analysis. The purpose of this current research was to investigate the influence of risk management on Islamic banks' earnings in Pakistan. Secondly, to assess the significance of this Risk influence. Hence, they concluded that both operational and theoretical aspects are important.

Majeed and Zainab (2021) evaluated the financial performance of Islamic and conventional banks in Pakistan from 2008-2019, i.e. during and

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[†] CAMELS are an acronym for Capital adequacy, Assets, Management capability, Earnings, Liquidity, and Sensitivity. This research study does not apply CAMELS ratio but for the reference of application of ratios in performance evaluation, the concept is mentioned here.

after the financial crisis, to see how Islamic banks perform in comparison with conventional banks. Financial ratio analysis (FRA) is a tool which they applied to evaluate the performance of the banks. In certain areas, this study differs from previous researches conducted in Pakistan. For beginning, the study used most comprehensive data obtainable for the years 2008-2019. Secondly, a larger sample of banks was used, along with different dataset of banks (like the top ten banks). Lastly, five full fledge Islamic banks were compare to five conventional banks that also provide Islamic Windows They came to the conclusion that Islamic banks are less risky and liquid.

Hussien et al. (2019) examined the Gulf Cooperation Council region's Islamic banks' (IBs') profitability performance during the global financial crisis(2008). Results showed that during the crisis, factors such as capital sufficiency, credit risk, financial risk, operational efficiency, liquidity, bank size, gross domestic product, growth rate of the money supply, development of the banking industry, and inflation rate had a significant impact on how efficiently GCC IBs performed.

Salih (2019) compared the performance of Islamic banks with conventional banks during 2008 financial crisis. This paper examines the performance of both types of banks before, during, and after the 2008 financial crisis while covering four different financial performance measures, namely, efficiency, profitability, liquidity, and solvency. The article made a note of the GCC governments' direct participation in the financial crash in this context, as well as the flaws in the institutional structure of Islamic banks that hindered their performance during the crisis.

Ibrahim (2020) evaluated three profitability indicators—return on total revenue, return on assets, and return on equity. This article empirically assessed the profitability of the four Islamic banks that were operational in the UAE between 2004-2009. The results demonstrated that, despite the financial crisis' beginning on the third quarter of 2007, its effects on Islamic banks' profitability were pronounced in the years 2008-2009, when there was a considerable fall in all financial metrics studied.

Shafique et al. (2012) observed that speculative activities and careless lending transactions resulted in global financial crisis. Shafique et al. (2012) reviewed the existing literature on Islamic bank's performance during crisis. In their descriptive study, they mentioned different causes of 2008 financial crisis while calling sub-prime mortgages the primary cause behind the

crisis. They concluded that as Islamic banks were based on the Sharia'ah principles, they were better in terms of product portfolio and had ability to survive crisis as they were liquid with less debt inclusion in their framework.

Parashar (2010) measured five performance indicators for selected six (6) conventional and six (6) Islamic banks. The period extends from 2006-2009. They concluded that Islamic banks outperformed conventional banks in terms of return on average assets and liquidity whereas conventional banks performed better in terms of capital ratio, leverage, and return on average equity. The overall four-year performance of Islamic banks was found to be better than conventional banks. Almanaseer (2014) used data from twenty-four (24) Islamic banks of Gulf corporation council countries over the period 2005-2012. The study concluded that crisis did not has a significant impact on the profitability of the Islamic banks and the size of bank and equity capital were important factors affecting the profitability of any type of bank.

The Kingdom of Saudi Arabia is an important participant of the Gulf corporation council. Tabash and Dhankar (2014) evaluated the impact of 2008 crisis on the stability of Islamic banks in the KSA. The researchers using ratio analysis performed on full-fledged Islamic banks from 2005-2010 and divided the total period into three sub-periods before-crisis, during crisis, and after crisis. The study found that there was no statistically significant difference in ratios of all three sub-periods indicating that the crisis had no impact on the stability of Islamic banks and they outperformed conventional banks.

Toumi et al. (2011) performed ratio analysis on 50 Islamic and 59 conventional banks from 18 different countries from the period 2004 - 2009. The study concluded that net profit increases for Islamic banks whereas it decreases for conventional system during the crisis. The findings of Rashwan (2010) also supported the hypothesis that Islamic banks performed better as compared to the conventional banks before crisis.

Abdulle and Kassim (2012) observed six Islamic and nine conventional banks in Malaysia. By comparing before, during, and after crisis ratios, the authors concluded that Islamic banks hold more liquid assets and are less likely to suffer from liquidity risk. During crisis both banking systems were affected by the crisis in a similar manner in terms of profitability and credit

risk but the Islamic system performs slightly better than conventional system. The results were supported by empirical study of Aktas et al. (2013) perform analysis on Turkish market using trend analysis for conventional and Islamic banks from 2006 - 2011. The study concludes that Islamic banks were more stable in terms of profitability, capital adequacy, and liquidity.

Sehrish et al. (2012) compared the financial performance of conventional and Islamic banks from 2007-2011 and concluded that Islamic banks are safer in terms of liquidity but less efficient in terms of expense management. The findings were similar with the research study of Siddiqui (2008) and Khan et al. (2017). In contrast, Abbas et al. (2016) pointed out that the performance of Islamic banks was comparatively low in the crisis.

Research Objectives

The aim of this current research study is to analyze the impact of 2008 financial crisis on Islamic banks of Pakistan. Therefore, the objectives are summarized as follows:

- Determining the performance of profitability ratio among Islamic banks and analyzing the difference between Profitability ratios of full fledge Islamic banks of Pakistan for pre, during, and post crisis period.
- Determining the performance of efficiency ratio among Islamic banks and analyzing the difference between efficiency ratios of full fledge Islamic banks of Pakistan for pre, during, and post crisis period.
- Determining the performance of risk indicator ratios among Islamic banks and analyzing the difference between risk indicators ratios of full fledge Islamic banks of Pakistan for pre, during, and post crisis period.
- Determining the performance of liquidity ratio among Islamic banks and analyzing the difference between liquidity ratios of full fledge Islamic banks of Pakistan for pre, during, and post crisis period.
- Determining the performance of asset quality ratio among Islamic banks and analyzing the difference between asset quality ratios of full fledge Islamic banks of Pakistan for pre, during, and post crisis period.
- Determining the performance of return ratio among Islamic banks and analyzing the difference between return ratios of full fledge Islamic banks of Pakistan for pre, during, and post crisis period.

Conceptual Framework
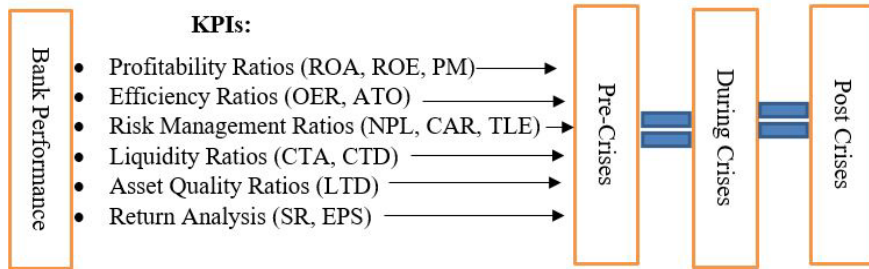
Hypotheses

Referring to the current study, the null hypotheses state that ratios of three sub-periods, pre-crisis, during a crisis, and post-crisis were not significantly different. Therefore, the research objectives following alternative hypothesis are stated below:

Ha 1: There is a significant difference in the average profitability ratios of Pakistan's Islamic Banks between at least two periods from (pre, during and post) crisis.

Ha 2: There is a significant difference in the average efficiency ratios of Pakistan's Islamic Banks between at least two periods from (pre, during and post) crisis

Ha 3: There is a significant difference in the average risk indicator ratios of Pakistan's Islamic Banks between at least two periods from (pre, during and post) crisis

Ha 4: There is a significant difference in the average liquidity ratios of Pakistan's Islamic Banks between at least two periods from (pre, during and post) crisis

Ha 5: There is a significant difference in the average Asset quality ratio of Pakistan's Islamic Banks between at least two periods from (pre, during and post) crisis

Ha 6: There is a significant difference in the average return ratios *of* Pakistan's Islamic Banks between at least two periods from (pre, during and post) crisis

Research Methodology

This empirical research studies the impact of 2008 crisis on Islamic banks of Pakistan.

Population, Sample, and Time Period

The selected sample consists of three full-fledged Islamic banks of Pakistan from target population of all four Islamic banks of the country. The window model-based banks and Islamic subsidiaries of conventional banks which are omitted as per our criteria for the analysis. To analyze the impact of global crisis on Islamic banks operating on purely Islamic Sharia'ah principles and basically full-fledged Islamic bank is the selection criteria in our sample. The current study skipped the 4th bank (AL BARAKA) because the financial data of this bank was not available on internet as it became operational during 2009 and provided their annual report on internet in 2009 and their pre and during crisis period data was missing. So that's why we selected three Islamic banks (Meezan, Islami, and Dubai Islamic Bank) which were full-fledged Islamic and they became operational before the crisis period from 2006. The data source were annual financial reports from websites of respective banks. The period extends from 2006-2020.

Concept, Construct, and Variables

The concept here is to measure the performance of banks is ratio and return analysis. The variables from ratio and return analysis are described in Table 1.

Data and Model

Tabash and Dhankar (2014) applied ANOVA on ratios of three different periods consisting of pre-crisis, during crisis, and post-crisis while calculating its impact on the Islamic banks of the kingdom of Saudia Arabia. In this study we have applied univariate analysis of Variance model at 5% alpha on Islamic banks of Pakistan l which would help in determining the crisis's impact. The websites of banks were helpful as all financial data was available in standard format in the form of financial statements. As a first step, the ratios were calculated for sampled banks using MS EXCEL. Secondly, SPSS software was used for hypothesis testing. The test applied was univariate Analysis of Variance. This statistical method helps in comparing means of more than two groups. In simple words, this test would identify whether the three sub-periods (pre-crisis, during crisis, and post-

crisis) vary according to their mean values. The ratios calculated include profitability, efficiency, risk management, and liquidity ratios. The return analysis included stock price returns and earnings per share. The variables are discussed in Table 1. along with their formulas.

Analysis and Discussion of Results

The Univariate Analysis of Variance was applied on three periods i.e. pre-crisis 2006, during crisis 2007-09, and post-crisis 2010-20. The results are discussed below.

Table 1

Study Variables and their Formulas

Ratio Group	Proxy	Abbreviation	Operational Definition
Profitability Ratios	Return on assets	ROA	$\dfrac{net\ profit}{total\ assets}$
	Return on equity	ROE	$\dfrac{net\ profit}{total\ equity}$
	Profit Margin	PM	$\dfrac{net\ income}{revenue}$
Efficiency Ratios	Operating expense ratio	OER	$\dfrac{total\ operating\ expense}{total\ revenue}$
	Asset turnover	ATO	$\dfrac{net\ sales}{total\ assets}$
Risk Indicators	Non-performing loans	NPL	$\dfrac{non-performing\ loans}{total\ loans}$
	Capital adequacy	CAR	$\dfrac{capital\ tier\ 1 + capital\ tier\ 2}{risk\ weighted\ assets}$
	Leverage	TLE	$\dfrac{total\ liability}{tota\ equity}$
Liquidity Ratios	Current assets ratio	CTA	$\dfrac{current\ assets}{current\ liabilities}$
	Cash to deposits	CTD	$\dfrac{cash}{total\ customer\ deposits}$

Ratio Group	Proxy	Abbreviation	Operational Definition
Asset Quality Ratios	Loans to deposits	LTD	$\dfrac{loans\ and\ advances}{customer\ deposits}$
Return Analysis	Stock Return	SR	$\dfrac{ending\ price\ -\ begining\ price}{begining\ price}$
	Earnings per share	EPS	$\dfrac{net\ income}{no.\ of\ outstanding\ shares}$

Profitability Ratios

Profitability is usually considered the first measure of performance for any institution. It indicates how efficiently the bank is using its assets to generate income.

Return on Assets

This ratio is an important profitability measure as it compares returns generated from bank's assets. The higher the ROA, the better is the asset utilization and greater bank's profitability.

Table 2 shows the comparison between Pakistan's Islamic banks selected for the current study, Meezan Bank's return on asset ratio was 1.35% and 2.76% higher as compared to the other Islamic Bank, and Dubai Islamic Bank respectively. Bank Islami's Return on Asset was 1.414% higher as compared to Dubai Islamic Bank, as per the result there was a significant difference among the mean ROA of three Banks during the study period at 0.05level.

Table 3 shows the comparison of Pakistan's Islamic Bank' return on asset ratios with respect to different crises periods (pre-crises, during crises, and post crises). Return on asset of banks during crises was 1.184% higher as compared to the pre-crises period and 746% lower if compared to the post crises period. Increased return on asset means that Islamic banks efficiently used their asset in order to generate profit during crisis period as compare to the pre-crisis. The significant column showed that there was significant difference between the return on asset of Pakistan's Islamic banks by comparing all three crises periods at 0.05 level. Therefore, our findings reject the null hypothesis of equality for return on asset ratios of Islamic banks of Pakistan.

Table 2

Bank Wise Comparison on the Basis of Return on Asset

(I) Banks Name	(J) Banks Name	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Meezan Bank	Bank Islamic	1.353	.220	.000	.907	1.799
	Dubai Islamic Bank	2.767	.220	.000	2.321	3.213
Bank Islami	Meezan Bank	-1.353	.220	.000	-1.799	-.907
	Dubai Islamic Bank	1.414	.242	.000	.923	1.905
Dubai Islamic Bank	Meehan Bank	-2.767	.220	.000	-3.213	-2.321
	Bank Islamic	-1.414	.242	.000	-1.905	-.923

Table 3

Crisis Wise Comparison on the Basis of Return on Asset

(I) Crises Period	(J) Crises Period	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Pre-Crises 2006	During Crises 2007-09	-1.184	.269	.000	-1.729	-.640
	Post Crises 2010-20	-1.930	.239	.000	-2.415	-1.445
During Crises 2007-09	Pre-Crises 2006	1.184	.269	.000	.640	1.729
	Post Crises 2010-20	-.746	.162	.000	-1.074	-.417

(I) Crises Period	(J) Crises Period	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Post Crises 2010-20	Pre-Crises 2006	1.930	.239	.000	1.445	2.415
	During Crises 2007-09	.746	.162	.000	.417	1.074

Return on Equity

This ratio compared returns generated using bank's equity. The higher the return on equity, the higher would be the shareholder value and bank's efficiency.

Table 4 shows that Meezan Bank's return on equity ratio was 16.05% and 18.09% higher as compared to the Bank Islami and Dubai Islamic bank respectively, and Bank Islami's return on equity was 2.04% higher as compared to the Dubai Islamic bank. The Sig column shows that there was a significant difference among the mean return on equity ratios of three Banks during the study period which were significantly different except Bank Islami's return on equity ratio as compared to Dubai Islamic bank.

Table 4

Bank Wise Comparison on the Basis of Return on Equity

(I) Banks Name	(J) Banks Name	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Meezan Bank	Bank Islami	16.050	2.293	.000	11.403	20.697
	Dubai Islamic Bank	18.097	2.293	.000	13.451	22.744
Bank Islami	Meezan Bank	-16.050	2.293	.000	-20.697	-11.403
	Dubai Islamic Bank	2.047	2.526	.423	-3.070	7.165

(I) Banks Name	(J) Banks Name	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Dubai Islamic Bank	Meezan Bank	-18.097	2.293	.000	-22.744	-13.451
	Bank Islamic	-2.047	2.526	.423	-7.165	3.070

Table 5

Crisis Wise Comparison on the Basis of Return on Equity

(I) Crises Period	(J) Crises Period	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Pre-Crises 2006	During Crises 2007-09	-1.602	2.800	.571	-7.275	4.071
	Post Crises 2010-20	-10.485	2.492	.000	-15.534	-5.436
During Crises 2007-09	Pre-Crises 2006	1.602	2.800	.571	-4.071	7.275
	Post Crises 2010-20	-8.883	1.688	.000	-12.304	-5.462
Post Crises 2010-20	Pre-Crises 2006	10.485	2.492	.000	5.436	15.534
	During Crises 2007-09	8.883	1.688	.000	5.462	12.304

Return on equity of banks during crises was 1.60% higher as compared to pre-crises period and was 8.88% lower if compared to post crises period. There was no significant difference between the return on equity of Pakistan's Islamic banks comparing the pre and during crises periods.

Return on equity increases, which means during the crisis period bank's earnings were the same as of the amount of capital and Islamic banks used their capital effectively as compared to the pre-crisis period. Hence, there was a significant difference between the Return on equity of banks if we compare the post crises period with pre-crises and during cries periods. The findings of the current study rejected the null hypothesis of equality for Return on equity ratios of Islamic banks of Pakistan.

Profit Margin

The banks strive hard to earn profits. The higher the PM, the more profitable the bank would be.

Table 6

Bank Wise Comparison on the Basis of Profit Margin

(I) Banks Name	(J) Banks Name	Mean Difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
Meezan Bank	Bank Islami	23.684	3.249	.000	17.101	30.266
	Dubai Islamic Bank	106.988	3.249	.000	100.406	113.571
Bank Islami	Meezan Bank	-23.684	3.249	.000	-30.266	-17.101
	Dubai Islamic Bank	83.304	3.578	.000	76.055	90.554
Dubai Islamic Bank	Meezan Bank	-106.988	3.249	.000	-113.571	-100.406
	Bank Islamic	-83.304	3.578	.000	-90.554	-76.055

Meezan Bank's profit margin was 23.6% and 106.9% higher than the Bank Islami and Dubai Islamic bank respectively, and Bank Islami profit margin was 83.3% higher as compared to Dubai Islamic Bank. The Sig column showed that there was a significant difference among the mean profit margin of three banks during the study period from 2006-2020 at 0.05 level.

Table 7

Crisis Wise Comparison on the Basis of Profit Margin

(I) Crises Period	(J) Crises Period	Mean Difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
Pre-Crises 2006	During Crises 2007-09	-79.002	3.966	.000	-87.038	-70.966
	Post Crises 2010-20	-91.166	3.530	.000	-98.318	-84.014
During Crises 2007-09	Pre-Crises 2006	79.002	3.966	.000	70.966	87.038
	Post Crises 2010-20	-12.164	2.392	.000	-17.010	-7.318
Post Crises 2010-20	Pre-Crises 2006	91.166	3.530	.000	84.014	98.318
	During Crises 2007-09	12.164	2.392	.000	7.318	17.010

Profit Margin of banks during crises was 79% higher as compared to pre-crises period and was 12.16% lower if compared to post crises period. Profit margin of IBs gained because they increased their sales in crisis period, which leads to an increased profit margin that is why our result showed an increased profit margin ratio. There was a significant difference in the profit margin of Pakistan's Islamic banks with respect to the three

selected crises periods. Thus, the findings rejected the null hypothesis of equality for profit margin.

Efficiency Ratios

As the name implies, these ratios measure how efficient the banks were in managing their operations. The analysis showed that in efficiency asset turnover, ratios were significantly same in all sub-periods but for operating, ratios were significantly different in all sub-periods

Operating Expense Ratio

It is a benchmark ratio of bank's efficiency as it compares cost to the generated income. The higher OER indicates less efficient banking operations.

Table 8 shows that Meezan Bank's operating ratio was 56.22% and 161.79% lower as compared to the Bank Islami and Dubai Islamic bank respectively. Bank Islami operating ratio was 105.57% lower as compared to Dubai Islamic bank. So, as per the result there was a significant difference among the mean operating ratios of three banks during the study period at 0.05 levels.

Table 8

Bank Wise Comparison on the Basis of Operating Ratio

(I) Banks Name	(J) Banks Name	Mean Difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
Meezan Bank	Bank Islami	-56.225	5.106	.000	-66.570	-45.879
	Dubai Islamic Bank	-161.796	5.106	.000	-172.141	-151.450
Bank Islami	Meezan Bank	56.225	5.106	.000	45.879	66.570
	Dubai Islamic Bank	-105.571	5.623	.000	-116.965	-94.178
Dubai Islamic Bank	Meezan Bank	161.796	5.106	.000	151.450	172.141
	Bank Islamic	105.571	5.623	.000	94.178	116.965

Table 9

Crisis Wise Comparison on the Basis of Operating Ratio

(I) Crises Period	(J) Crises Period	Mean Difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
Pre-Crises 2006	During Crises 2007-09	181.587	6.233	.000	168.958	194.217
	Post Crises 2010-20	193.149	5.548	.000	181.908	204.390
During Crises 2007-09	Pre-Crises 2006	-181.587	6.233	.000	-194.217	-168.958
	Post Crises 2010-20	11.562	3.759	.004	3.946	19.177
Post Crises 2010-20	Pre-Crises 2006	-193.149	5.548	.000	-204.390	-181.908
	During Crises 2007-09	-11.562	3.759	.004	-19.177	-3.946

Operating ratios of banks during crises was 181.58% higher as compared to pre-crises period and was 193.14% higher if compared to post crises period. Operating expense ratio increased, it means Islamic banks during crisis period have-not effectively run their operations, that is why their cost of operating expenses increased as compared to pre and post crisis period. There was significant difference between the operating ratios of Pakistan's Islamic banks comparing all three crises periods. Therefore, our findings reject the null hypothesis of equality for operating ratios of Islamic Banks of Pakistan.

Asset Turnover

The ratio indicates how efficiently a bank uses its assets to generate sales, which are loans and advances in bank's cases. The higher ATO indicates efficient asset use.

Table 10 shows that Meezan Bank asset turnover ratio was 6.580% and 6.574% higher as compared to the bank Islami and Dubai Islamic Bank respectively. Bank Islami asset turnover was 0.007% lower as compared to Dubai Islamic Bank. Therefore, as per the results there was a significant difference among the mean asset turnover ratio of three banks during the study period at 0.05 level, except for Bank Islami with Dubai Islamic Bank.

Table 10

Bank Wise Comparison on the Basis of Asset Turnover

(I) Banks Name	(J) Banks Name	Mean Difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
Meezan Bank	Bank Islami	6.580	.444	.000	5.681	7.480
	Dubai Islamic Bank	6.574	.444	.000	5.674	7.473
Bank Islami	Meezan Bank	-6.580	.444	.000	-7.480	-5.681
	Dubai Islamic Bank	-.007	.489	.989	-.997	.984
Dubai Islamic Bank	Meezan Bank	-6.574	.444	.000	-7.473	-5.674
	Bank Islami	.007	.489	.989	-.984	.997

Table 11

Crisis Wise Comparison on the Basis of Asset Turnover

(I) Crises Period	(J) Crises Period	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Pre-Crises 2006	During Crises 2007-09	-.816	.542	.141	-1.914	.282
	Post Crises 2010-20	-.594	.482	.226	-1.572	.383
During Crises 2007-09	Pre-Crises 2006	.816	.542	.141	-.282	1.914
	Post Crises 2010-20	.221	.327	.502	-.441	.884
Post Crises 2010-20	Pre-Crises 2006	.594	.482	.226	-.383	1.572
	During Crises 2007-09	-.221	.327	.502	-.884	.441

Asset turnover ratios of banks during crises was 0.816% higher as compared to pre-crises period and was 0.221% higher if compared to post crises period. Asset turnover increased during the crisis period, which means Islamic banks generated more revenue by using their asset in crisis period, and there was no significant difference between the asset turnover ratios of Pakistan's Islamic banks comparing all three crises periods at 0.05 level. Therefore, our findings did not reject the null hypothesis of equality for asset turnover ratios of Islamic banks of Pakistan

Risk Indicators

The failure of institutions in managing risk was considered the main cause of the 2008 crisis (Khan et al., 2017). The analysis of risk ratios showed that Islamic banks became riskier in crisis as the ratios were not significantly same in all sub-periods. Parashar & Venkatash (2010) also concluded that Islamic bank's capital ratio and leverage was highly negatively affected during the crisis.

Non-Performing Loans

A higher non-performing ratio indicates greater liquidity risk. The crisis of 2008 affected the non-performing loans of IBs. The higher NPL in crisis showed borrowers defaulted because of their loan contracts.

Table 12 shows that Meezan Bank's non-performing loan ratio was 1.930% lower and .065% higher as compared to the Bank Islami and Dubai Islamic Bank respectively, Bank Islami non-performing loan ratio was 1.995% higher as compared to Dubai Islamic Bank. Therefore, as per the result there was insignificant difference among the mean of non-performing loan ratio of three Banks (Meezan bank, Dubai Islamic bank and Bank Islami).

Table 12

Bank Wise Comparison on the Basis of Non-Performing Loan

(I) Banks Name	(J) Banks Name	Mean Difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
Meezan Bank	Bank Islami	-1.930	2.168	.379	-6.322	2.462
	Dubai Islamic Bank	.065	2.168	.976	-4.327	4.458
Bank Islami	Meezan Bank	1.930	2.168	.379	-2.462	6.322
	Dubai Islamic Bank	1.995	2.387	.409	-2.842	6.833
Dubai Islamic Bank	Meezan Bank	-.065	2.168	.976	-4.458	4.327
	Bank Islamic	-1.995	2.387	.409	-6.833	2.842

Table 13

Crisis Wise Comparison on the Basis of Non-Performing Loan

(I) Crises Period	(J) Crises Period	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Pre-Crises 2006	During Crises 2007-09	-1.786	2.646	.504	-7.148	3.576
	Post Crises 2010-20	-5.295	2.355	.031	-10.068	-.522
During Crises 2007-09	Pre-Crises 2006	1.786	2.646	.504	-3.576	7.148
	Post Crises 2010-20	-3.509	1.596	.034	-6.743	-.276
Post Crises 2010-20	Pre-Crises 2006	5.295	2.355	.031	.522	10.068
	During Crises 2007-09	3.509	1.596	.034	.276	6.743

Non-performing loan ratio of banks during crises was 1.786% lower as compared to pre-crises period and was 5.295% lower if compared to post crises period. The significant column showed that there was insignificant difference between the non-performing loan ratios of Pakistan's Islamic banks, comparing pre crises with during crises period. Moreover, when we compared pre with post crises and during crises period with post crisis period it showed that there was significant difference between the non-performing loan ratios of Pakistan's Islamic bank at 0.05 significance level. Therefore, the findings rejected the null hypothesis of equality for non-performing loan ratio of Islamic banks of Pakistan.

Capital Adequacy Ratio

It is an important ratio in banking industry as it represents safety and soundness of a bank in crisis. This ratio compares the total capital required, to be held against risk-weighted assets of the bank. This ratio implies that banks should have sufficient capital to cover its risky assets as banks hold many liabilities.

Table 14 shows that Meezan Bank capital adequacy ratio was 24.505% lower and 19.394% lower as compared to Bank Islami and Dubai Islamic Bank respectively. Bank Islami capital adequacy ratio was 1.978% higher as compared to Dubai Islamic Bank. So, as per the results there were significant difference among the mean of capital adequacy ratio of three Banks during the study period at 0.05 level.

Table 14

Bank Wise Comparison on the Basis of Capital Adequacy Ratio

(I) Banks Name	(J) Banks Name	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Meezan Bank	Islami Bank	-24.505	1.796	.000	-28.144	-20.865
	Dubai Islamic Bank	-19.394	1.796	.000	-23.033	-15.755
Bank Islami	Meezan Bank	24.505	1.796	.000	20.865	28.144
	Dubai Islamic Bank	5.111	1.978	.014	1.103	9.119
Dubai Islamic Bank	Meezan Bank	19.394	1.796	.000	15.755	23.033
	Bank Islamic	-5.111	1.978	.014	-9.119	-1.103

Capital adequacy ratio of banks during crises was 21.274% higher as compared to pre-crises period and was 27.753% higher if compared to post crises period. During crisis period the capital adequacy ratio of Islamic banks decreased because in this period they did not have enough capital on reserve to handle losses. There was significant difference between the capital adequacy ratios of Pakistan's Islamic banks at 0.05 significance level. Therefore, our findings rejected the null hypothesis of equality for capital adequacy ratio of Islamic banks of Pakistan.

Table 15

Crisis Wise Comparison on the Basis of Capital Adequacy Ratio

(I) Crises Period	(J) Crises Period	Mean Difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
Pre-Crises 2006	During Crises 2007-09	21.274	2.193	.000	16.831	25.717
	Post Crises 2010-20	27.753	1.952	.000	23.799	31.707
During Crises 2007-09	Pre-Crises 2006	-21.274	2.193	.000	-25.717	-16.831
	Post Crises 2010-20	6.479	1.322	.000	3.800	9.158
Post Crises 2010-20	Pre-Crises 2006	-27.753	1.952	.000	-31.707	-23.799
	During Crises 2007-09	-6.479	1.322	.000	-9.158	-3.800

Leverage ratio

This ratio represents capital structure of the banks and compares debt and equity. Acharya et al. (2010) claimed that banks with higher level of capital could stand in severe crisis period.

Table 16 shows that Meezan Bank's leverage ratio was 7.014% higher and 7.326% higher as compared to the Bank Islami and Dubai Islamic Bank respectively. Bank Islami leverage ratio was .313% higher as compared to Dubai Islamic Bank, so as per the result there was significant difference among the mean of leverage ratio of Meezan bank during the study period at 0.05 level. However, insignificant difference among the mean of leverage ratio of Islami bank with Dubai Islamic bank was observed during the study period at 0.05 level.

Table 16

Bank Wise Comparison on the Basis of Leverage Ratio

(I) Banks Name	(J) Banks Name	Mean Difference (I-J)	Std. Error	Sig	95%Confidence Interval	
					Lower Bound	Upper Bound
Meezan Bank	Bank Islami	7.014	1.375	.000	4.229	9.799
	Dubai Islamic Bank	7.326	1.375	.000	4.541	10.111
Bank Islami	Meezan Bank	-7.014	1.375	.000	-9.799	-4.229
	Dubai Islamic Bank	.313	1.514	.838	-2.755	3.380
Dubai Islamic Bank	Meezan Bank	-7.326	1.375	.000	-10.111	-4.541
	Bank Islamic	-.313	1.514	.838	-3.380	2.755

Table 17

Crisis Wise Comparison on the Basis of Leverage Ratio

(I) Crises Period	(J) Crises Period	Mean Difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
Pre-Crises 2006	During Crises 2007-09	-3.142	1.678	.069	-6.542	.258
	Post Crises 2010-20	-10.173	1.494	.000	-13.200	-7.147
During Crises 2007-09	Pre-Crises 2006	3.142	1.678	.069	-.258	6.542
	Post Crises 2010-20	-7.032	1.012	.000	-9.082	-4.981

(I) Crises Period	(J) Crises Period	Mean Difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
Post Crises 2010-20	Pre-Crises 2006	10.173	1.494	.000	7.147	13.200
	During Crises 2007-09	7.032	1.012	.000	4.981	9.082

Leverage ratios of banks during crises was 3.142% lower as compared to pre-crises period and was 10.173% lower if compared to post crises period. There was significant difference between the leverage ratio of Pakistan's Islamic banks comparing pre and post crises period, and post crises with during crises period. Therefore, our findings rejected the null hypothesis of equality for leverage ratio of Islamic Banks of Pakistan.

Liquidity Ratios

Liquidity plays an important role in determining the sustainability of banks. It refers to how quickly a bank could convert its assets into cash to meet withdrawal demands of its depositors. The banks holding more liquid assets are better able to survive in the crisis period. Islamic banks are considered to be highly liquid as they could not invest in interest-bearing short-term investments; they hold more cash in hand to meet their short-term obligations.

Current Asset Ratio

This ratio compares the amount of liquid assets a bank owns against its short-term liabilities.

Meezan Bank's current asset ratio was 0.172% and 0.121% lower as compared to the Bank Islami and Dubai Islamic Bank respectively. Bank Islami's capital current asset ratio was 0.051% higher as compared to Dubai Islamic Bank, so as per the result there was significant difference among the mean of current asset ratio of three Banks during the study period at 0.05 level.

Table 18

Bank Wise Comparison on the Basis of Current Asset

(I) Banks Name	(J) Banks Name	Mean Difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
Meezan Bank	Bank Islami	-.172	.017	.000	-.207	-.137
	Dubai Islamic Bank	-.121	.017	.000	-.156	-.085
Bank Islami	Meezan Bank	.172	.017	.000	.137	.207
	Dubai Islamic Bank	.051	.019	.011	.012	.090
Dubai Islamic Bank	Meezan Bank	.121	.017	.000	.085	.156
	Bank Islamic	-.051	.019	.011	-.090	-.012

Table 19 shows that current asset ratios of banks during crises were 0.247% lower as compared to pre-crises period and 0.116% higher if compared to post crises period. During crisis period current asset ratio of IBs decreased, it means they had less current asset against current liabilities and there was significant difference between the current asset ratio of Pakistan's Islamic Banks comparing pre and post crises period and post crises period with during crises period and during with pre crisis period. Therefore, our findings rejected the null hypothesis of equality for current asset ratios of Islamic banks of Pakistan.

Cash to Deposits Ratio

This is a deposit run-off ratio which indicates what percentage of customer fund withdrawal requests were met in case of a liquidity crunch. The testing result showed a significant value, which showed that equality of means of all sub-periods were not supported by null hypothesis The crisis had an impact on cash to deposit ratio of Islamic banks.

Table 19

Crisis Wise Comparison on the Basis of Current Asset Ratio

(I) Crises Period	(J) Crises Period	Mean Difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
Pre-Crises 2006	During Crises 2007-09	.247	.021	.000	.204	.290
	Post Crises 2010-20	.363	.019	.000	.325	.402
During Crises 2007-09	Pre-Crises 2006	-.247	.021	.000	-.290	-.204
	Post Crises 2010-20	.116	.013	.000	.090	.142
Post Crises 2010-20	Pre-Crises 2006	-.363	.019	.000	-.402	-.325
	During Crises 2007-09	-.116	.013	.000	-.142	-.090

Table 20

Bank Wise Comparison on the Basis of Cash to Deposit

(I) Banks Name	(J) Banks Name	Mean Difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
Meezan Bank	Dubai Islamic Bank	-16.676	1.781	.000	-20.284	-13.067
		-11.732	1.781	.000	-15.341	-8.123
Bank Islami	Meezan Bank	16.676	1.781	.000	13.067	20.284
	Dubai Islamic Bank	4.944	1.962	.016	.969	8.918

(I) Banks Name	(J) Banks Name	Mean Difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
Dubai Islamic Bank	Meezan Bank	11.732	1.781	.000	8.123	15.341
	Bank Islamic	-4.944	1.962	.016	-8.918	-.969

Table 20 showed the comparison of selected Pakistan's Islamic banks considered for the study. Meezan Bank's Cash to deposit ratio was 16.67% and 11.73% lower as compared to the Bank Islami and Dubai Islamic Bank respectively. Islami Bank cash to deposit ratio was 4.944% higher as compared to Dubai Islamic Bank. So as per the result there was a significant difference among the mean cash to deposit ratio of three banks during the study period at 0.05 level.

Table 21

Crisis Wise Comparison on the Basis of Cash Deposit

(I) Crises Period	(J) Crises Period	Mean Difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
Pre-Crises 2006	During Crises 2007-09	27.171	2.174	.000	22.766	31.577
	Post Crises 2010-20	38.926	1.935	.000	35.005	42.847
During Crises 2007-09	Pre-Crises 2006	-27.171	2.174	.000	-31.577	-22.766
	Post Crises 2010-20	11.754	1.311	.000	9.098	14.411

(I) Crises Period	(J) Crises Period	Mean Difference (I-J)	Std. Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
Post Crises 2010-20	Pre-Crises 2006	-38.926	1.935	.000	-42.847	-35.005
	During Crises 2007-09	-11.754	1.311	.000	-14.411	-9.098

Table 21 showed that cash to deposit ratios with respect to different crises periods (pre-crises, during crises, and post crises). Cash to deposit ratios of banks during crises was 27.17% lower as compared to pre-crises period and was 11.75% higher if compared to post crises period. During crisis period Islamic banks increased their deposit rate that's why their cash to deposit ratio decreased during crisis period. There was significant difference between the cash to deposit ratios of Pakistan's Islamic banks comparing all three crises periods, the findings rejected the null hypothesis of equality for Cash to deposit ratios of Islamic banks of Pakistan comparing the three selected periods.

Table 22
Bank Wise Comparison on the Basis of Loan to Deposit

(I) Banks Name	(J) Banks Name	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Meezan Bank	Bank Islami	11.351	5.035	.030	1.150	21.553
	Dubai Islamic Bank	-11.328	5.035	.030	-21.529	-1.126
Bank Islami	Meezan Bank	-11.351	5.035	.030	-21.553	-1.150
	Dubai Islamic Bank	-22.679	5.545	.000	-33.914	-11.444

(I) Banks Name	(J) Banks Name	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Dubai Islamic Bank	Meezan Bank	11.328	5.035	.030	1.126	21.529
	Bank Islamic	22.679	5.545	.000	11.444	33.914

Loan to Deposit Ratio

The banks operate on loans and deposits. Table 22 showed that Meezan Bank's loan to deposit ratio was 11.351% higher and 11.328% lower as compared to the Bank Islami and Dubai Islamic bank respectively. Bank Islami loan to deposit ratio was 22.679% lower as compared to Dubai Islamic Bank. So as per the results there were insignificant difference among the mean of loan to deposit ratio of three banks during the study period at 0.05 level except Dubai Islamic bank with Bank Islami.

Table 23

Crisis Wise Comparison on the Basis of Loan to Deposit Ratio

(I) Crises Period	(J) Crises Period	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Pre-Crises 2006	During Crises 2007-09	13.126	6.146	.039	.672	25.579
	Post Crises 2010-20	14.136	5.471	.014	3.051	25.220
During Crises 2007-09	Pre-Crises 2006	-13.13	6.146	.039	-25.579	-.672
	Post Crises 2010-20	1.010	3.706	.787	-6.500	8.520
Post Crises 2010-20	Pre-Crises 2006	-14.14	5.471	.014	-25.220	-3.05
	During Crises 2007-09	-1.01	3.706	.787	-8.520	6.500

Loan to deposit ratio of banks during crises was 13.126% higher as compared to pre-crises period and was 14.136% higher if compared to post

crises period. The significant column showed that there was significant difference between loan to deposit ratio of Pakistan's Islamic banks while comparing pre with post crises period and during crises and during crises with pre crisis period difference at 0.05 significance level. So, Table 23 showed that at least two periods showed significant difference and only one showed insignificant difference. Therefore, our findings rejected the null hypothesis of equality for loan to deposit ratio of Islamic banks of Pakistan.

Return Analysis

Returns are particularly important for investors while making an investment decision. The analysis showed that stock returns and earnings per share of Islamic banks during crisis were not consistent with pre and post crisis values.

Stock Return

The stock return showed yearly return on the stock price of the banks. The results showed significance value less than 0.05 and the alternative hypothesis was supported which say that there is a significant difference in stock return between at least two time periods. The crisis of 2008 has affected returns of banks and the market performance of Islamic banks was significantly different in all sub periods.

Table 24
Bank Wise Comparison on the Basis of Stock Return

(I) Banks Name	(J) Banks Name	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Meezan Bank	Bank Islamic	10.594	8.110	.203	-6.108	27.297
Bank Islamic	Meezan Bank	-10.594	8.110	.203	-27.297	6.108

Above, Table 24 showed the comparison between Pakistan's Islamic banks selected for the study. Meezan Bank's stock return ratio was 10.594% higher as compared to the Bank Islami and 10.594% lower if Bank Islami was compared to Meezan Bank. So, as per the result there was insignificant difference among the mean of stock return ratio of two banks during the study period at 0.05 level.

Table 25

Crisis Wise Comparison on the Basis of Stock Return

(I) Crises Period	(J) Crises Period	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Pre-Crises 2006	During Crises 2007-09	-3.295	11.684	.780	-27.360	20.769
	Post Crises 2010-20	-17.832	10.294	.096	-39.034	3.369
During Crises 2007-09	Pre-Crises 2006	3.295	11.684	.780	-20.769	27.360
	Post Crises 2010-20	-14.537	7.312	.058	-29.597	.522
Post Crises 2010-20	Pre-Crises 2006	17.832	10.294	.096	-3.369	39.034
	During Crises 2007-09	14.537	7.312	.058	-.522	29.597

Stock return ratio of banks during crises was 3.295% lower as compared to pre-crises period and was 17.832% lower if compared to post crises period. There was insignificant difference between stock return ratio of Pakistan's Islamic banks comparing pre and post crises period and post crises with during crises period respectively. During comparison with pre-crisis period difference at 0.05 significance level was noticed. Therefore, our findings accepted the null hypothesis of equality for stock return ratio of Islamic banks of Pakistan.

Earnings per Share

It is another important ratio; which investors look for while making investment decisions. The test showed significance value less than 0.05 and

the null hypothesis of equality of means of all sub-periods were not supported, which showed that the crisis affected the EPS of IBs.

Table 26

Bank Wise Comparison on the Basis of Earnings per Share

(I) Banks Name	(J) Banks Name	Mean Difference (I-J)	Std. Error	Sig.	95%Confidence Interval	
					Lower Bound	Upper Bound
Meezan Bank	Bank Islami	2.771	1.129	.019	.484	5.059
	Dubai Islamic Bank	3.196	1.129	.007	.909	5.484
Bank Islami	Meezan Bank	-2.771	1.129	.019	-5.059	-.484
	Dubai Islamic Bank	.425	1.243	.734	-2.095	2.944
Dubai Islamic Bank	Meezan Bank	-3.196	1.129	.007	-5.484	-.909
	Bank Islami	-.425	1.243	.734	-2.944	2.095

Meezan Bank's earnings per share ratio is 2.771% higher and 3.196% higher as compare to Bank islami and Dubai Islamic Bank respectively. Bank islami earning per share ratio is .425% higher as compare to Dubai Islamic Bank, so as per the result there is insignificant difference among the mean of earning per share ratio of three Banks during the study period at 0.05 level.

Earnings per share of banks during crises 0.406 %were lower as compared to pre-crises period and are 2.721% lower if compared to post crises period. There was a significant difference between earning per share ratio of Pakistan's Islamic banks comparing pre with post crises period, during with post crises and post with pre and during crises period. Therefore, our findings rejected the null hypothesis of equality for earning per share ratio of Islamic banks of Pakistan.

Table 27
Earnings per Share

(I) Crises Period	(J) Crises Period	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Pre-Crises 2006	During Crises 2007-09	-.406	1.378	.770	-3.198	2.387
	Post Crises 2010-20	-2.721	1.227	.033	-5.206	-.235
During Crises 2007-09	Pre-Crises 2006	.406	1.378	.770	-2.387	3.198
	Post Crises 2010-20	-2.315	.831	.008	-3.999	-.631
Post Crises 2010-20	Pre-Crises 2006	2.721	1.227	.033	.235	5.206
	During Crises 2007-09	2.315	.831	.008	.631	3.999

Summary of Results

Table 28
Summary of Results

Ratios	Null Hypothesis	Impact of crisis
Return on Asset	Not supported	Present
Return on Equity	Not Supported	Present
Profit margin	Not Supported	Present
Operating expense Ratio	Not Supported	Present
Asset turnover ratio	Supported	Absent
Non-performing Loan	Not Supported	Present

Ratios	Null Hypothesis	Impact of crisis
Capital adequacy Ratio	Not Supported	Present
Leverage ratio	Not Supported	Present
Current Asset Ratio	Not Supported	Present
Cash to deposit ratio	Not Supported	Present
Loan to deposit ratio	Not Supported	Present
Stock return	Supported	Absent
Earning per share	Not Supported	Present

Conclusion

The current study aims to investigate the impact of global financial crisis on the Islamic banks of Pakistan The application of Univariate Analysis of Variance on ratios of three sub-periods including pre-crisis (2006), during crisis (2007-2009), and post-crisis (2010-2020) showed mixed results. Most of the previous literature focused on the comparison between conventional and Islamic banks. The focus of the current study was Islamic banks only. Therefore, we compared the performance of Islamic banks through different crisis periods.

This trend analysis overtime would help in capturing the performance of Islamic banks while comparing them with themselves instead of comparing them with the organs of the already grown conventional banking industry.

The significant column shows that there is significant difference between the ROA of Pakistan's Islamic Banks comparing all three crises periods at 0.05 level. In case of ROE there is a significant difference between the ROE of Banks comparing the Post crises period with Pre-crises and during cries periods. In case of PM there is a significant difference "between" the profit margin of Pakistan's Islamic Banks with respect to the three crises periods. In case of OER There is significant difference between the operating ratios of Pakistan's Islamic Banks comparing all three crises periods. In case of ATO there is no significant difference between the Asset Turnover ratios of Pakistan's Islamic Banks comparing all three crises periods at 0.05 level. In case of NPL when we compare pre with Post crises

and during crises period with post it shows that there is significant difference between the non-performing loan Ratio of Pakistan's Islamic Bank at 0.05 significance level. In case of capital adequacy ratio there is significant difference between the capital adequacy ratios of Pakistan's Islamic Banks at 0.05 significance level. In case of Current Asset ratio there is significant difference between the current asset ratio of Pakistan's Islamic Banks comparing pre and post crises period and post crises with during crises period and during with pre crisis period. In case of LTD significant column shows that there is significant difference between loan to deposit ratio of Pakistan's Islamic Banks while comparing pre with post crises period and during crises and during crises with pre crisis period difference at 0.05 significance level. In SR there is insignificant difference between stock return ratio of Pakistan's Islamic Banks comparing pre and post crises period and post crises with during crises period and during with pre crisis period difference at 0.05 significance level. In case of EPS There is significant difference between earning per share ratio of Pakistan's Islamic Banks comparing pre with post crises period, during with post crises and post with pre and during crises period

The profitability (Return on Asset, Return on Equity, Profit margin), efficiency (Operating expense ratio), Risk indicator (None performing loan, capital adequacy, and leverage ratio), Liquidity (Cash to deposit, current asset ratio), loan to deposit and EPS are significantly different in at least two sub period, and 2008's financial crises had impacted the performance of banks, except for Asset Turnover and stock return (SR) of Islamic banks as they were significantly same in all sub-periods.

Abdulle and Kassim (2012) also provide similar results same like our results they compared 6 Islamic and 9 conventional banks from Malaysia, the authors conclude during crisis both banking systems are impacted in a similar manner in terms of profitability and credit risk but the Islamic system performs slightly better than conventional system. Our results are supported by empirical study of Aktas et al. (2013) performed on Turkish market using trend analysis for conventional and Islamic banks from 2006 - 2011. The study concludes that Islamic banks are impacted due to crisis but more stable in terms of profitability, capital adequacy and liquidity as compare to conventional.

Policy Implications

The findings of this research paper will help bank authorities and policy makers in making future decisions, as they should focus on ratios to evaluate the performance of banks. It is to be added here that the sample size of this study is small although it covers the three Islamic banks out of the four full-fledged Islamic banks operating in Pakistan. In future, the sample size may be extended to add more countries in the analysis. This will be particularly helpful, as it will highlight the country-wise impact pattern of crisis on Islamic banks.

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