

Global Financial Crises 2007-09 and the Performance of Islamic Banks in Pakistan

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The aim of this study is to analyse the impact of the Global Financial Crisis of 2007-09 on the performance of Islamic banks licensed to operate in Pakistan. For that purpose, the sample of 5 full-fledged Islamic banks operational in Pakistan was collected from the year 2006 to 2018. In addition to the GFC, two firm specific variables (size and leverage) and two macro-economic variables (inflation and economic growth) were used as control variables in this study. The empirical analysis was performed with the help of Fixed Effect Model (FEM). In the light of the results, it was found that the performance of Islamic banks in Pakistan was not influenced by the Global Financial Crisis (GFC). In terms of control variables, a positive impact of Islamic banks' size was found on their performance. Overall, it is concluded in this study that Islamic banks in Pakistan did not show any response towards the global financial crisis of 2007-09.

Key words: *Global Financial Crisis, Performance, Banks, Pakistan, Sharia, Islamic.*

Background of Study

Islamic finance refers to the financing activity which falls under the criteria of Sharia and this concept also refers to the investment made under the Sharia laws. The history of Islamic finance goes back to the foundation of Islam. However, formally, the Islamic finance establishment was made in 20th century. Since then the Islamic finance industry is growing at

the annual rate of 15 to 25%. Moreover, the total worth of Islamic financial institutions has exceeded \$2 trillion.

The Islamic banking system is the branch of Islamic finance which has witnessed the highest growth rate to date. Even though Islamic banking is also a branch of finance, however, it should not be considered as replication of conventional banking. This is because the fundamentals and philosophy of Islamic banks significantly differ from conventional banks. The bases of Islamic banks are Shariah laws, thus, it is compulsory for them to abide by such laws in their deeds and actions. The word “Shariah” is taken from Arabic language which means “the way to the source of life”. In the current era, this word is taken as a legal system (code of conduct and behaviour) defined by the Holy Quran (Parashar & Venkatesh, 2010).

It is generally understood that conventional banks were the worst hit by the recent global financial crisis; on the other side, it is assumed that Islamic banks are much safer and they were not as impacted by the GFC as conventional banks. The reason behind such assumption is Islamic banks’ inherent nature. Such nature is based on asset backed banking and avoidance of misunderstood financial products (Parashar & Venkatesh, 2010). Although, there is a study done by Phulpoto, Shah and Shaikh (2012) who analysed the relationship between the GFC and the Islamic banks’ performance; however, their study faced two major limitations. First, they did not apply any empirical model, instead, they just relied on ratio analysis. Second their study’s sample was just consisting of two years which is very little to make any empirical prediction. Thus, the current study contributes to existing literature by empirically analysing the relationship between the GFC of 2007-09 with the larger period of the years 2006 to 2018.

Overview of the Global Financial Crisis of 2007-09

In general, the Global Financial Crisis (GFC) is referred to as the time period of extreme stress in the global financial markets, as well as, in the banking system during the period of 2007 to 2009 (Reserve Bank of Australia, 2020). The GFC of 2007-09 was a major shock to the whole financial scenario of the world (Thakor, 2013). During this period, the United States’ housing market was badly impacted and this phenomenon served as a catalyst for the global financial crisis and spread to the global financial market. As a result of this crisis, the banks throughout the globe suffered heavy losses and became dependent on government financial support to avoid insolvency. This crisis also become a cause of losing jobs of millions of people and it was the second major financial crisis since the 1930’s great depression (Reserve Bank of Australia, 2020).

During the global financial crisis period, the whole financial system of the world was on the verge of collapse. Although the exact causes of the GFC of 2008-09 are unknown, this crisis

was followed by a series of dramatic events. These events include the downfall of major financial institutions and interventions by the governments in the financial system round the globe (Arner, 2009). According to Borodacheva et al. (2016) the globalisation and integration among the economies played a key role in the spreading of the GFC. They also stated that main causes of the GFC were the false rating, excessive money in the economic system, increase in issuance of loans, underestimating the financial risk, and self-destruction of debt structure. However, still there is not any consensus among policymakers of how the global financial crisis penetrated the global economy. Moreover, it is also argued that during this GFC period, there was a lack of proper regulations and supervisions (Merrouche & Nier, 2010).

Review of Literature Related to the Global Financial Crisis of 2007-09

Previous literature has explored the different dimensions as well as the implications of the GFC (Nazir, Safdar & Akram, 2012). However, there is limited literature which addresses the role of the GFC regarding Islamic banks of Pakistan. The Global Financial Crises (GFC) emerged because of a subprime lending crisis that hardly hit such commercial banks' performance which largely deal with mortgage-backed securities (Erfani & Vasigh, 2018). The GFC originated from the United States' subprime mortgage market and translated into a global phenomenon (Guinigundo, 2010). Specifically, in the context of the Pakistani market, the GFC of 2007-09 also created instability in the overall economic environment (Khan, Zainuddin & Md-Jadi, 2018).

It was stated by Dalaien (2016) that the GFC left its mark on the economies of both developing and developed countries. It was also argued by the (Mughtar et al. 2019) study that during the global financial crisis period the firms observed decline in investment as well as in their market performance. A study done by Uppal and Mangla (2010) of the Malaysian market found that GFC adversely impacted the profitability of Islamic banks. Accordingly, Basit and Sulaiman (2017) concluded that the GFC significantly impacted the profitability (measured by earning per share) of banks operating in the Malaysian market. Similarly, a study by Yap, Mohamed and Chong (2014) also found the direct relationship between the GFC and the financial performance of manufacturing companies in Malaysia. Their sample consisted of 70 companies by covering the data period from the years 2006 to 2010. They also implied that in case of any financial or economic crisis, most of the companies are adversely and severely impacted. Even such crisis can push a company to insolvency or bankruptcy if it persists for a longer period.

Another attempt to analyse the impact of the GFC on the banking sector's performance was made by the Dalaien (2020) study. His sample was the selected banks operating in the market of India and Jordan respectively. He concluded that share prices' performance of Indian

banks remained good during the GFC period; however, the performance of Jordanian banks was significantly and negatively impacted. In terms of the banking industry of Western Balkan countries, it was stated by Ganic (2012) that the GFC reduced the credit growth and negatively impacted the asset quality of banks. Furthermore, the profitability of banks also suffered badly during post global financial crisis period. In addition, a study done by Singh, Elkanj, Yaacoub and Dzenopoljac (2017) in the Arab region by selecting the 49 banks from Forbes top 100 companies, concluded that the efficiency of banks suffered declined during the global financial crisis period. In context of the Pakistani market, a study done by Phulpoto et al. (2012) found that Islamic banks were less affected during the GFC period because of their sound footings of Shariah laws. As according to Erfani and Vasigh (2018) the Islamic banks maintained their satisfactory efficiency level as compared to conventional banks during the global financial crisis period.

Control Variables

To isolate the impact of the GFC on Islamic banks' performance, it is important to control the other firm-specific and macro-economic determinants which are already explored in previous literature regarding the banks' performance. Thus, in this study both firm-specific (size and leverage) and macro-economic (inflation and economic growth) variables were used as control variables. In context of firm size, it is measured by the total assets. Since, Islamic banks' size differ in Pakistan, it was used as control variable. The selection of size as a control variable was also justified through previous literature (Al-Smadi & Al-Wabel, 2011; Rahman, 2012) which selected the bank size as the control variable. In context of leverage, it is an important determinant of the banks' performance which measures the contribution of owner's money as compared to the total assets of the firm (Parashar & Venkatesh, 2010). Previous researches (Ado, 2016; Mondal & Ghosh, 2012; Riahi-Belkaoui, 2003) regarding banking sector also selected the leverage as a control variable.

In this study, two macro-economic variables namely, inflation and economic growth are used as control variables. Inflation rate is measured through Consumer Price Index (CPI) and it was also used as control variable by the Ehsan (2011) study to capture the impact of economic uncertainty. In addition, economic growth proxied by the GDP was also used as a control variable. The selection of the GDP as a control variable is also supported by previous studies (Al-Smadi & Al-Wabel, 2011; Bukair & Rahman, 2015; Naceur & Omran, 2011).

Data and Methodology

In this research, authors collected the yearly data from 2006 to 2018 of 5 full-fledged Islamic banks operational in Pakistan. The data is in the shape of a balanced panel with 65 observations. Furthermore, for the purpose of analysing the impact of the GFC of 2007-09 on

Islamic banks' performance, dummy variable "1" is used for crisis period and "0" for the period other than the GFC. In addition to independent and dependent variables, 4 control variables namely, size, leverage, inflation and economic growth are also used in this study. The summary statistics of these variables along their proxies are provided in table 1.

Table 1: Measurement of the Variable

Variable	Notation	Measurement	Data Source
Profitability	PRO	Net profit after tax/total shareholder's equity	State Bank of Pakistan
Global Financial Crisis	GFC	Dummy Variable "1" for the Global Financial Crisis 2007-09 period, "0" otherwise	-
Control Variables			
Size	SIZ	Total assets	State Bank of Pakistan
Leverage	LEV	Total deposit/ total equity	State Bank of Pakistan
Inflation	INF	Consumer Price Index	Data Stream
Economic Growth	EG	Dividing the GDP at current market prices/ total population	World Bank Website

Source: Author's Own Compilation Based on Previous Literature

To empirically analyse the relationship between selected independent, control and dependent variables, the econometric form of this relationship is exhibited through equation 1.

$$PRO_{it} = \beta_1 + \beta_2 GFC_{it} + \beta_3 SIZ_{it} + \beta_4 LEV_{it} + \beta_5 INF_{it} + EG_{it} + \mu_t \quad (1)$$

In the econometric equation above, PRO reflects the profitability of Islamic banks "i" at the specific period "t". The GFC represents the global financial crisis period from the years 2007 to 2009. It is a dummy variable which assumes the value of "1" in case of the global financial crisis year and "0" otherwise. SIZ stands for the size of an Islamic bank "i" at "t" time-period. LEV indicates the leverage level of an Islamic bank "i" at "t" period of time. INF exhibits the inflation rate "i" at time "t". EG is a representation of the economic growth of country "i" at time "t".

Results and Interpretations

In this research, to fulfill the assumptions of OLS, different diagnostic tests were applied to confirm either the data characteristics meets the OLS assumptions. In multiple regression analysis, it is commonly observed that independent variables have some sort of interconnection. Furthermore, in a model, the problem of multicollinearity arises when an

independent variable has a strong association with the linear combination of other selected independent variables. A high level of multicollinearity can confound the impact of independent variables (Forthofer, Lee, & Hernandez, 1996). In this study, the multicollinearity assumption was tested with the help of Pearson correlation test, Variance Inflation Factor (VIF) and tolerance factor (1/VIF).

In the case of the Pearson correlation test, the correlation value greater than 0.90 among a pair of variables indicates the problem of multicollinearity (Pallant, 2013, p. 149). The results of this test are reported in Table 2.

Table 2: Pearson Correlation Test Results

	GFC	SIZ	LEV	INF	EG
GFC	1				
SIZ	-0.351	1			
LEV	-0.310	0.869	1		
INF	0.568	-0.358	-0.290	1	
EG	-0.384	0.151	0.123	-0.862	1

The results of the Pearson correlation test are reported in Table 2. It can be observed from the above table that the correlation value among all selected pairs of variables fall under acceptable criteria set by Pallant (2013, p. 149) which is that the correlation among independent variables should be less than 0.90. The size and leverage of Islamic banks exhibit the highest value of correlation of 0.869. Furthermore, the direction of such correlation is positive. Whereas, the correlation among leverage and economic growth was observed to be lowest at 0.123 with a positive direction. In addition to the Pearson correlation test, VIF test was also applied in this study to verify the assumption of multicollinearity. According to Forthofer et al. (1996) VIF is a more useful approach to identify the multicollinearity problem and if the value of VIF increases from 10, it can be a cause of concern. The tolerance factor (1/VIF) is also a closely related diagnostic statistics to identify the multicollinearity problem in the multiple regression analysis (Miles, 2014). Either the value of VIF increases from 10 or the tolerance factor value becomes less than 0.10; both indicate the multicollinearity problem in the model (Pallant, 2013, p. 156).

Table 3: Variance Inflation Factor and Tolerance Factor Results

	VIF	Tolerance Factor (1/VIF)
GFC	1.606	0.622
SIZ	4.544	0.220
LEV	4.134	0.241
INF	6.059	0.165
EG	4.595	0.217

The results of both, VIF and the tolerance factor are reported in table 3. According to the results, the value of VIF regarding all explanatory variables is less than 10. This confirms that there is no multicollinearity issue in the model. In addition, the non-existence of multicollinearity is also confirmed through tolerance factor results. It is because the value of the tolerance factor is greater than 0.10 with respect to all selected independent variables.

In this research, the assumption of normality was tested with the help of the Jarque-Bera normality test. Table 4 reports the results of this test.

Table 4: Jarque-Bera Normality Test Results

Jarque-Bera	596.272
Probability	0

As in table 4, the Jarque-Bera normality test result indicates that data is not normal. It is because the p-value is significant. However, Hair et al. (2010, p. 70) argued that the assumption of normality can be relaxed if the sample size is greater than 30. Thus, by following the Hair et al. (2010, p. 70) argument, the normality assumption is relaxed in this study. This is because the sample size of this study (65) is also greater than 30.

Table 5: Autocorrelation Test Results

F-statistic	0.175	Prob. F (2,57)	0.839
Obs.*R-squared	0.397	Prob. Chi-Square (2)	0.819

To detect any possible autocorrelation issue, the Breusch-Godfrey test was applied in this study. According to the results, the p-value is insignificant. This indicates that there is not any autocorrelation problem in the model. Furthermore, to detect the heteroscedasticity issue, the Breusch-Pagan-Godfrey test is applied in this research. The results of this test are reported in Table 6.

Table 6: Heteroscedasticity Test Results

F-statistic	5.073	Prob. F (5,59)	0
Obs.*R-squared	19.545	Prob. Chi-Square (5)	0.001

Table 6 presents the Breusch-Pagan-Godfrey heteroscedasticity test. The results highlight the heteroscedasticity problem as the p-value is less than 0.05. To address this problem, Heteroskedasticity and Autocorrelation Consistent (HAC) standard errors and covariance criteria were adopted.

Table 7: Results of the Fixed Effect Model (FEM)

Variable	Beta Coefficient	T-stat	P-value
c	-1.327	-2.001	0.050
GFC	0.039	0.711	0.479
SIZ	0.077**	2.501	0.015
LEV	-0.001	-0.443	0.658
INF	-0.001	-0.192	0.848
EG	-0.008	-0.499	0.619
R-squared (R²)	0.611		
Adjusted R²	0.548		
Prob(F-statistic)	0		

* Significant level = 0.1

** Significant level = 0.05

*** Significant level = 0.01

In the above table, GFC is an independent variable whereas SIZ, LEV, INF and EG are control variables. According to the table, the beta coefficient value of the GFC is 0.039; however, it is statistically insignificant. It means that the performance of Islamic banks in Pakistan remain unchanged in response to the GFC. These results are also supported by the Erfani and Vasigh (2018) study which found that Islamic banks' profitability remained unaffected during the GFC period. However, these results also indicated that the behaviour of Islamic banks in Pakistan was different from the Islamic banks of other countries where the Islamic banks performance was impacted by the global financial crisis. For instance, studies done by Parashar and Venkatesh (2010) and Uppal and Mangla (2010) in the market of Gulf Cooperation Council (GCC) countries and Malaysia respectively found that Islamic banks' profitability was adversely impacted due to the GFC.

In terms of control variables, SIZ contributed significantly towards the performance of Islamic banks. Its beta coefficient value is 0.077 with a positive sign. It indicates that one unit increase in the size of Islamic banks operating in Pakistan will result in 0.077 unit increase in their performance. These results are also supported by the Ameer (2015) and Khalfaoui and Saada (2015) study which concluded the positive impact of size on the banks in the market of Pakistan and Tunisia respectively. These results are also in line with the claim of Murerwa (2015) that large size banks can attain a competitive edge by expanding their operations globally. Moreover, the efficiency which they attain because of their larger size, can increase their customer base also.



Conclusion

The crisis which emerged in 2007 because of United States “subprime” crisis spread to other economies through the connection with subprime assets, loss of investor trust in different classes of assets and a drying-up of the markets (Merrouche & Nier, 2010). This crisis was a threat of total collapse to the global financial system which led to the bailout of major financial institutions (Thakor, 2013). Due to the severity of such a crisis, this study aimed to analyse the contribution of the GFC towards the Islamic banking sector of Pakistan. To empirically investigate this issue, a sample of 5 full-fledged Islamic banks operating in Pakistan from the years 2006 to 2018 was collected and a Fixed Effect Model (FEM) was applied for analysis purpose. The results of the study revealed the insignificant relationship between the GFC and the Islamic banks’ performance in Pakistan. With respect to firm-specific and macro-economic control variables, this study found that an increase in the size of Islamic banks translated into higher performance. The major limitation of this study is the smaller sample size of Islamic banks as there are only 5 full-fledged Islamic banks which are operational in Pakistan. In terms of future recommendations, the same study can be replicated in the context of other developing countries’ Islamic banking market.

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