



CORPORATE GOVERNANCE AND RISK AGGRESSIVENESS OF ISLAMIC BANKS AGAINST THE RECENT FINANCIAL CRISIS

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ABSTRACT

This study examines whether the multi-layer corporate governance mode of Islamic banking system can prevent Islamic banks from excessive risk taking and hence protect against its fallibility to the global financial crisis. Employing the random-effects GLS method with two-step GMM method for the robustness check and using the dataset of total 154 banks over the period of 2005–2011, the results show that the corporate governance and financial disclosure indices appear as the motivating factors for risk taking attitudes of Islamic banks. Thus, the governance mechanism of Islamic banks is effective in protecting them against their fallibility to the global financial crisis.

Keywords: Corporate Governance, Risk Aggressiveness, Islamic Banks, Financial Crisis

RESUMEN

Este estudio examina si el modo de gobierno corporativo de múltiples capas del sistema bancario islámico puede evitar que los bancos islámicos tomen riesgos excesivos y, por lo tanto, protegerse contra su falibilidad ante la crisis financiera mundial. Al emplear el método GLS de efectos aleatorios con el método GMM de dos pasos para la comprobación de la robustez y el uso del conjunto de datos de 154 bancos durante el período 2005-2011, los resultados muestran que los índices de gobierno corporativo y de información financiera aparecen como factores motivadores del riesgo Tomando actitudes de los bancos islámicos. Por lo tanto, el mecanismo de gobierno de los bancos islámicos es efectivo para protegerlos contra su falibilidad ante la crisis financiera mundial.

Palabras Clave: Gobierno Corporativo, Agresividad del Riesgo, Bancos Islámicos, Crisis Financiera

JEL Classification Codes: G01, G21, G34, Y90

1. INTRODUCTION

Mainstream banking system was virtually halted during the recent global financial crisis, which exposed severe shortcomings in the corporate governance and led many investors to raise serious concerns about the accountability and responsiveness of some companies and boards of directors to the interests of shareholders, and resulted in a loss of investor confidence. Therefore, the existing corporate governance mechanism in conventional financial institutions during the recent financial crisis did not prove effective enough in safeguarding shareholder interests and several major financial institutions be absorbed by other financial institutions, or faced government bailouts, or outright crash. However, Islamic banks were not exposed and none of them have announced massive write-offs or needed government capitalization.

The last few decades have witnessed a prompt evolution of Islamic finance and banking and its rapid growth in the markets including the non-Islamic countries. Thus, the Islamic finance and banking related issues have become a very hot discussion topic, attracted the academic as well as practical curiosity, and come under greater scrutiny. Islamic finance has expanded its operation and activities significantly in non-Islamic countries in terms of assets and market share. Accordingly, the concept of Islamic finance as well as its principles have been rapidly gaining recognition across the globe, with more financial institutions and corporations adopting the idea into their systems.

It is commonly accepted that Islamic finance is equity-based, asset-backed, ethical, sustainable, environmentally- and socially-responsible finance. It promotes risk sharing, connects the financial sector with the real economy, and emphasizes financial inclusion and social welfare. Appropriately, World Bank devises Islamic finance, through its core principles, as supporting for the just, fair, and equitable distribution of income and wealth during the production cycle and provides mechanisms for redistribution to address any imbalances that may occur.

The financial assets of the Islamic financial sector reached US\$1.7 trillion in 2013 and grew 50% faster than the overall banking sector with an average annual growth of 17.6% from 2008 to 2012 (Ernst & Young, 2012). Furthermore, Islamic finance assets are expected to reach US\$3.4 trillion by 2018 (Ernst & Young, 2013) and US\$6.5 trillion by 2020 (Cihak and Hesse, 2010). On the other hand, Thomson Reuters' 2016/2017 'State of The Global Islamic Economy' report claims that the present Islamic Finance market raised up at an estimated US\$2 trillion in assets in 2015, of which, Islamic banking was responsible for US\$1.451 trillion, the Takaful (insurance) sector for US\$38 billion, sukuk (bonds) outstanding for US\$342 billion, Islamic funds for US\$66 billion, and other financial institutions for US\$106 billion. Moreover, total Islamic finance assets are expected to reach US\$3.5 trillion by 2021, a compounded annual growth rate (CAGR) of 12%, with Islamic banking responsible for most of this growth, and projected to reach US\$2.7 trillion in assets by 2021.

The recent global financial crisis has attracted attention as well as intensified interest in the link among the corporate governance, risk-taking, and banks' performance (Aebi et al., 2012; Pathan and Faff, 2013). The performance and accountability of the executive managements and their attitude towards risk-taking and ethical principles in banking has become under amplified inquiry. The massive amounts of losses with some of the world leading financial institutions and banks have underlined and emerged some critical issues like regulatory oversight, risk management, and disclosure. Many people, academics, practitioners, regulators, and observers, see the strong correlation between the recent financial crisis and failures in corporate governance, such as lax board oversight and flawed executive compensation practices that encourage aggressive risk taking (Erkens et al., 2012; Kirkpatrick, 2009; Sharfman, 2009). This observation has led many researchers to the studies that compare the different aspects, like corporate governance mechanism, performance and risk taking attitudes, of conventional banks with Islamic banks.

The failures of corporate governance and risk management of financial institutions coupled with a systematic breakdown in accountability and ethical problems were counted as possible reasons and responsible for the recent financial crisis (Financial Crisis Inquiry Report, FCIC, 2011). The existing corporate governance mechanism in conventional financial institutions during the recent financial crisis did not prove effective enough in safeguarding shareholder interests and several major financial institutions be absorbed by other financial institutions, or faced government bailouts, or outright crash. For example, Lehman Brothers and Merrill Lynch, among the world's largest financial institutions, were

bailed out during the crisis. However, Islamic banks were not exposed and none of them have announced massive write-offs or needed government capitalization but have been rather resilient during the financial crisis (Chapra, 2009, 2010; Green 2010). While conventional banks tackled with substantial difficulties with the recent global financial crisis, Islamic banks were not exposed, rather handled successfully and passed it through without having a serious problem. Accordingly, Wilson (2010) raises up the potential contributions of Islamic banks and governance reforms in restoring credibility and stability in the international financial market.

There can be argued that there are major distinctions between Islamic banks and conventional banks regarding the corporate governance mechanism. For example, Islamic banks must have a Shari'ah Supervisory Board, which is additional layer of corporate governance, as a fundamental characteristic of their governance. This board acts as an independent control mechanism in restraining all the governance means and decision makers from engaging in risk taking actions and unethical or dishonest investment and operations, which are forbidden by Islam.

Charging interest and engaging in speculation are not allowed in Islamic banking, whose operation should be based on a profit-loss and hence risk-sharing model. The Shari'ah Supervisory Boards are a basic but critically important feature of Islamic banks and thus, are considered as the 'Supra Authority' (Choudhury and Hoque, 2006). Together with the routine boards and regular executives with other operational committees, the institution of the Shari'ah Supervisory Boards in Islamic banks alters or revises their corporate governance so that we face the multi-layer governance, which contrasts with the single-layer governance structure of conventional banks. To summarize, the Shari'ah Supervisory Board of Islamic banks is an extra layer of governance and monitors, oversights, and constraints the operations and all kind of activities. Thus, it can be said that their governing mechanism and structure might restrain boards of directors and management from engaging in aggressive lending and major risk taking activities and hence prevent Islamic banks from aggressive risk taking especially during financial turmoil. It can be claimed that the same argument is also valid with the powerful CEOs. That means the powerful CEO has a potential incentive to be engaged in less risky investments (Hermalin and Weisbach, 1998, and Pathan, 2009). On the other hand, having a higher level of disclosure and transparency makes Islamic banks less risk-taking and hence, maximize shareholder value and performance.

This study examines whether a multi-layer corporate governance model, instituted by the Islamic banking system via Shari'ah compliant corporate governance, can prevent Islamic banks from excessive risk taking and hence protect against its fallibility to the global financial crisis. Using the data set containing the total of 154 banks, 77 Islamic and 77 Conventional, from the United Kingdom, Turkey, Malaysia, Indonesia, Saudi Arabia, the United Arab Emirates, Qatar, Bahrain, Kuwait, Jordan, Egypt, Pakistan, Bangladesh, Sudan, Senegal, and Tunisia over the period of 2005 and 2011 and conducting the extended survey questionnaires over the Shari'ah board members with the sample Islamic banks from several countries including non-Islamic countries, we scrutinized board structure, board independence, and board attendance to see what roles they play in restricting Islamic banks from aggressive risk-taking and hence protect against financial distress during the crisis. Specifically, we examine the effect of Shari'ah supervision and corporate governance on the risk-taking of Islamic banks vis-à-vis their conventional counterparts. Given concerns about the relationship between corporate governance and risk taking (Aebi et al., 2012; Pathan and Faff, 2013), we focus on the roles of Shari'ah supervision, board structure and CEO-power in affecting Islamic and conventional banks' risk-taking. The emphasis on Islamic banks in relation to conventional banks is crucially important because the contemporary debate about the role and performance of Islamic banks and some recent studies on stability, efficiency, and profitability cast doubt on the current state of Islamic banks (Abedifar et al., 2013; Ariss, 2010; Beck et al., 2013; Bourkhis and Nabi, 2013). It can be said that the existing literature on corporate governance is not just limited but also has failed to link the Shari'ah governance and corporate governance mechanisms of the Islamic banking. According to our best knowledge, there is no study published on the risk taking and governance mechanism of Islamic banks during the recent financial crisis. The rest of the paper is organized as follows. Section 2 outlines the literature review and hypotheses development. Section 3 identifies the description of the data, measurements of variables and the model applied as well as reports and analyzes the survey responses. Section 4 reports and discusses the empirical results, and deliberates the robustness checks for the board variables. Finally, the concluding remarks are summarized and briefly discussed in section 5.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

In this section, we deliver a brief review of the relevant literature given the emphasis of the study on the effects of important dimensions of corporate governance on the risk-taking of banking firms followed by hypotheses development. The scope of the review is limited to issues related to the development of hypotheses concerning the relationship between governance structure and risk-taking as well as the relationship between the Shari'ah Supervisory Board and risk-taking. In general, the relationship between corporate governance and risk-taking attitude underlines the conflict of interest and the relations of shareholder incentives with managers' incentives. As Galai and Masulis, (1976); Jensen and Meckling, (1976); and John et al., (1991) state, bank shareholders have a preference for excessive risk-taking due to the moral hazard problem and limited liability as well as the convex pay-off systems. On the other hand, Dewatripont and Tirole, (1994) asserts that detached and naive debt holders cannot prevent shareholders from taking extra risk by introducing complete debt contracts on an ex-ante basis due to the higher level of information asymmetry in the banking businesses. Hence, bank shareholders are expected to have strong incentives for taking excessive risky investment position so as to maximize their possible profits or benefits at the expense of deposit insurance and tax-payers' money. Yet, John et al., (1991) argues that risk-adjusted deposit insurance premium and risk-adjusted capital cannot eliminate or abate the moral hazard problem and control banks' risk taking incentives fully. Thus, the board structure emerges as a critical instrument at this point because of the fact that bank managers' opportunistic and devious behavior depends on the board structure, which might have power, if optimally set up, to abate the moral hazard problem as well as bank managers' opportunistic behavior. Therefore, the first hypothesis we will implement is as the following;

Hypothesis 1: *There is no relationship between board structure and risk-taking.* Agency conflict issue is a critical concern for banks corporate governance for the reason that managers might not serve for the best interest of the shareholders. Since organizations or firms that the managers manage are the base for managers' wealth, managers protect their wealth internally by selecting excessively safe assets or diversification at the firm level (Smith and Srulz, 1985; and May, 1995). Besides, tax shield and bankruptcy costs in the highly levered firms like banks contribute management incentives towards selecting overly safe projects rather than excessively risky project (Parrino et al., 2005). Of course, managers' risk-taking incentives vary depending on the packages that they are compensated. It is a common application that bank managers tend to follow a risk averse path if their compensation is based on fixed salaries instead of shares and option programs due to the fact that managers might have very little to gain if banks do very well, but they might be kicked out when the bank fails (Saunders and Cornett, 2006). Bottom line is that there would be a clear conflict between shareholders and managers' incentives. While shareholders want managers to invest in all positive net present value projects ignoring their level of risk (Guay, 1999), bank managers tent to undertake and utilize some safe but value-reducing projects, and reject some risky but value increasing projects (May, 1995).

CEO duality as a CEO power measurement (Hermalin and Weisbach, 2003; and Pathan, 2009) is likely to affect the board's monitoring ability (Fama and Jensen, 1983; and Jensen, 1993). Conversely, due to the CEOs tendency to take less risk, CEO power is expected to negatively affect the bank risk-taking.

Individual directors' incentives to acquire information and monitor managers are kind of low in large boards. That makes easier for CEOs to control the large boards better (Jensen, 1993). Thus, strong boards measured by board size and independent board members (Pathan, 2009) are expected to audit and supervise the bank managers better for the shareholders' interest as well as high risk-taking. Therefore, the second hypothesis we will implement is as the following;

Hypothesis 2: *There is no relationship between CEO power and risk-taking.* In addition, the financial stability and risk taking is a serious research issue during global financial problem. Finally, Akhigbe and Martin, (2008) and Pathan, (2009) examine the board structure and bank risk-taking relationship and then identify charter value, capital regulations, ownership structure and market discipline as the controlling mechanisms.

In fact, there are a few studies made recently on corporate governance, risk-taking and firm performance, however, the literature is very limited regarding the Islamic banking side. Among a few studies, Safieddin, (2009) emphasizes that Islamic banking has a unique corporate governance

mechanism, adhered to the Shari'ah governance (Abu-Tapanjeh, 2009; and Choudhury and Hoque, 2006). Henceforth, the Shari'ah board plays a critical function in the governance mechanisms of the Islamic banking (Lewis, 2005). The existing literature on corporate governance of Islamic banking (Abu-Tapanjeh, 2009; Choudhury and Hoque, 2006; Grais and Pellegrini (2006); Hasan, (2011); and Lewis, 2005) generally addresses the theoretical perspectives of the governance mechanisms of Islamic banking. Nevertheless, Safieddin, (2009) studied the agency framework related to the cash flow and control rights of investors based on a survey over Saudi Arabia, Kuwait, Qatar, Bahrain, and United Arab Emirates.

As clearly mentioned and discussed above, the monitoring ability of the Shari'ah supervisory board restrains Islamic banks from the Shari'ah non-compliant products and refrains them from excessive risk taking and, in turn, help them perform better. Since this study examines the Islamic banking governance mechanism and the role of the Shari'ah supervisory board on risk-taking during the recent global financial crisis, the third hypothesis we will implement is as the following;

Hypothesis 3: *There is no relation between Shari'ah supervisory board and Islamic banks' risk-taking.*

3. DATA AND EMPIRICAL METHOD

3.1. Data Sample

There are about 150 Islamic Banks listed in the BankScope database. However, there are some missing data in the Bankscope database for Islamic Banks, and a reasonable number of them do not fully involve into the Shari'ah compliant products. Although there are around 150 Islamic banks listed in BankScope database but due to data availability, we included 77 Islamic banks and matched with the same number of conventional banks. For sake of our objective, we selected Islamic banks based on their 2005 asset size and matched them with conventional banks based on firm size and country of registration. We collected the data from BankScope, Datastream as well as World Bank country level macroeconomic data. We also had some hand collected data on Shari'ah supervision and corporate governance from the annual reports of 154 banks for the sample period. The final sample consists of 1078 bank-year observations for 77 Islamic banks and 77 conventional banks in 16 countries for the period of 2005 – 2011, which covers the pre, during and post-crisis periods, 539 bank-year observations in each sub-sample.

The data set contains the total 154 banks from the United Kingdom, Turkey, Malaysia, Indonesia, Saudi Arabia, the United Arab Emirates, Qatar, Bahrain, Kuwait, Jordan, Egypt, Pakistan, Bangladesh, Sudan, Senegal, and Tunisia and the extended survey questionnaires over the Shari'ah board members with the sample Islamic banks from several countries including non-Islamic countries. We conducted 65 extended survey questionnaires over the Shari'ah scholars with the sample Islamic banks in Bahrain, Malaysia, Saudi Arabia, Pakistan, Turkey and the UK.

Table 1 below provides the sample distribution.

	Islamic	Conventional	Full Sample	Observations	Percentage
Bahrain	8	8	16	112	10,39%
Bangladesh	5	5	10	70	6,49%
Egypt	2	2	4	28	2,60%
Indonesia	1	1	2	14	1,30%
Jordan	3	3	6	42	3,90%
Kuwait	5	5	10	70	6,49%
Malaysia	11	11	22	154	14,29%
Pakistan	11	11	22	154	14,29%
Qatar	2	2	4	28	2,60%

	Islamic	Conventional	Full Sample	Observations	Percentage
Saudi Arabia	6	6	12	84	7,79%
Senegal	1	1	2	14	1,30%
Sudan	7	7	14	98	9,09%
Tunisia	1	1	2	14	1,30%
Turkey	4	4	8	56	5,19%
United Arab Emirates	7	7	14	98	9,09%
United Kingdom	3	3	6	42	3,90%
Total	77	77	154	1078	100%

3.2. Measures and Definitions of Variables:

We define the risk-taking variable as the investments in risky assets and securities divided by the total loans. Tobin's Q is a market-based measure of the firm value and calculated as the Market-to-Book-Value of the equity ratio. We measure the firm performance by using return on equity (ROE) and return on assets (ROA). We calculate the ROE as net income divided by total equity and ROA as net income divided by total assets. Thus, we construct four indices to be able to constitute the corporate governance structure;

- The index of board structure (IBS) constitutes different features of board and CEO structure,
- The index of financial disclosure (IFD) includes different aspects of the audit firm/committee, risk committee, and Shari'ah committee,
- The index of risk disclosure (IRD) contains the disclosure of the different key risk parameters,

The index of corporate governance (ICG) consists of all the characteristics of the above-mentioned three sub-indices, (IBS, IFD, IRD). Lastly, the Shari'ah supervisory board (SSB) is introduced as a dummy variable in the model. The other explanatory variables are board and CEO power, firm specific and country specific variables.

The table 2 below presents the description of the variables.

This table presents the description of the corporate governance and other firm and country specific variables applied in the study. The description includes the calculation procedure for each variable.		
Corporate Governance Indices		
Name	Abbreviation	Calculation Procedure
Financial Disclosure Index	IFD	<p>The Financial Disclosure Index (IFD) is built based on eleven components of three committees; the audit committee, Shari'ah committee, and risk committee. Each of the eleven components of the IFD gains 1 point; then, the index range between 1.00 - 0.00.</p> <p>The index institutes the followings:</p> <ol style="list-style-type: none"> Has the bank appointed a BIG 4 audit firm? If yes, 1; otherwise, 0. Has the bank formed an audit committee? If yes, 1; otherwise, 0 Has the bank at least 3 members on the audit committee? If yes, 1; otherwise, 0. How many meetings the audit committee hold in the year? If 4 or more, 1; otherwise, 0. Has the bank formed a Shari'ah committee? If yes, 1; otherwise, 0. Has the bank at least 3 members on the Shari'ah committee? If yes, 1; otherwise, 0. How many meetings the Shari'ah committee hold in the year? If 4 or more, 1; otherwise, 0. Has the bank formed a risk committee? Yes=1, no=0, Has the bank at least 3 members on the risk committee? If yes, 1; otherwise, 0. How many meetings the risk committee hold in the year? If 4 or more, 1; otherwise, 0. Does the bank take the risk management actions normally? If yes, 1; otherwise, 0.

Table 2: Description of the Variables (CONTINUED)		
Board Structure Index	IBS	The Board Structure Index (IBS) is built depending on sixteen components. Each component of the Index gains 1 point; then, the index range between 1.00 - 0.00. The index institutes the followings: a) Board Size: Is the board size larger than the median board size of the sample? If yes, 1; otherwise, 0. b) Board Independence: Does the board have more than 50% independent members? If yes, 1; otherwise, 0. c) Board Meeting: Does the bank conduct more meetings than the median number of meeting? If yes, 1; otherwise, 0. d) Board Attendance: Does the members attend more than 75% of meetings? If yes, 1; otherwise, 0. e) Board Committees: Does the bank have more than the median number of board committees? If yes, 1; otherwise, 0. f) Chair/CEO split: Is there Chair/CEO roles split? If yes, 1; otherwise, 0. g) Chair Independence: Is the Chairman independent? If yes, 1; otherwise, 0. h) CEO Qualification: If he has master's or higher, 1; less, 0. i) CEO banking experience: Does CEO have more than the median years of experience? If yes, 1; otherwise, 0. j) CEO Tenure: Does CEO have more than the median tenure? If yes, 1; otherwise, 0. k) Chair executive: Is Chairman executive? If yes, 1; otherwise, 0. l) Senior Management Team (SMT): Is Senior Management Team (SMT) listed? If yes, 1; otherwise, 0. m) Non-Executives in SMT: Are non-executive members in SMT more than half? If yes 1; otherwise, 0. n) Separation Theorem: Is the CEO a member of SMT? If no 1; otherwise, 0. o) Non-executive directors: Is the number of non-executive directors more than the half of the board size? If yes, 1; otherwise, 0. p) Affiliated Directors: Is the number of affiliated directors less than the half of the board size? If yes, 1; otherwise, 0.
Risk Disclosure Index	IRD	The Risk Disclosure Index (IRD) is built based on the five components; credit risk, liquidity risk, fund management risk, market risk, and operational risk. Each of the five components of IRD gains 1 point; then, the index range between 1.00 - 0.00. The index institutes the followings: a) Did the bank disclose Credit risk? If yes, 1; otherwise, 0. b) Did the bank disclose Liquidity risk? If yes, 1; otherwise, 0. c) Did the bank disclose Fund management? If yes, 1; otherwise, 0. d) Did the bank disclose Market risk? If yes, 1; otherwise, 0. e) Did the bank disclose Operational risk? If yes, 1; otherwise, 0.
Corporate Governance Index	ICG	The Corporate Governance Index is built based on the all the thirty-two corporate governance features of the board structure index, financial disclosure index, and risk disclosure index.
Strong Board and CEO Power Variables		
Board Size	Board	Number of the members in the board.
Independent Director	Indep	Proportion of independent non-executive directors in the board.
CEO duality	Ceo_Chair	If the CEO and Chairperson is the same person, then 1; otherwise 0.
Internally Recruited CEO	Ceo_Exec	If the CEO is internally recruited then 1, otherwise 0.
Firm Specific Variables		
Asset Size	Size	Log of Total Assets
Tier 1 Capital	Tier1	Tier 1 Capital
Leverage	Leverage	Customers' Term Deposit/Equity
Big 4 Audit Firm	Big4	If the bank appoints one of the big 4 audit firms as the auditor, then 1; otherwise, 0.
Shari'ah Supervisory Board	SSB	SSB is the dummy variable for the IBs in the full sample.
Country Specific Variables		
Log GDP	Log Gdp	Log of GDP for the country.
Religion	Religion	Religion is a dummy variable. If Islam is the primary religion of the county, then 1; otherwise 0.

Based on the definitions and measurements of the variables, we can offer the following model to test our hypotheses;

$$Y_{b,\lambda} (RT) = \alpha_0 + \alpha_1 * IBS_{b,\lambda} + \alpha_2 * IFT_{b,\lambda} + \alpha_3 * IRD_{b,\lambda} + \beta * SSB_{b,\lambda} + \gamma * X_{b,\lambda} + \delta * ME_c + \varepsilon_{b,\lambda} \quad (1)$$

$$Y_{b,\lambda} (RT) = \alpha_0 + \alpha_1 * ICG_{b,\lambda} + \beta * SSB_{b,\lambda} + \gamma * X_{b,\lambda} + \delta * ME_c + \varepsilon_{b,\lambda} \quad (2)$$

$$Y_{b,\lambda} (RT) = \alpha_0 + \alpha_1 * CG_{b,\lambda} + \beta * SSB_{b,\lambda} + \gamma * X_{b,\lambda} + \delta * ME_c + \varepsilon_{b,\lambda} \quad (3)$$

where

$Y_{b,\lambda}(RT)$ is the proxy for the Risk-taking for bank a in country b at time t,

$IBS_{b,\lambda}$ is the Index of Board Structure for bank a in country b at time t,

$IFD_{b,\lambda}$ is the Index of Financial Disclosure for bank a in country b at time t,

$IRD_{b,\lambda}$ is the Index of Risk Disclosure for bank a in country b at time t,

$SSB_{b,\lambda}$ is the Shari'ah Supervisory Board variables for bank a in country b at time t,

$ICG_{b,\lambda}$ is the Index of Corporate Governance for bank a in country b at time t,

$CG_{b,\lambda}$, is the Corporate Governance variables for bank a in country b at time t,

$X_{b,\lambda}$ is a matrix of firm level variables,

ME_c is a matrix of country level macroeconomic variables,

$\varepsilon_{b,\lambda}$ is the error term, and α , β , γ , δ are the vectors of coefficient estimates.

3.3. Estimation Method

A random-effects GLS method was employed for the regression analysis. We employed this method, developed by Baltagi and Wu (1999), due to the following reasons;

- An OLS ignores the panel structure of the data (Gambin 2004).
- A time-invariant parameter cannot be estimated with fixed-effect methods.
- The index of corporate governance does not vary much over time, so the fixed-effect estimation could be inappropriate (Wooldridge 2002) and could lead to a loss in degrees of freedom (Baltagi 2005).

3.3.1. Descriptive Statistics

Before presenting and discussing the empirical results, it is of importance to analyze the descriptive statistics. Since board structure, financial disclosure and risk disclosure indecies (IBS, IFD, and IRD) are the sub-indices of corporate governance index (ICG), the results give us an indication of how both bank types have corporate governance. According to the results, conventional banks have reasonably better corporate governance indicators, (IBS = 0.35, IFD = 0.36, IRD = 0.65, and ICG = 0.41), than Islamic banks, (IBS = 0.32, IFD = 0.33, IRD = 0.52, and ICG = 0.36). On the other hand, we see a totally different picture when the board and CEO specific variables are examined. Even though the BOARD

SIZE (t-test: 1.38) and CEO_CHAIR (t-test: 0.81) variables are insignificant, the board independence (INDEPENDENT) (t-test: 5.91) and internal recruited CEO (CEO_INTERNAL) (t-test: 3.91) are significant and considerably higher in Islamic banks (means of 0.46 and 0.04 respectively) than conventional pairs (means of 0.25 and 0.03 respectively). This clearly shows that the boards are strong and the CEOs are powerful in Islamic banks. As we mentioned before, we selected conventional banks by considering nearly same size and location with islamic pairs. At this point, we have to underline the fact that there are excessively much more conventional banks than Islamic banks in the market. Thus, it should be mentioned that selecting different conventional banks might result in different outcomes.

Instead, Islamic banks' exposures to risky securities are much higher than conventional pair, (0.29 versus 0.04). Although financial leverages are close each other (5.71 versus 5.37), meaning that the leverages are relatively similar for both banking practices, capital adequacy ratio in Islamic banks (1.43) is significantly different from their conventional pairs (0.32), showing the existence of excess liquidity in Islamic banks. Likewise, both banks practices have quite similar assets size (15.12 versus 16.02).

Table 3 below displays the descriptive statistics of the variables.

Table 3: Descriptive Statistics

Tobin's Q is the firm value parameter, **ROA** and **ROE** are the firm performance proxies, **IBS** is the board structure index, **IFD** is the financial disclosure index, **IRD** is the risk-disclosure index, **ICG** is the corporate governance index, **BOARD_SIZE** is the board size, **INDEPENDENT** is the ratio of independent board members to total number, **CEO_CHAIR** is the dummy variable for CEO/Chair role duality, **CEO_INTERNAL** is the dummy variable for internally recruited CEO, **BIG4** is the dummy variable for the big four audit firms, **TIER1** is the regulatory capital, **RISK** is the risk exposure, **ASSET_SIZE** is the asset size of the bank, **LEVEAGE** is the leverage ratio of the bank, **RELIGION** is the dummy variable for the major religion of the country of the bank, **LOG_GDP** is the log of country GDP, **SSB** is the dummy variable for Shari'ah Supervisory Board of Islamic banks.
 ***, **, * indicate the significance level at 1%, 5%, and 10% levels.

PANEL A: Islamic Bank Sample					PANEL B: Conventional Bank Sample				Pair-wise T-test
Variables	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max	
Tobin's Q	0.21	0.25	0.00	0.97	0.03	0.03	0.00	0.87	7.45***
ROA	0.06	0.05	-0.01	0.36	0.02	0.02	-0.10	0.11	5.74***
ROE	0.35	0.36	-0.22	1.95	0.17	0.23	-0.61	0.56	4.21***
IBS	0.32	0.12	0.10	0.71	0.35	0.21	0.00	0.79	-1.31
IFD	0.33	0.27	0.00	1.00	0.36	0.31	0.00	1.00	-1.94*
IRD	0.52	0.34	0.00	1.00	0.65	0.35	0.00	1.00	-3.41***
ICG	0.36	0.19	0.08	0.77	0.41	0.23	0.00	0.85	2.98**
RISK	0.29	0.37	0.00	1.72	0.04	0.08	0.00	0.41	7.49***
ASSET_SIZE	15.12	1.92	9.75	22.05	16.02	2.03	9.45	23.76	-0.38
INDEPENDENT	0.46	0.31	0.00	0.92	0.25	0.23	0.00	0.89	5.91***
CEO_CHAIR	0.04	0.18	0.00	1.00	0.03	0.17	0.00	1.00	0.81
CEO_INTERNAL	0.19	0.41	0.00	1.00	0.03	0.19	0.00	1.00	3.91***
BIG4	0.76	0.32	0.00	1.00	0.88	0.39	0.00	1.00	-1.52
TIER1	1.43	1.54	0.21	1.00	0.32	0.15	0.00	0.75	-19.17***
BOARD_SIZE	15.15	1.98	9.87	20.10	13.91	1.43	1.72	16.75	1.38
LEVERAGE	5.71	5.57	-4.56	26.14	5.37	3.86	0.04	21.72	0.78
RELIGION	0.92	0.25	0.00	1.00	0.86	0.31	0.00	1.00	-
LOG_GDP	25.39	1.64	23.24	28.76	25.82	1.51	23.69	28.83	-
SSB	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	-

3.3.2. Analysis of Questionnaires Responses

The objective of this section is to understand and interpret the Shari'ah supervisory board's (SSB) role in restraining Islamic banks from the aggressive risk-taking. We conducted 65 extended survey questionnaires over the Shari'ah scholars with the sample Islamic banks in Bahrain, Malaysia, Saudi Arabia, Pakistan, Turkey and the UK.

Speaking generally, the Shari'ah boards consist of the Faqihs (Islamic jurisprudence scholars), economists, and finance people with the average size of 3 and no female member. The board members do not have the full-time position and do not work for the Islamic banks as employees but as advisors or consultants. While 60% responded that they are accountable to the board, 40% answered that they are accountable to the shareholders. 89.2% of the respondents answered that the shareholders have the power to change (appointing and dismissing) the Shari'ah board. 96.9% the respondents answered that roles, rights and responsibilities of the members are openly delineated with the articles.

96.9% of the respondents have a common idea that the credentials and proficiency of Shari'ah board members are assessed carefully by Islamic banks, although Islamic banks never evaluated their performance. Respondents diverge when it comes to the process of the internal control and risk management. Majority of the Shari'ah boards meet quarterly (69,2% respondents), while some of them meet monthly (30.8% respondents). While the decisions are made based on consensus, they never experienced quorum problems.

The issues of disclosure and transparency with Islamic banks at this point are needed to be taken into consideration and elaborated. From practical viewpoints, the Shari'ah governance system is, in general, scrutinized by either a national Shari'ah council or a Shari'ah authority of respective central bank. The responses revealed that Islamic banks have independent Shari'ah board (84.6%), while the internal Shari'ah review is monitored by internal Shari'ah committee (70.8%) as well as the resolutions are publicly available (80%). Regarding the questions about the role of Shari'ah board and Shari'ah ruling, 54% of the respondents believe that the Shari'ah boards play an advisory role, and they validate the documentation, while 46% of the respondents think that the Shari'ah board plays a supervisory role, and they perform Shari'ah audit. On the other hand, 72% of the respondents believe that banks consider the Shari'ah board ruling as binding but 28% thinks that it is simply advisory.

Finally, the responses taken from the survey put some reservation for the independent role of the Shari'ah boards, which, in fact, was theoretically seen as the fundamental motivating force for Islamic banks' governance system to restrain from excessive risk-taking and so perform better during crises. Interestingly, the results ascertain the Shari'ah boards as the weak variable in Islamic banks' governance system.

4. EMPIRICAL RESULTS

Corporate governance indices (IBS, IFD, IRD, and ICG), board structure and CEO related variables are tested against firm's risk taking in model 1 with the equations 1.1, 1.2, and 1.3 by conducting the panel data analysis to explore the relationship between risk exposure and corporate governance components.

All models are fitted with Random effect GLS method, and produced highly significant F-statistics. Having highly significant ICG and IFD is a clear indication that the corporate governance mechanism in general and financial disclosure in particular appeared as the fundamental motivating force for risk taking in Islamic banks. Likewise, the full-sample also reveals the significant consequences for ICG and IFD. Conversely, only IRD is significant (at 10% level) with conventional pairs.

On the other hand, while board size is not significant for Islamic banks, it becomes significant and stimulates the risk-taking for conventional pairs and the full-sample. Similarly, while the number of independent board members is not significant for Islamic banks, it becomes significant for conventional pairs.

Thus, the number of independent board members and the risk disclosure index emerge as critical instruments in risk-taking for conventional banks. There has been a general argument that the risk exposure of Islamic banks is not pretty high because of the Shari'ah prohibition. It is argued that the

Shari’ah prohibition restricts Islamic banks from unethical operational and investment activities with unethical products and excessive uncertainty. Yet, the board structure and CEO related variables produce insignificant results and thus, they are said to be ineffective in controlling risky investment for Islamic banks. Furthermore, while only asset size is significant with conventional sample, both asset size and financial leverage variables become significant and thus, play important roles in protecting Islamic banks. Finally, Shariah supervision board is another highly significant variable in risk-taking for Islamic banks, which contradicts the general belief that the Shari’ah Supervisory Board restricts Islamic banks from the excessive risks taking. The possible explanation could be the weak and ineffective supervision.

In econometrics, simultaneity is a specific type of endogeneity problem, in which the explanatory variable is jointly determined with the dependent variable.

In our models, board structure related variables, board size and independent (the number of independent board members) might have been determined simultaneously. Adopted by Arellano and Bover (1995) and Blundell and Bond (1998), the two-step GMM approach was implemented for endogeneity tests with adjusted standard errors for potential heteroscedasticity by Arellano and Bond (1998) to solve the simultaneity problem. This method lets us assume all independent variables as endogenous and orthogonally use their previous values as their matching instruments, while it, besides, generates a corresponding equation of the first differences of all variables and estimates the model through GMM using the lagged values of explanatory variables. By taking the first differencing, unobserved heterogeneity is eliminated and variable bias is omitted. This way allows us to assume all bank features as endogenous covariates and country and macro controls as strictly exogenous. The system GMM estimates were generated by using the (xtabond2) module of Roodman (2009) in Stata.

We considered board size and board independence variables as potentially endogenous instruments under the GMM system. The results show that the second-order autocorrelations and Hansen J-statistics are insignificant and number of instruments reduces for all the models. Although we see some variation with the significance levels while testing against financial fragility or risk-taking variables, negative directional relationship unchanged. As a result, we have the same interpretations of the consequences from the GMM system as presented in Table 4 and therefore we do not report.

The results of the model for both Islamic and conventional banks are presented in Table 4.

Table 4: Corporate Governance and Risk-Taking

This table presents the regression results for corporate governance and risk-taking models. Each panel presents three models (the model 1 contents the corporate governance sub-indices (ibs, ifd, ird), the model 2 contents the corporate governance index (icg), and the model 3 contents the strong board (board and independence) and CEO power (ceo_chair and ceo_internal) variables. **ibs** is the board structure index, **ifd** is the financial disclosure index, **ird** is the risk-disclosure index, **icg** is the corporate governance index, **board_size** is the board size of the bank, **independent** is the ratio of independent board members to total number, **ceo_chair** is the dummy variable for ceo_chair role duality, **ceo_internal** is the dummy variable for internally recruited CEO, **big4** is the dummy variable for the big four audit firms, **tier1** is the regulatory capital, **asset_size** is the asset size of the bank, **leverage** is the leverage ratio of the bank, **religion** is the dummy variable for the major religion of the country the bank, **log_gdp** is the log of country GDP, **ssb** is the dummy variable for Shari’ah Supervisory Board the Islamic banks.
 ***, **, * indicate the significance level at 1%, 5%, and 10% levels.

PANEL A: ISLAMIC BANKS			
	Model 1	Model 2	Model 3
ibs	.12 (0.59)		
ifd	.23** (2.10)		
ird	.03 (0.57)		
icg		.37*** (2.78)	
board_size			.03 (1.62)
independent			-.03 (-0.39)
ceo_chair			.02 (0.41)

PANEL A: ISLAMIC BANKS (CONTINUED)			
	Model 1	Model 2	Model 3
ceo_exe			-.09 (-1.27)
big4			.04 (0.78)
tier1	.025 (1.56)	.022 (1.61)	.00 (-0.25)
asset_size	-.06*** (-3.77)	-.06*** (-4.14)	-.05*** (-3.45)
leverage	-.01** (-2.34)	-.01** (-2.19)	-.01** (-2.59)
religion	-.15 (-1.27)	-.14 (-1.17)	-.11 (-0.65)
log_gdp	-.03 (-0.77)	-.02 (-0.61)	.03 (0.93)
Ssb	.31*** (4.82)	.29*** (4.35)	.26*** (4.52)
F-stat	3.91***	4.62***	3.12***
PANEL B: CONVENTIONAL BANKS			
	Model 1	Model 2	Model 3
lbs	.07 (0.93)		
Ifd	.04 (1.19)		
Ird	-.06* (-1.68)		
Icg		.04 (1.43)	
board_size			.02** (2.18)
independent			-.07** (-2.38)
ceo_chair			.02 (0.21)
ceo_exe			.04 (0.74)
big4			.06** (2.19)
tier1	.00 (-0.63)	.00 (-0.92)	.01 (0.59)
asset_size	-.02** (-2.24)	-.01* (-1.97)	-.03*** (-3.34)
leverage	.01 (-1.23)	.00 (-0.97)	.00 (-0.49)
religion	.06 (1.19)	.04 (1.23)	.00 (0.12)
log_gdp	.01 (0.65)	.03 (0.65)	-.02 (-1.14)
F-stat	2.17**	2.18**	2.69***

5. CONCLUSION

The main objective of this study is to test whether a multi-layer corporate governance model, instituted by the Islamic banking system via Shariah compliant corporate governance, and the notional loyalty to the moral conduct, which have been assumed to be the theoretical foundation of the Islamic banking, can prevent Islamic banks from excessive risk taking and hence protect against its fallibility to the global financial crisis.

Using the data set containing the total of 154 banks, 77 Islamic and 77 Conventional, from the United Kingdom, Turkey, Malaysia, Indonesia, Saudi Arabia, the United Arab Emirates, Qatar, Bahrain, Kuwait, Jordan, Egypt, Pakistan, Bangladesh, Sudan, Senegal, and Tunisia over the period of 2005 and 2011 and conducting the extended survey questionnaires over the Shari'ah board members with sample Islamic banks from several countries including non-Islamic countries, we scrutinized board structure, board independence, and board attendance to see what roles they play in restricting Islamic banks from aggressive risk-taking and hence protect against financial distress during the crisis.

Employing the random-effects GLS method for the regression analysis and using the two-step generalized methods of moments (GMM) for the robustness check of the findings, the results show that the boards are strong and the CEO's are powerful in Islamic banks. The board size and the board independence of Islamic banks are positively correlated with the return on assets, which confirms that these board structure variables are important driving forces in the profitability of Islamic banks. Moreover, it is revealed that while the return variables of Islamic banks are positively correlated with the financial transparency index and board structure variables, they are negatively correlated with the risk closure index and CEO variable variables.

Our findings expose that Islamic banks have much higher exposures to risky securities than their conventional counterparts while both have similar financial leverage. Moreover, the corporate governance index and financial transparency index appear as the supporting elements for the risk taking attitudes of Islamic banks.

PANEL C: FULL SAMPLE			
	Model 1	Model 2	Model 3
lbs	.01 (0.05)		
lfd	.21** (2.58)		
lrd	-.01 (-0.16)		
lcg		.24*** (2.87)	
board size			.02** (2.37)
independent			-.06 (-0.92)
ceo_chair			.02 (0.28)
ceo_exe			-.08 (-1.53)
big4			.04 (1.12)
tier1	.00 (-0.88)	.01 (-0.74)	.00 (-1.10)
asset_size	-.05*** (-4.35)	-.05*** (-4.41)	-.04*** (-3.81)
leverage	-.02*** (-3.49)	-.02*** (-3.36)	-.01*** (-3.87)
religion	-.07 (-0.91)	-.06 (-0.58)	-.05 (-0.74)
log_gdp	.00 (-0.27)	.00 (0.18)	.01 (0.71)
F-stat	8.41***	9.19***	6.76***

On the other hand, the study raises some concerns regarding the independence of Shariah Boards with Islamic banks. This is very much foreseeable due to the fact that the board members hold several positions besides their position with the Shari'ah Board and thus, their physical and technical abilities to meticulously fulfill the functions and roles expected from them are questionable. Furthermore, it seems that Shariah board members neglect the monitoring role and limit their functions to just giving opinions on the products and services offered by the Islamic banks whether they are Shariah compliant or not.

The outcomes of this work provide empirical evidence for researchers, practitioners, policy makers, and regulators, and make a modest contribution to the literature.

The study used the data set containing the total of 154 banks, 77 Islamic and 77 conventional over the period of 2005 and 2011. Although the study was conducted on huge data set, there were certain limitations while exploring the aim of the study. These points will definitely help future researchers to avoid facing the same shortcomings.

- The study covers 154 banks, 77 Islamic and 77 conventional banks. However, there are much more banks in the world. Thus, selecting especially different conventional banks might result in different outcomes.
- Although the study covers the data set period of 2005 – 2011, which covers the pre-during-post crisis periods, a deeper analysis like extending the post crises period over 2011 where since the turmoil hadn't past yet and/or splitting the sample in pre-during-after crisis period might again result in different outcomes.

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