Journal of Open Innovation: Technology, Market, and Complexity

MDPI

Article

Corporate Governance, Shariah Governance, and Credit Rating: A Cross-Country Analysis from Asian Islamic Banks

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Received: 22 September 2020; Accepted: 25 November 2020; Published: 30 November 2020

Abstract: This study aimed to investigate the association between corporate governance characteristics, shariah governance characteristics, and the credit rating of Asian Islamic banks. To do so, we collected data from 22 banks during the 2006–2018 period. In total, we observed 286 data points. Credit rating was measured through an adaption of the credit rating scale that measured the long term credit of Islamic banks on an ordinal scale. From these data, 19 scores (Aaa) were considered high credit ratings and 1 score (C) was considered a low credit rating. Descriptive statistics, correlations, and the ordered logit regression model were applied in a panel setting. We found that the board interlock, board independence, CEO duality, and board foreign directorship negatively affected credit ratings. We also found that the board size, board accounting, finance knowledge, presence of women on the board, shariah board size, presence of supervisory shariah board, the shariah board interlock, and presence of female shariah scholars all were positively associated with credit ratings. This study suggests that Islamic banks can access more funds with higher shariah compliance. As such, we concluded that evaluating organizations' credit ratings must consider shariah governance attributes as determinants of the credit rating of Islamic banks.

Keywords: shariah governance; credit rating institutions; order logit model

1. Introduction

The Islamic banks have distinctive characteristics of shariah compliance and profit & loss sharing Model [1,2]. During the 2008 global economic crisis, Islamic banks' credits and assets performed better than conventional banks because Islamic business model factors helped limit profitability reductions [3]. The model of Islamic financial institutions is more favorable during economic and financial crises because the aspect of risk-sharing distributes the total risk among all parties instead of only one party; therefore, Islamic bank losses are usually less compared to conventional banks during an economic crisis. Islamic bank assets are more than USD 1.5 trillion, operating and rapidly growing across the world [4]. The Islamic banking system differentiates from the conventional banking system based on shariah compliance. Islamic banks face several operation risks due to their funding structure based on profit and loss sharing [5]. In a conventional banking system, the governance role is limited to stockholders and management but in the Islamic banking system, shariah governance deals with all stakeholders. The objective of shariah governance is to resolve all problems between stakeholders according to shariah rules guided by the shariah board. Islamic banks are based on profit and loss sharing but traditional banks are based on interest so these are naturally two different financial institutions [6]. The three big credit rating agencies hold a 95% share of the ratings; Fitch, Moody, and S&P (Standard and Poor's) have the same credit rating methodologies for Islamic banks and conventional banks [5,7]. Moody believes that the criteria of credit ratings are flexible and can be applied to all global corporations, including Islamic and conventional banks [8]. Fitch believes that there is no need for different credit rating policies for Islamic and conventional financial institutions because both banks have engaged in the same lending policies and risk handling techniques. PACRA (Pakistan Credit Rating Agency) also has the same credit evaluation procedure for traditional and Islamic banks [2]. Islamic banks have a unique governance called the shariah governance, which is ignored by credit rating agencies. The two naturally different financial institutions must not be evaluated on the same criteria. Evaluating Islamic banks while ignoring the shariah board may not show the true picture of their credit rating. Innovation is one of the key factors and provides prosperity, sustainability, and competitive advantage to the firm [9]. Therefore, an effective corporate board and shariah governance board is essential for improving the credit rating of Islamic banks.

Our study's contributions includes, firstly, an up-to-date literature review on corporate governance, shariah governance, and credit ratings. Secondly, we suggest how credit rating evaluations conducted by institutions and policymakers affects the shariah governance credit rating. Thirdly, the study provides a significant literature review on corporate governance and credit rating because previous literature mainly focused on firm performance [1]. Only a few studies including [1,2,10,11] and [12] conducted research from a Sukuk perspective and no other published studies have been conducted on governance and credit rating from the Islamic banking perspective. Fourthly, we also suggests improvements for credit evaluation agencies in terms of how they can revise the credit evaluation procedures to reach fair and true credit ratings for Islamic banks.

2. Literature Review

The relationship between the dual board structure in Islamic banks and firm performance was explored by [13]. The dual board structure in Islamic banks can be explained as two boards: the board of directors and the shariah board. Data were collected from 45 Islamic banks in two different regions: Southeast Asia and the Gulf countries. Descriptive statistics, person correlation, variance factor inflation, Wooldridge test (autocorrelation detection test), and GMM (Generalized method of moments) were used to analyze the data. The study results show that the shariah supervisory board negatively affects the return on assets but positively affects the multi-bank performance in South Asia. The study concluded that the supervisory shariah board is more effective in South Asian countries than in Gulf countries. Accounting and finance knowledge of shariah board members, presence of a mufti on the board, presence of foreign shariah scholars, and presence of shariah scholars working in other Islamic financial institutions have no significant association with the soundness of Islamic banks (IBs) [14]. IBs must enhance shariah scholars' competencies and skills by providing training and learning sessions. Further, they must maintain the independence of shariah scholars and enhance the shariah board size, which can positively affect IB performance [15]. Corporate governance and shariah governance show firm performance in the Middle East and North African regions, as discussed by [6]. Herein, we collected 10-year data from 2007–2016 of 127 Islamic and conventional banks. The study applied a regression analysis and results showed that shariah governance is significantly associated with firm performance. Corporate governance are also associated with firm performance. A return on assets and return on equity were used to measure bank performance in Sri Lankan financial institutions [16]. Five years of data were collected from 2008–2012 and the results suggested that board size is positively associated with Islamic bank performance. There was an association between corporate governance, shariah board attributes, and credit rating in Islamic banks in Pakistan [2]. The study collected five years of data from 2013–2017 for Islamic banks. The corporate board attributes included board size, board independence, foreign representation on the board, and presence of female directors on the board. To measure the effectiveness of shariah governance, we used shariah board interlock, shariah board size, shariah board business knowledge, and presence of a supervisory board. The outcome variable was credit rating, wherein the credit rating score was allocated to each category. The study applied an ordered logit regression, which explained that credit rating is negatively affected by corporate board size, presence of shariah supervisory board, and presence of foreign members on the board. Further study concluded that credit ratings improve when shariah scholars with a business background are on the board, as well as when female directors are on the board.

The corporate governance characteristics can affect Islamic bank performance [17]. The governance characteristics included the size of the board, gender diversity on the board, CEO (Chief Executive Officer) duality and the presence of block holders. The shariah committee's existence and size are used as a proxy of shariah governance. The sample size was comprised of 102 Islamic banks from different countries and data was collected from 2008–2012. The study applied descriptive statistics, correlation, and multiple regression, concluding that the size of the corporate board and the number of block holders significantly affected firm performance. However, CEO duality partially affected firm performance. Further, the study found that the shariah committee size and the existence of a shariah committee did not significantly affect firm performance. In Malaysia, exploring the association between corporate risk and governance characteristics is essential to manage the risk [18]. The study sample size included 302 shariah compliance firms from 2013–2016. The study considered board independence, CEO duality, and board size as independent variables. It also applied the regression and descriptive statistics using SPSS 29. The study found no significant relationship between firm risk and board size but found that board independence is negatively associated with firm risk.

To understand firm success, it is critical to examine risk-taking behavior and shariah compliance of Islamic banks, as well as the mechanism of corporate governance [19]. The study sample size contained 60 Islamic banks from the Gulf and non-Gulf countries. Data was collected from 2014 to 2018 and then was subjected to the correlation test, descriptive statistics, and Ordinary least Square (OLS) regression for quantitative analysis. The results explained that the board size positively affected profitability and negatively affected risk-taking. The study also explored that the presence of independent directors on the board enhanced the asset quality and adversely affected risk-taking. The research also found that the shariah board interlock, shariah board size, and shariah board members expertise were negatively associated with risk-taking. The governance characteristics and shariah board characteristics affected the Islamic bank credit rating in Gulf countries [1]. The study used correlations and ordered logit regression to analyze the data. The analysis found that female board members and board independence positively affected credit ratings.

3. Hypothesis Development

3.1. Board Interlock and Shariah Board Interlock

The agency theory argues that directors do not properly monitor management due to network cohesiveness and social status [20]. On the other hand, the resource dependence theory supports that board interlock positively affects corporate firm performance [21]. In highly uncertain conditions, firms prefer board interlocks [22] The business hypothesis explains that board members who offer services in other organizations become over-committed and unable to perform their responsibility effectively. The presence of board members in more than four corporate boards can "overwhelm" the directors [23]. The experience hypothesis argues that board members with interlock have more experienced social networks and can access valuable resources [24]. The engagement of the board of directors in the other five financial institutions is considered as a board interlock [1].

From the above discussion, the study assumed that the presence of director interlock on the board accessed different tangible and intangible sources. Further, in an uncertain environment, the Islamic banks must prefer board interlock to reduce uncertainty. The study also expected that the shariah scholars with interlock were reputable scholars with up-to-date knowledge of the industry. The presence of reputable shariah scholars could enhance shariah compliance in the Islamic banks, resulting in high credit ratings.

Hypothesis 1: *The corporate board interlock and credit rating in Islamic banks are positively associated.*

Hypothesis 2: *The shariah board interlock and credit rating in Islamic banks are positively associated.*

3.2. Board Size and Shariah Board Size

Board size positively affects firm performance [16,25,26]. There is no significant relationship between board size and credit rating [1,27]. The increase in board size causes lower credit ratings [2]. Board size is significantly and positively associated with firm performance in Indonesian Islamic banks [28]. The resource dependence theory argues that a large board size can connect a firm's external environment more effectively and improve access to resources [29]. The resource dependence theory also explains that the board arranges resources for a firm. Firms with a large board can access the resources for an external environment more easily. The stakeholder theory explains that the presence of a large board may allow stakeholders to become part of the board, which protect stakeholder interests. The stewardship theory also explains that firm executives are trustworthy because they are motivated to create wealth for shareholders. Thus, there is no need for a large board to monitor them. From the above discussion, the study expects that, in the presence of a large board, stakeholders can be accommodated. Further Islamic banks with large boards can access more resources or funds, leading leads to a low probability of default and enhances credit ratings. The study also expects that the large shariah board may allow different fiqh scholars on the board, which results in good interpretation of a product and allows investors to gain confidence.

Hypothesis 3: *The board size of a firm is significantly and positively associated with the credit rating of Islamic banks.*

Hypothesis 4: *The shariah board size of the firm is significantly and positively associated with the credit rating of Islamic banks.*

3.3. Board Independence

Board independence can be defined as board members who are not major stakeholders of a company, i.e., shareholders, auditors, creditors, debtors, employees, or anyone with any significant business with the firm whose decisions do not significantly affect the financial or political condition of a board member or relative. This significant positive link exists between board independence and firm performance [30,31]. There is no significant association between board independence and firm performance [32]. Further, board independence adversely affects firm performance [33].

The agency theory explains that the monitoring function of a board can effectively be achieved through independent directors. The resource dependence theory also explains that independent, outside directors are professional, connecting the firm to external sources more efficiently.

We expect that the presence of independent directors improves the monitoring function of boards and connects firms to external sources, resulting in Islamic banks accessing low-cost funds and firm credit ratings.

Hypothesis 5: *The presence of independent directors on the board positively affects the credit rating of Islamic banks.*

3.4. Board Accounting and Finance Knowledge and Shariah Board Accounting and Finance Knowledge

The number of accounting experts are positively associated with firm performance [34]. Board members with business-based backgrounds are more effective because they better understand how to monitor corporations [35]. One study [10], however, found that board expertise adversely affected credit rating. Yet we believe that corporate board members must have a business background so that they can understand the financial reports and critically examine other financial policies, including dividend policy, etc. No relationship exists between shariah board members' accounting-based backgrounds and credit rating [1]. There is a positive and significant relationship between credit rating and shariah board members with business knowledge in Pakistan's Islamic banks. Shariah scholars also have a business background so they can monitor all transactions and financial policies with shariah compliance [2].

From the above discussion, we assume that board members with accounting and finance knowledge enhances the monitoring and understanding of the board to critically examine financial matters. Further, the presence of accounting and finance knowledge in shariah scholars enhances the shariah compliance, leading to high credit rating.

Hypothesis 6: *Board members with accounting and finance knowledge positively affect the Islamic bank credit rating.*

Hypothesis 7: *Shariah scholars with accounting and finance knowledge are positively associated with credit rating.*

3.5. Foreign Directors and Shariah Foreign Scholars

Foreign directors on the board improve the credit rating of Islamic banks [1]. A firm's value can be increased by increasing the number of foreign directors on the board [36]. The resource dependence theory argues that foreign directors connect a firm with international markets and arranges resources for the firm on an international level. In the literature, various studies oppose foreign directorship on the board. It has been argued that foreign directors decrease firm performance because they engage in international misreporting and show laziness when replacing a poorly performing CEO [37]. Foreign directors and foreign shariah scholars have poor attendance due to financial resources and time limitations.

We expect that foreign directors and shariah foreign scholars have poor attendance at board meetings, thus resulting in poor monitoring, shariah compliance, and low credit rating.

Hypothesis 8: *The presence of foreign directors on the board negatively affects credit ratings.*

Hypothesis 9: *The presence of shariah foreign scholars on the board negatively affects credit ratings.*

3.6. Women Directors and Shariah Women Scholars

Gender diversity is significantly and positively associated with small- and medium-size firms [38]. Board diversity is negatively associated with firm performance in countries with high EPO (Economic Participation and opportunity index) due to tokenism [39]. Gender diversity is not a determinant of firm value [40]. Boards with women prioritize teamwork and discourage hierarchies. Corporate boards with female directors are more disciplined and demonstrate strong stewardship [41].

From the above discussion, we assume that women have fewer attendance issues and prefer teamwork, which results in the improved monitoring function of the board. The study also suggests that the presence of female scholars on the shariah board increases the number of meetings, leading to high monitoring and shariah compliance.

Hypothesis 10: *The presence of female directors on corporate boards positively affects credit ratings.*

Hypothesis 11: *The presence of female shariah scholars on shariah boards positively affects credit ratings.*

3.7. Supervisory Shariah Board

The shariah supervisory board is more effective than other forms of the shariah governing body in Islamic financial institutions. The shariah advisory board and shariah committee advise management, yet but shariah supervisory board can force management to conduct affairs with shariah compliance [42]. The existence of a shariah supervisory board could be used to optimize disclosure level, leading to banks' excellent reputation. Thus, banks can access more resources [43]. Therefore, we expect that in the presence of the shariah supervisory board, shariah compliance is more effective, which results in better confidence among investors and an improved Islamic bank credit rating.

Hypothesis 12: *The existence of a shariah supervisory board is positively associated with Islamic bank credit rating.*

3.8. CEO Duality, CEO Tenure, and CEO Founder/Founding Family

The agency theory explains that a board's primary responsibility is to monitor management. If a CEO holds the position of board chairman, then the monitoring function of the board remains ineffective [44]. The agency theory explains that a powerful CEO negatively affects Islamic bank performance [10]. CEO duality causes poor monitoring over banks and adversely affects a firm's value [45,46]. The organization must shape the corporate structure according to the firm environment. CEO duality is positively associated with firm performance in an uncertain environment due to the characteristics of quick decision-making and motivating in highly competitive environments [47]. As the founder or member of the founding family, CEOs prefer their own interest or their family's interests, often causing organization's to underperform [48]. The stewardship theory explains that CEOs are self-motivated, respect the interest of the shareholders, and can more efficiently create value for the firm by using unity of command. A CEOs tenure negatively affects credit rating because tenured CEOs can influence board decision-making, which results in the board becoming ineffective. The relevant transaction hypothesis discourages the inclusion of a CEO or member of founding family. This principle argues that a CEO or founding family member's primary focus is to increase the wealth of the founding family rather than maximizing shareholder wealth.

From the above discussion, we expect that the CEO's duality adversely affects the monitoring function of the board. Further, we assume that long tenured CEOs and founding family members negatively affect decision-making because their creation of value is only for the founding family, which is usually at the cost of the stakeholders, and thus results in a poor credit rating.

Hypothesis 13: *The CEO's duality is negatively associated with Islamic banks credit rating.*

Hypothesis 14: *The CEO's tenure is negatively associated with Islamic banks credit rating.*

Hypothesis 15: *The CEO or founding family member is negatively associated with Islamic banks credit rating.*

4. Materials and Methods

Table 1 explains the description and signs of different variables. Table 2 describes the scale of the credit rating used by credit rating agencies to access a firm's creditworthiness. The study's initial sample size consisted of 36 banks, yet 14 banks were excluded due to data unavailability. Thus, the final sample size consisted of 22 Islamic banks from Asian Islamic countries. Data was collected over 13 years, from 2006 through 2018, and data sources included Islamic bank annual reports, websites, as well as the Bankscop, Zawya, and Islamic markets.

Table 1. Corporate and shariah board: characteristics and description.

Variable	Sign	Description
Board Interlock	BINTER	Percentage of board directors who hold 5 or more than 5 positions in other financial institutions.
Board Size	BSIZE	The number of members on a corporate board.
Board Independence	BIND	Percentage of board directors who are independent on the board.
Board Accounting and Finance Knowledge	BAFK	Percentage of board directors who have a Business/Economics degree or diploma.
Foreign Directors	BFD	Percentage of board directors who are foreign.
Women Directors	BWD	Percentage of board directors who are women.
CEO Tenure	CEOT	The number of years the CEO has held their position.
CEO Duality	CEOD	1 = if a person held both the CEO and chairman positions at the same time; 0 = if a person did not hold the CEO and chairman positions at the same time.
CEO Founder/Founding Family	CEOF	1 = if the CEO belongs to the founding family; 0 = if the CEO did not belong to the founding family.
Shariah board size	SBS	The number of shariah scholars on the shariah board.
Supervisory Shariah Board	SUPER	1 = if the shariah board is supervisory; 0 = if the shariah board is non-supervisory.
Shariah Board Interlock	SBINTER	Percentage of shariah scholars on the shariah board who are shariah board members of other Islamic financial institution (i.e., 5 or more).
Shariah Board Accounting and Finance Knowledge	SAFK	Percentage of shariah scholars with Accounting and Finance degrees or diplomas, or are an AAOFI (Accounting and Auditing Organization for Islamic Financial Institutions) member.
Shariah Women Scholars	SWS	Percentage of female shariah scholars on the shariah board.
Shariah Foreign Scholars	SFS	Percentage of shariah scholars with a foreign nationality.

Table 2. Credit rating scale and score.

Debt Rating	Assigned Score Grade	Grade
Aaa	19	Investment
Aa+	18	Investment
Aa	17	Investment.
Aa−	16	Investment
A+	15	Investment
A	14	Investment
A−	13	Investment
Baa+	12	Investment
Baa	11	Investment

Table 2. *Cont.*

Debt Rating	Assigned Score Grade	Grade
Baa−	10	Investment
Ba+	9	Speculative
Ba	8	Speculative
Ba−	7	Speculative
B+	6	Speculative
B	5	Speculative
B−	4	Speculative
Caa+	3	Speculative
Caa	2	Speculative
C	1	Speculative

We measured the credit rating (CR) score using a scale used by [1]. We adapted this scale and gave a different score to each category.

We had an ordinal dependent variable and the ordered logit model was an appropriate statistical tool to analyze the data [49]. Therefore, we applied the ordered logit regression model to analyze the data. The regression equation is as follows:

$$\begin{aligned} CR = \beta_0 &+ \beta_1 BINTER + \beta_2 BSIZE + \beta_3 BIND + \beta_4 BAFK + \beta_5 BFD + \beta_6 BWD \\ &+\beta_7 CEOT + \beta_8 CEOD + \beta_9 CEOF + \beta_{10} SBS + \beta_{11} SUPER \\ &+\beta_{12} SBINTER + \beta_{13} SAFK + \beta_{14} SWS + \beta_{15} SFS + \beta_{16} ROE \\ &+\beta_{17} ROA + \beta_{18} ASSETS + \beta_{19} AGE + \in \end{aligned}$$

5. Results

Table 3 shows descriptive statistics for the average credit rating (13.357). The most repeated credit rating score in the data was 13. The minimum and maximum credit rating score of Islamic banks was 19. Moreover, 25.5% board of board members held the position of directorship on other boards. The average board size for the corporate board was 9. The largest corporate board was 21 and the smallest corporate board had 4 members. On average, 47.8% board members were independent, 67.4% of members had business and accounting backgrounds, 16.5% were foreign, and only 2.7% board members were women. The average CEO tenure was 4.58 years. CEO duality was 4.5% and an average of 22% of CEO offices were held by a founding family member. Further, the average shariah board size was 5. Next, 42.2% of shariah scholars had board interlock and 31.3% of shariah scholars had an accounting base background. The study also explained that female shariah scholars on the board and shariah foreign scholars was 3.8% and 26.5%, respectively. Table 4 shows the correlation matrix among corporate board attributes, shariah board attributes, and shariah board attributes. The correlations explained that there was no multicollinearity in the data. Table 5 shows that the board interlock significantly and negatively affected credit ratings, with a coefficient of −1.47 at a 1% level of significance. Board size positively (coefficient = 0.267) and significantly affected the credit rating of Islamic banks at a 1% level of significance. The positive sign supports the resource dependence theory, which argued that a large board size enhanced the credit rating for Islamic banks. The results explained that a board's independence and presence of foreign directors were negatively associated with an Islamic bank credit rating at a 1% level of significance (−1.438 and −5.237 coefficients). The board's accounting and finance knowledge, as well as its female representation, had coefficients of 2.422 and 5.245. This positively affected the credit rating at a 1% significance level. The CEO duality significantly and negatively affected the credit rating with a coefficient of −3.966. The study's major finding stated that women play an essential role whether on the shariah board or corporate board. Our results indicated that women on the shariah and corporate boards significantly affected the credit rating.

Shariah board size, supervised shariah board, and shariah board interlock in the shariah board significantly and positively affect credit rating with coefficients 0.216, 1.536, and 1.417, respectively. Using the resource independence theory and agency theory, we expected that corporate board interlock and board independence both positively affected the credit rating for Islamic banks. However, these results contradict the study expectation, which suggested that the factors that wolf most significantly affect credit rating were CEO tenure, a CEO who belongs to founding family, shariah board members with accounting and finance knowledge, and shariah board members who were foreign scholars.

Our results confirm other studies [1] that stated that shariah board attributes and corporate board attributes affect credit ratings. Our results further suggest that the 1 unit increase in board interlock, board independence, a foreign board director, and CEO duality could decrease log odds of a 1.47, 1.438, 5.2, and 3.9 credit rating, given that all other variables in the model were constant.

Board size, members with accounting and finance knowledge, and women board members increased to 0.267, 2, 42, 5.24 in the log odds for the credit rating of Islamic banks, given that all other variables held constant. One unit increased on the shariah board, including board size, supervisory, board interlock, and presence of women. As such, we would expect 0.216, 1.536, 1.417, and 6.82 increases in the log odds for the credit rating of Islamic banks.

Table 3. Descriptive statistics.

Variable	Mean	Median	Mode	S.D	Min	Max
CR	13.357	13.000	13.000	2.868	3.000	19.000
BINTER	0.255	0.167	0.000	0.267	0.000	1.000
BSIZE	9.105	9.000	9.000	2.654	4.000	21.000
BIND	0.478	0.449	0.000	0.271	0.000	1.000
BAFK	0.674	0.667	1.000	0.239	0.222	1.143
BFD	0.165	0.000	0.000	0.249	0.000	1.000
BWD	0.027	0.000	0.000	0.071	0.000	0.400
CEOT	4.484	3.000	1.000	3.992	0.000	21.000
CEOD	0.045	0.000	0.000	0.209	0.000	1.000
CEOF	0.220	0.000	0.000	0.415	0.000	1.000
SBS	4.692	5.000	5.000	1.882	3.000	14.000
SUPER	0.731	1.000	1.000	0.444	0.000	1.000
SBINTER	0.422	0.400	0.000	0.332	0.000	1.000
SAFK	0.313	0.333	0.333	0.245	0.000	1.000
SWS	0.038	0.000	0.000	0.098	0.000	0.400
SFS	0.265	0.250	0.000	0.249	0.000	0.800

Table 4. Correlation matrix.

	BINTER	BSIZE	BIND	BAFK	BFD	BWD	CEOT	CEOD	CEOF	SBS	SUPER	SBINTER	SAFK	SWS	SFS	CR
BINTER	1.000															
BSIZE	−0.110	1.000														
BIND	0.144	−0.061	1.000													
BAFK	−0.045	−0.136	−0.247	1.000												
BFD	−0.032	0.248	−0.211	0.102	1.000											
BWD	−0.252	0.102	0.291	−0.007	0.165	1.000										
CEOT	0.024	−0.060	−0.142	0.271	0.096	0.031	1.000									
CEOD	0.010	−0.029	0.062	−0.028	0.167	0.300	0.019	1.000								
CEOF	−0.144	−0.044	−0.021	−0.386	0.275	−0.145	−0.082	−0.039	1.000							
SBS	−0.031	0.120	0.129	−0.057	0.363	0.421	−0.117	0.499	−0.035	1.000						
SUPER	0.244	−0.325	0.466	−0.067	−0.125	0.026	0.014	−0.177	−0.018	−0.178	1.000					
SBINTER	0.073	0.270	0.390	−0.357	−0.151	0.133	−0.345	0.305	0.132	0.323	−0.129	1.000				
SAFK	−0.060	0.275	−0.094	−0.009	0.267	0.234	−0.143	0.381	−0.083	0.251	−0.377	0.323	1.000			
SWS	0.039	−0.088	−0.153	−0.148	−0.029	0.025	0.099	0.106	−0.032	−0.020	−0.237	0.119	0.468	1.000		
SFS	0.071	−0.193	−0.451	0.264	0.167	0.005	0.255	−0.180	−0.084	−0.204	0.087	−0.632	−0.330	0.023	1.000	
CR	0.007	0.144	−0.088	0.054	0.242	0.128	−0.052	0.360	−0.037	0.355	−0.222	0.398	0.519	0.141	−0.309	1

Table 5. Ordered logistic regression.

CR	Coef.	Std. Err.	Z	P > z	Expected Sign
BINTER	−1.47	0.534	−2.76	0.006	Positive
BSIZE	0.267	0.065	4.10	0.000	Positive
BIND	−1.438	0.498	−2.88	0.004	Positive
BAFK	2.422	0.676	3.58	0.000	Positive
BFD	−5.237	0.597	−8.77	0.000	Negative
BWD	5.245	1.782	2.94	0.003	Positive
CEOT	−0.011	0.0340	−0.34	0.735	Negative
CEOD	−3.966	0.677	−5.86	0.000	Negative
CEOF	0.192	0.355	0.54	0.588	Negative
SBS	0.216	0.074	2.90	0.004	Positive
SUPER	1.536	0.446	3.44	0.001	Positive
SBINTER	1.417	0.549	2.58	0.010	Positive
SAFK	−0.619	0.581	−1.07	0.287	Positive
SWS	6.812	1.834	3.71	0.000	Positive
SFS	−0.065	0.559	−0.12	0.907	Negative

Ordered logistic regression Number of obs = 286; LR chi2(15) = 137.90; Prob > chi2 = 0.0000; Log likelihood = −583.47384; Pseudo R^2 = 0.1057.

6. Discussion: Corporate or Shariah Governance, and Open Innovation

Islamic banks can be differentiated based on shariah compliance because Islamic banks are based on profit and loss sharing, whereas traditional banks are based on interest (*Riba*). In conventional banking, the bank's role is one of a money lender, yet in Islamic banking, the approach is trade-based; therefore, Islamic banks can actively participate in the production process, as well as in trade and activities. We found a significant and negative relationship between board interlock and Islamic bank credit rating. The outside-in innovation concept explains that the organization must have external links with firms to access technical and scientific knowledge [50]. The outside-in or inbound open innovation and resource dependence theory argues that when corporate board size increases, the other stakeholders outside the organization can obtain representation on the board and the organization can access more resources. The results confirmed that the resource dependence theory enhanced the credit rating of the firm. The open innovation concept can be explained as the organization that actively participates in the collaboration with an external environment to enhance firm performance [51]. As we expected from the resource dependence theory and open innovation concepts, directors who work in other Islamic banks can enhance innovation but corporate board interlock is contrary to the expectations. The negative sign indicates that, as the number of interlocks increase, the firm credit rating decreases. Consistent with prior studies [52], our results provide evidence to support a "busyness hypotheses. The significant and positive relationship between board size and Islamic bank credit rating supports the resource dependence theory, i.e., that a large board size can more efficiently arrange resource for the Islamic bank than a small board. To monitor the management by appointing outside (independent) directors are supported by an open innovation model and agency theory (i.e., that outside directors can better perform the monitoring function than executive directors). We expected that the independent board would positively affect credit ratings but our results indicated that a negative relationship existed between them. The reason may be due to the presence of distracted independent directors on the board. The distracted independent directors allocate less time and attention to Islamic banks [53]. The independent directors dependent on the executives for information so, due to lack of time and attention, the proper monitoring process remains incomplete. The relationship between members with accounting and finance knowledge credit rating were in line with what was found in [54]. Board members' business background knowledge can aid when monitoring the Islamic bank's complicated statements, evaluating the internal control system, and improving in financial matters.

Moreover, we also discovered a negative relationship between foreign board directors and credit rating, indicating that foreign directors have low attendance due to money and time constraints. Low attendance leads to poor monitoring and thus credit ratings are negatively affected. Female board members tend to promote a more disciplined attitude, as women generally prefer teamwork rather than a top-down hierarchy. This results in effective monitoring. The negative relationship between CEO duality and credit rating implies that if the CEO holds the chairman position then the monitoring process will be poor and negatively affect credit ratings. In the Islamic financial industry, shariah boards are responsible for shariah compliance. Hence, the shariah board approved all transactions in light of shariah rules. The positive coefficients of shariah board size explained that a large board means the board consists of scholars with different experiences, knowledge, skills, and fiqh, resulting in better interpretation of products and shariah compliance operations. The significant positive association of the supervisory board with credit rating explained that the shariah supervisory board can monitor management and impose discipline. The shariah industry has a lack of scholars to meet the demand of the Islamic financial industry; therefore, an open innovation model suggests that the appointment of shariah scholars from other competitive Islamic banks can be beneficial for the Islamic bank [55]. The performance of research and development is aligned with open innovation partnerships [56]. The selection of shariah scholars working in other Islamic financial institutions can improve the research and development performance of Islamic banks. The reason behind this is that shariah scholars provide services to other organizations of the same sector who know about past and current Islamic financial industries; therefore, more innovative products or services can be introduced into the financial market. The shariah board interlock explains that shariah scholars have membership in other shariah boards with knowledge of the Islamic financial industry. Further, the presence of women shariah scholars on the board explains why women have more accounting and finance knowledge than men, in addition to why they prefer teamwork and have fewer attendance issues.

7. Conclusions

The present study focused on shariah governance attributes, corporate governance attributes, and credit ratings. We considered data taken over a 13 year period: 2006–2018. We found that the following factors negatively affected credit rating: board interlock, board independence, CEO duality, and board foreign directorship. We also found that the following factors were significantly and positively associated with credit rating: board size, board accounting and finance knowledge, women on the board, shariah board size, presence of supervisory shariah board, shariah board interlock, and presence of female shariah scholars. Credit rating evaluators must consider the shariah board attributes while evaluating the Islamic bank's credit rating. The reason behind this is that Islamic banks are naturally different from conventional banks due to shariah compliance [6].

7.1. Implications

The results confirmed that [1] shariah governance significantly affected credit rating. Further, policymakers must consider shariah board size, shariah board interlock, female participation on the shariah board, and presence of supervisory board enhance the Islamic bank credit rating. We also recommend that investors obtain a true evaluation of Islamic bank shariah governance compliance levels if the credit rating evaluators consider the shariah board attributes in the credit rating evaluation procedure.

7.2. Contributions

This study contributed to the literature on shariah governance from a Sukuk perspective because of scarce literature available on shariah governance and credit rating perspective. Our results also suggest that the women have a critical role not only on the corporate board but also on the shariah board. As such, we recommend that Islamic banks' shariah boards significantly affect the credit rating in Asian countries and thus must consider credit rating agencies.

7.3. Limitations

The first limitation of the study was the availability of literature on credit ratings and shariah governance. The second limitation was the availability of data on Islamic banks and credit ratings. The sample size was small so the results generalizability was limited to Asian Islamic banks.

Future research could focus on why the presence of independent directors negatively affects credit ratings. The moderator and mediation role of shariah and corporate governance determines firm performance. Future research could also focus on open innovation trends in Islamic banking financial institutions and the possible ways to decrease the transaction cost and develop an innovative culture [57]. Further, future studies could consider the qualitative studies associated with credit rating.

Author Contributions: Conceptualization, M.M. and A.H.; investigation, M.M. and N.E.; visualization and writing—original draft, M.M.; writing—review and editing, M.M. and A.W.; data curation, M.M.; formal analysis, M.M. and N.U.; project administration, N.E. and N.U.; validation, N.E. and A.H.; supervision, N.E. and Q.A.M.; funding acquisition, N.E., Q.A.M., N.U., A.W., and M.M.; resources, A.H. All Authors agreed to publish this research paper. All authors have read and agreed to the published version of the manuscript.

Funding: We did not receive funding from any agency. However, the Foundation University or CUST may partially reimburse payment to the authors in the near future.

Conflicts of Interest: The authors declare no conflict of interest.

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