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Original Research Article

The relationship between credit risk and corporate governance in Islamic banking: An empirical study

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The study seeks to determine the relationship between the variables, corporate governance and credit risk in Islamic banks. The paper specifically deals with governance in Islamic banks which is two-fold: Anglo-Saxon governance system and Islamic Governance System. The article measures the impact of corporate governance variables on credit risk through an empirical study on a sample of Islamic banks during the period 2005-2012. The study found that there is a very strong relationship between the variables, governance and credit risk of Islamic banks. There is a negative relationship between non-performing loans ratio and the composition of the board of directors, the size of the board of directors, board committees, concentration of ownership, as well as the size of the *Sharia* supervisory board, while it is clear that there is a positive relationship between non-performing loans ratio and the size of the bank. This evidence provides beneficial information for supervising authorities, stakeholders and academics.

Key words: Corporate governance, credit risk, Islamic banks.

INTRODUCTION

Islamic banks, like their counterparts in conventional finance, get their profit through providing facilities to their customers. In order to earn profits, a typical Islamic bank uses many tools. These tools can be classified into two groups: sales based tools (*Murabahah, Ijarah, Istisna* and *Salam*) and profit and loss sharing tools (*Mudarabah and Musharakah*). In the course of life of each contract underlying these tools, Islamic banks undertake many risks but the major one is Credit risk (in *Mudarabah* and *Musharakah* this risk is called “capital weakness risk”). Credit risk can be defined as the probability that a counterpart of a contract fails to fulfill his engagements at times or not at all.

The events experienced by the global economy places the concept of governance atop of the interest of the business community and international financial institutions especially since 1997 the period of the Asian financial crisis, through the scandal of "Enron" company in 2003, leading to the financial crisis 2008. All these crises highlight the importance of corporate governance as a platform optimized for crises prevention and treatment.

Many researchers (Fawzi, 2003; Matoussi and Grassa, 2012; Mehram, 2004; Mohammed and Ahmad 2002; Rehman and Mangla, 2010) agree that corporate governance is important and what they represent to pay for the wheel of development and raise the level of performance. It also reduces the degree of credit risk-related administrative and financial corruption at institutional and national levels. Applications of corporate governance are different in the banking sector from other sectors because in banks exist a set of elements and interrelationships that do not exist in other sectors and this greatly affects the nature of the governance system.

This concept perhaps becomes more important and complex in Islamic banks due to its complex banking operations which vary in form and substance from those of conventional banks, in addition to the presence of two boards: the Board of Directors and *Shariah* Supervisory board whose objectives and functions overlap in some cases.

Problem statement

From the introduction, the following questions are addressed:

What is the nature of the relationship between the variables of corporate governance and credit risk of Islamic banks?

Research hypotheses

To answer this question, the study has formulated the following hypotheses:
1. There is a statistically significant relationship between the variables of corporate governance and credit risk in Islamic banks;
2. There is a negative relationship between the composition of the Board of Directors, Council committees and credit risk;
3. There is a negative relationship between the size of the Board of Directors and credit risk;
4. There is a positive relationship between the concentration of ownership and credit risk;
5. There is no relationship between the number of members of the Sharia Supervisory Board and the credit risk of Islamic banks.

LITERATURE REVIEW

Credit risk is one of the main risks that seriously affect banks' viability as evident from the 1997 financial crisis. To this extent, Sarker (1999) found that the amount of bad debt in Islamic banking is growing. Further, Khan and Ahmed (2001) found that bankers are of the view that there is a lack of understanding of risks involved in Islamic banking. This gap justifies new efforts to examine why Islamic banking experiences increasing bad loans and high credit risk. This necessitates an investigation into the factors influencing Islamic banking credit risk.

Several papers have outlined the specific risks inherent in Islamic banking. Errico and Farahbakhsh (1998) for instance point out that prudential supervision and regulations governing Islamic banks should place a greater emphasis on operational risks and information disclosure. They explain the special risks attached to PLS. In certain cases, Islamic banks cannot mitigate credit risk by demanding collateral from clients as their relationship is established on the basis of partnership; moreover, they do not have enough control over the management of projects financed in the form of *Mudarabah*. Khan and Ahmad (2001) claim that sharing Islamic banks' profit or loss with their investment account holders introduces withdrawal risk. They also argue that different Islamic modes of finance have their own unique risk characteristics due to the various constraints enforced by *Sharia*. Sundararajan and Errico (2002) suggest that the complexities of PLS modes of finance and the risks associated with the non-PLS activities should be taken into account to establish more effective risk management. They also point out various moral hazard issues that occur as a result of the special relationship between Islamic banks and investment account holders. Obaidullah (2005) argues that (deposit) withdrawal risk may persuade Islamic banks to deviate from traditional *Sharia* financing principles. This occurs if banks pay competitive market returns to investment account holders regardless of the bank's actual performance.

Corporate governance in Islamic banks

Islamic banks differ in form and content from conventional banks as it relies first on a set of principles that cannot be waived and these principles are mainly in:

1. Participation in profit and loss or profits and losses sharing;
2. Trading on the basis of the property and not on the basis of religion;
3. Commitment to the principle of bank transactions in the provision of Islamic *Shariah*.

While the second principle above relies on the principle of fixed interest bearing and/or to give, it does not require the legality of the funded projects. On this basis, the study has found that contracts which are based on the principle of participation in profit and loss are characterized by; 1.) A high degree of risk compared to those which are based on pre-determined interest; 2.) Management which requires fair and effective oversight and transparency and clear outlines of the rights and obligations of each party.

The principle of compliance with the provisions of Islamic law is not seen only as a matter of applying the principle of profit and loss sharing or lack of project financing but as a matter of the commitment of persons engaged in the bank to the principles of Islamic law in their behavior and actions.

Given the composition of the basic elements of governance, it is highlighted that conventional banks include four elements which are; shareholders, board of directors, executive management and the other stakeholders while for the Islamic banks, the fifth element is in the form of *Sharia board* which ensures the control of bank's activities are compatible with Islamic rules. Therefore, since the system of governance in Islamic banks are different from the system of governance in conventional banks, it can be said that Islamic banks face double governance systems based on the principles of Anglo-Saxon corporate governance imposed by the shareholders and customers of non-Muslim and international banking regulations in addition to the system of Islamic governance imposed by the shareholders and customers of Muslims as well as *sharia* supervisory boards (Mohammed and Ahmad, 2002.).

Characteristics of governance in Islamic banks

1. Islamic banks are obliged to apply for governance to take into account the interests of the owners of the largest investment accounts based on the principle of managed partnership (*Mudharaba*) any high degree of risk, compared to the interests of the owners of the accounts in the conventional banks carrying their risks due to the stability of their interests;
2. The presence of double governance resulting from the presence of two different boards: the board of to monitor the administrative part of the bank and the *Shariah* supervisory board to monitor the extent to which banking operations are carried out in accordance with Islamic law;
3. The presence of two different banks can increase the severity of conflict of interest and of course, may generate some difficulties in the activity of the Islamic bank.

Credit risks in Islamic banks

Credit risk especially in *Musharakah*, *Murarabah*, *Salam* and *Istisnah* contracts are thus studied. The expected risks in these contracts arise as a result of inability of debtors to meet their financial commitments on the dates of maturity. Consequently losses are incurred by Islamic banks. To minimize risk, Islamic law allows collateral which is considered as security against the debt risk while third-party guarantees have also been introduced in addition to loan loss reserve (LLR) to forestall credit risk.

Islamic banks are still no exception to the four main types of risks that lead to systemic failure of which the most critical is the credit risk (Fleifel, 2009). According to Chapra and Khan (2000) and Khan and Ahmed (2001), credit risk is an important financial risk that is included within default risk which covers more than three-quarters of the risks in an average Islamic bank's asset portfolios in the banking book. Credit risk causes more than three-quarters of Islamic bank failures and it appears to be greater than other risks, especially with PLS (profit-and-loss-sharing) modes of financing. Furthermore, default risk also introduces market and liquidity risks. On the other hand, in the Non-PLS modes of contracts such as *Murabahah* and *Ijarah*, market risk is higher than the credit risk. This given, the fixed income mode adopted in these contracts and the rate of bank profit is affected by the market's volatility (Khan and Ahmed, 2001).

According to Al-Jarhi and Iqbal (2001), most Islamic banks prefer fixed return modes, especially *murabahah* modes which represent the dominant form of financing. They found that the share of *mushārakah-mudarabah* in the total financing is smaller than *Murabahah* (that is to say, *Murabaha*. and *Ijarah* form 75% of the total financing with only 25% for *Musharakah-mudarabah*, *Istisnah* and *Salam*).

The dominant contracts are not based on PLS principle as they are akin to purchasing good/services or leasing capital goods/consumer durables. The returns to investors are fixed, while the PLS-based instruments are less dominant. Therefore, returns to investors would depend on the volatility in the market. Hence, Islamic banks try to aim for a balance between the two modes; non-PLS and PLS financing. There is the expectation that these two modes have significantly different impacts on banking credit risk formation (Al-Jarhi and Iqbal, 2001). Therefore, Islamic banks should be operationally well-prepared to manage credit risks to ensure the maintenance of their performance as well as gain growth.

METHODOLOGY

Variables of the study

The model includes a dependent variable (non-performing loans ratio), which reflects credit risk in Islamic banks while six independent variables reflect five key variables of corporate governance which consist principally of the composition of the board of directors (measured by the number of independent members of the Council), the size of the board of directors (expressed as the number of managers in the Council), number of board committees, concentration of ownership (measured by the percentage of shares owned by major shareholders) and the size of the *Shariah* supervisory board (measured by the number of members of the *Shariah* supervisory board); the sixth-independent variable is called control variable which is the size of the bank measured by the logarithm of total assets (Table 1).

Model and sample

To measure the relationship between corporate governance variables and credit risk in Islamic banks; correlation analysis is used according to the following equation:

$$CRIS_{it} = \alpha 0 + \beta_1 BCM_{it} + \beta_2 BSZ_{it} + \beta_3 CBD_{it} + \beta_4 OCN_{it} + \beta 5SSB_{it} + \beta_5 SZE_{it} + \varepsilon_{it}$$

where (NPL_{it}): the dependent variable that shows the credit risk of Islamic banks measured by Non-performing loans ratio (NPL/total loans); (β_1-β_5): coefficients of independent variables; BCM_{it}: the number of independent members of the Board; BSZ_{it}: the number of managers in the Council; CBD_{it}: the number of committees in the Board of Directors; OCN_{it}: percentage of shares owned by major shareholders; SSB_{it}: size of the Sharia Supervisory Board; SZE_{it}: the size of the Islamic bank; ε_{it}: random error.

The sample studied comprised 12 Islamic banks having been selected based on the availability of data (Table 2). The data were obtained through the annual reports of Islamic banks under study and *ZAWYA* during the period 2005-2012. The evolution of the average variables of Islamic banks under study during the period 2005-2012 is shown in Table 3 and illustrated in Figure 1.

Table 1. Variables of the study

Variable		Symbol	Measurement
Dependent variable	Credit risk	CRIS	Non-performing Loans / Total loans
Independent variables	The composition of the Board of Directors	BCM	The number of independent members of the Board
	The size of the Board of Directors	BSZ	The number of managers in the Council
	Board committees	CBD	The number of committees in the Board of Directors
	Concentration of ownership	OCN	Percentage of shares owned by major shareholders
	Size of the Sharia Supervisory Board	SSB	Number of members of the Sharia Supervisory Board
	The size of the bank (variable control)	SZE	Logarithm of total assets

Table 2. The study sample (2005-2012)

Country	Name of bank
	Dubai Islamic Bank
Emirates	Abu Dhabi Islamic Bank
	Emirates Islamic Bank,
	Sharjah Islamic Bank
	Kuwait Finance House,
Kuwait	Kuwait International Bank
	Al-Rajhi Bank
KSA	Bank Al Bilad
	Qatar Islamic Bank
Qatar	Qatar international Islamic Bank
	Bahrain Islamic Bank
Bahrain	Shamil Bank of Bahrain

Table 3. Evolution of the average variables of the study during the period 2005-2012

Year	CRIS	BCM	BSZ	CBD	OCN	SSB	SZE
2005	2.56	2	4	2	0.17	2.5	4.53
2006	3.45	3	5	2	0.19	3.5	5.04
2007	3.56	3	6	3	0.21	3.5	6.02
2008	3.87	3	6	3	0.25	4	6.24
2009	2.54	4	7	4	0.28	4.5	5.12
2010	1.67	6	9	4	0.31	5	6.64
2011	1.23	8	10	5	0.36	5.5	7.28
2012	1.04	8	10	5	0.35	5.5	8.59

Table 4 shows the most important statistical data for the variables used in the study; where it is clear that the dependent variable NPL is estimated at about 2.49%, and the average variable composition of the Board of Directors (BCM) at about 4.62. Thus, there is an acceptable number of independent members which increases the independence and transparency of the Council and then the effectiveness of corporate governance.

As for the variable size of the Board of Directors (BSZ), it emerges that the average number of managers in the Council is estimated at 3.5; for variable board committees (CBD), the estimated average number of committees in the Board of Directors is about 7 committees which is close to the average number of committees recommended by corporate governance rules.

For the variable concentration of ownership (OCN), it

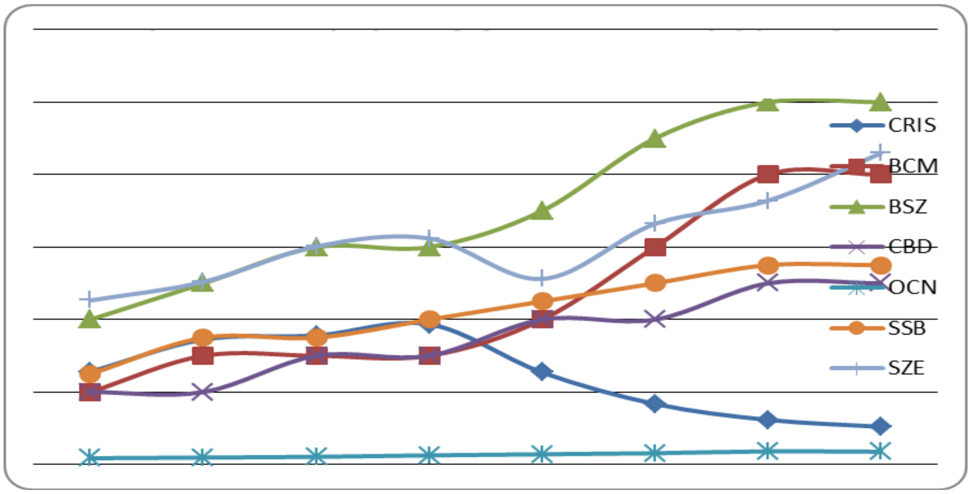

Figure 1. Evolutin of the average variables of the study during the period 2005-2012

Table 4. Statistical data for the variables of the study

Variable	Lowest value	Greatest value	Average	Standard deviation
NPL	1.07	3.87	2.49	1.09
BCM	2.00	8.00	4.62	2.386
BSZ	2.00	5.00	3.50	1.195
CBD	4.00	10.00	7.12	2.295
OCN	0.17	0.36	0.26	0.072
SSB	2.5	5.5	4.25	0.123
SZE	4.53	8.59	6.18	1.331

Table 5. Estimation of parameters

Variable	Coefficient	Std. error	t-Statistic	Prob.
C	1.239696	2.783384	0.445392	0.0332
BCM	-0.692624	0.606191	-1.142584	0.0577
BSZ	-0.278527	1.099922	-0.253225	0.0421
CBD	-0.045573	1.316626	-0.034613	0.0780
OCN	-10.92715	35.61067	-0.306850	0.0105
SSB	-1.618881	1.754811	-0.922539	0.0256
SZE	0.422669	0.481455	0.877900	0.0413

R-squared	0.927103	Mean dependent var.	2.490000
Adjusted R-squared	0.889719	S.D. dependent var.	1.091578
S.E. of regression	0.779757	Akaike. info criterion	2.010891
Sum squared resid.	0.008022	Schwarz criterion	2.080402
Log likelihood	-1.043563	F-statistic	2.119655
Durbin-Watson stat	2.493449	Prob(F-statistic)	0.182176

Dependent Variable: CRIS; Method: Least Squares; Sample: 2005-2012; Included observations: 8

emerges that the average proportion of shares owned by major shareholders is estimated at about 26% of the total stock; none exceeded 50%, a ratio showing the inability of major shareholders to control the decisions of the bank and direct their own interests. This helps in the application of the principles of corporate governance.

With regard to the variable, size of the *Shariah* Supervisory Board (SSB), it emerges that the average number of members is about 4 members; which facilitates the work of the *Shariah* supervisory board. Effective *Shariah* governance is crucial in strengthening the credibility of Islamic banks because when the number of members of any board is high, it can create a conflict between them especially in the *Shariah* board as it is concerned with the religious aspect of the overall behaviour of Islamic banks and can thus negatively affect the performance of banks.

Estimation of parameters

Table 5 shows the results of the estimated correlation function between non-performing loans which reflects credit risk of Islamic banks and the variables of corporate governance.

RESULTS

Table 5 shows the estimated coefficients of the model, the value of the ***t*** statistic, the standard deviation and probability of error. The results of the coefficient of determination (R^2) (0.89) implies that there is a very strong relationship between credit risk (CRIS) and the variables of corporate governance. The results show that the Durbin Watson (DW) coefficient (2.49) shows that there is no autocorrelation.

Through estimated coefficients of the independent variables, it is clear that there is a very strong relationship between the variables of governance and credit risk of Islamic banks as there is a negative relationship between non-performing loans ratio and composition of the board of directors, size of the Board of Directors, board committees, concentration of ownership, as well as the size of the Sharia Supervisory Board. However, there is a positive relationship between non-performing loans ratio and the size of the bank.

Conclusion

The application of the principles of corporate governance in Islamic banking is imperative by clarifying contracts and determining the terms and conditions, both religious and organizational carefully, including moving away from any form of fraud. Islamic banks will be efficient if managers succeeded in achieving two goals at the same time; a financial goal to meet the demands of shareholders and investors and a religious goal for the banking operations in terms of legitimacy.

The empirical study found the following results:

1. There is a negative relationship between the credit risk of Islamic banks (non-performing loans) and the following variables of governance: the composition of the Board of Directors (the number of independent members), the size of the Board of Directors (number of directors) , the number of committees in the Board of Directors, the number of members of the Sharia Supervisory Board and the concentration of ownership (the ratio of shares owned by major shareholders).

2. There is a positive relationship between the credit risk of Islamic banks (non-performing loans) and size of Islamic banks:

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