Islamic Bank Capital Steering

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ABSTRACT

The emergence of financial crises has emphasized the need for more stringent Basel standards in the banking sector. Among the key risks, capital risk has been a major contributor to the collapse of major financial institutions worldwide. This study focuses on the Islamic banking sector in Malaysia, aiming to identify the key determinants of capital risk. Using an unbalanced panel dataset of 14 Islamic banks, the study framed as a post-crisis historical analysis covering from 2007 to 2015. The study applies a fixed effects model (FEM) to analyze the data. A financial crisis interaction model is developed to empirically examine the significant role of financial crises in shaping capital risk. The findings indicate that financial crises significantly interact with the relationship between profitability and capital risk during both crisis and non-crisis periods. Specifically, banks with higher profitability face lower capital risk during the global financial crises, whereas the opposite holds true in non-crisis periods. Furthermore, the interaction model confirms the presence of moral hazard in too-big-to-fail institutions, as larger Islamic banks tend to hold lower equity capital, thereby increasing their capital risk exposure, particularly during financial crises. The study also highlights other key determinants of capital risk in Malaysian Islamic banks, including asset quality and bank liquidity.

Keywords– Capital Requirement; Financial Risk; Financial Crisis; Basel; Islamic banks

INTRODUCTION

Malaysia introduced the first Islamic bank in July 1983 namely, Bank Islam Malaysia Berhad (BIMB). The establishment of the Islamic bank is based on Islamic Banking Act (IBA) 1983 later amended to Islamic Financial Services Act (IFSA) 2013. The establishment of the BIMB was also a cornerstone in the Islamic banking and financial system in Malaysia. The BIMB executes the banking business according to the Sharia principles that practice interest-free based transactions, prohibit excessive uncertainty and forbid the transactions that involve illicit activities such as gambling, prostitution and alcohol. Since the establishment of the first Islamic bank, Malaysia practices the dual banking system. It has been more than thirty (30) years that the Islamic banking system exists in parallel to the conventional banking system in the country. Nowadays, the acceptance of Malaysians on the Islamic banking system as part of their banking businesses and transactions are favorable. Due to the promising Islamic banking business, it is vital for the country to ensure the longevity of Islamic banking system.

Apparently, the disruption or malfunction of the banking system may alarm the financial development of the country. Hence, to avoid any unfavorable events that happened during the Global Financial Crisis (GFC) 2007-2009, it is essential for the banks to have a well-managed banking risk. Among others are the collapse of Lehman Brothers, the takeover of Bear Stearns and Merrill Lynch, and the conversion of JPMorgan and Goldman Sachs commercial bank status in accessibility of the government safety net. In a worst-case scenario, the financial crisis gives significant impact to the country insolvency for instance, the disruption of Greek financial system [1, 2]. These remarkable events happened originally due to the unsound financial health of the banks.

The unsound financial health is caused by uncontrollable lending activities which induce the spread of credit risk vulnerability among the market players. The spillover of the credit risk in financial system brings on the

liquidity issue in banking. The liquidity issue is basically due to the mismatch of assets and liability in banking institutions. The liquidity risk deteriorates the stability and resiliency of the banks. Further deteriorations induce disturbance in the financial system and, to a large extent, jeopardize the financial development of a country. In prolonged period, it triggers the systemic risk which stimulates the contagion effect among the market participants. Indeed, the banks need to have sufficient amount of capital to lessen the potential losses faced by the banks.

Theoretically, the capital acts as a buffer in protecting the impact of adverse shocks that are caused by unprofitable banks and/or liquidity issues. Due to this reason, the banks have to hold adequate amount of capital so as to shield themselves from further losses that could threaten the banking institutions. Evidently, one (1) of the reasons that sparks off the previous global financial crisis is insufficient amount of capital held by the bank. Lesson learned from the previous global financial crisis thus, the regulatory bodies such that, Basel and Islamic Financial Services Board (IFSB) have emerged with a proper revision of regulatory framework Basel III. The framework indicates the banks have to comply with minimum requirement of capital, which is, at least eight (8) percent at all times in assuring the strong and resilient banking system. On top of that, the banks have to maintain adequate amount of capital in order to portray the banks' stability to the public. Therefore, banks with adequate amount of capital are most probably among stable banking institutions. Nevertheless, hoarding excessive capital may not be a good decision made by the banks. Other strand of literature proposes, excess of capital by the banks indicates inefficiency in utilizing its resources [3]. Thus, it is important for the banks to have sufficient capital adequacy. This is particularly to forefend the capital risk occurrence as well as to mitigate the upshot of credit risk and liquidity risk. Dahir, et al. [4] also emphasize insufficient capital in the banks is one of the contributors of banks fragility. As of now, there are controversial issues with regards to capital risk.

In response to this problem, the study seeks to investigate on the possible factors that influence capital risk which is focusing the Islamic banking perspective in Malaysia. The study also takes into account the interaction effect of global financial crisis in investigating the possible factors that influence capital risk of Malaysian Islamic banks. The study is motivated to capture both the global financial crisis and the immediate post-crisis adjustment period as to portray the study gap and contribution to the Islamic banking and finance literature.

LITERATURE REVIEW

In this section, the study provides empirical and theoretical literatures in order to investigate on the possible factors that influence the capital risk among the Islamic banks in Malaysia. Although there are number of studies with regard to capital of the bank, studies from the Islamic banking perspective are still lacking. Thus, the current study conceives to contribute the findings of this study in Islamic banking and finance literature. The study reviews literature on bank capital followed by bank specific determinants that are, asset quality, management quality, liquidity, profitability and size. The study then discusses literature of financial crisis interaction on profitability and size towards capital risk of the banks.

In response to the previous Global Financial Crisis (GFC) 2007-2009, Basel Committee on Banking Supervision [5] publishes guidelines in strengthening global capital framework. The global financial organization stresses out the roots of GFC are insufficient of liquidity hoarding by the banks and also inadequate of capital to buffer the adverse shocks caused by the crisis. Therefore, the organization proposes Basel III with the objective of encouraging a more resilient banking sector. Precisely, the proposed framework aims to make better banking sector capability in absorbing negative shocks induced by the crisis, thus lessening the risk spread from the banking sector to the real economy. Moreover, Islamic Financial Services Board (IFSB), an organization responsible to foster the development of Islamic financial services industry also revises the standards of capital adequacy in IFSB-15 for institutions offering Islamic financial services. Islamic Financial Services Board [6] sets out the Total Capital requirement for institutions offering Islamic financial services is at least 8.0% of total risk-weighted assets at all times. The institutions also need to maintain Common Equity Tier 1 at least 4.5% of total risk-weighted assets at all times. Besides, the institutions must also ensure Tier 1 Capital is not less than 6.0% of total risk-weighted assets at all times. The revision of the

standard is to purposely provide inclusive guidance to supervisory authorities and institutions that offer Islamic financial services in boosting the soundness and stability of the global Islamic banking industry.

Holding more capital relative to its minimum requirement refers to capital buffer. Buffer of capital helps the banks to absorb losses from sudden shocks [7]. Therefore, the banks could avoid further losses in the banks that possibly endanger the banks' financial position and to a large extent, threaten the solvency of the banks which induces higher capital risk. According to Gombola, et al. [8] holding more capital cuts down the probability of failure. The statement is affirmed by Adeyemi [9]. The author indicates capital inadequacy as the main cause that contributes to banking failure in Nigeria after immense non-performing loans. Al-Kayed, et al. [10] discover Islamic banks tend to hold more capital due to the fact that they are still a newbie in the industry as compared to conventional banks. Insolvency brings down the reputation of the banks. Hence, Islamic banks hold more capital in avoidance of insolvency and later translate to lower capital risk exposure. Dua and Kapur [11] disclose Indian banks hold buffer of capital proportion so as to pay for the debt obligations. The authors further conjecture the increment is reflected through the greater provision for non-performing financing.

Louati, et al. [12] reveal Islamic banks primarily deal with profit and loss sharing (PLS) business transactions. The involvement in PLS business transactions lead to greater equity capital participation in the banks, thus lowering capital risk. Shingjergji and Hyseni [13] find inadequate capital caused the banks in Albania to face greater capital risk. The authors use equity multipliers to proxy for capital adequacy. Greater equity multipliers portray inadequate capital. The authors indicate Albanian banks face greater capital risks because the banks are expanding their banking activities. Bitar, et al. [14] highlight capital and banking risk resemble the regulatory hypothesis. The regulatory hypothesis promotes the banks to hold amount of capital equals to the risk taken. Due to this reason, the banks have to ensure sufficient capital, especially when involved in risky investment. Therefore, the banks would have adequate capital to cushion in case of sudden losses that could threaten the banking soundness.

Greater asset quality creates more capital ratio, thus lowering capital risk [15]. The author opines banks with greater asset quality simultaneously allocates lesser amount for loan losses allowance. Similarly, Fatmira, et al. [16] highlight banks' financing supply depending on the quality of assets. Good quality of assets encourages more financing to be disbursed. This in turn raises more capital ratio of the banks, hence lowering capital risk. Oino [17] finds deterioration of asset quality results in higher non-performing loans. The deterioration of the asset quality causes the banks to face insufficient capital. This is because the banks have to find alternate sources in order to meet the possible amount of losses. Eventually, this could endanger the banks as it has to put aside more coverage to encounter greater capital risk exposure. On contrary, Mili, et al. [18] as well as Ashraf, et al. [19] emphasize that deterioration of banks asset quality induces lower capital risk exposure faced by the bank. This is because the deterioration of the asset quality depicted by higher provision for loans losses encourages the banks to hold greater capital ratio. This is to ensure the ability of the banks to buffer for sudden loans losses. In short, these banks are classified as being prudent in their business. Henceforth, deterioration of banks' asset quality causes lower capital risk exposure. Thus, the study postulate there is a significant relationship between asset quality and capital risk of Islamic banks in Malaysia.

In spite of the aforementioned determinants, the current study also considers management quality as part of the possible factors that influence Islamic banking capital risk in Malaysia. Improve in income structure represents the banks are good in managing its assets and costs thus, portrays good management quality [20]. Sun, et al. [21] stress out greater loans and investments level depict greater income generated by the banks. The authors further explain the income for the banks may be improved through fee-based services and non-interest charges. Due to this, the banks have high tendency to enrich its sources of income in order to gain more revenues. Consequently, it exposes the banks to higher risk. Aiyar, et al. [3] discover the rise in cost inefficiency depicts the deterioration of banks management quality. The authors further indicate that greater cost inefficiency leads to greater equity ratio in which, signals for lower capital risk. Instead of measuring the management quality via cost efficiency, previous literatures also measure the management quality via market power which is the competition among the banks, inter alia Maghyereh and Awartani [22] and Stefano, et al. [23]. Greater competition among the banks signals for less market power, hence portraying good management quality. Rakesh, et al. [24] disclose greater competition among the banks in India causes nifty efficiency. This suggests

the competitive banks are good at cost management, thus having greater management quality. Cetorelli and Peretto [25] find the competition among the banks relates to capital accumulation. However, Chen [26] argues that banks are less likely to hold capital in a competitive loan market. This is due to the banks do not gain much by holding the capital, hence it prefers not to hold more capital [27]. Sorokina, et al. [28] unwrap this contradictory argument. The authors highlight banks with greater competition, lessening the leverage level. Due to this reason, the competitive banks tend to hold more equity capital and resultant to lower capital risk. Based on the evidence, the study conjectures there is a significant relationship between management quality and capital risk of Islamic banks in Malaysia.

The current study also concerns the effect of liquidity on capital risk. According to Shingjergji and Hyseni [13] illiquidity is positively influencing banks capital adequacy. The authors use loans to deposit ratio as to proxy for the liquidity. A greater ratio depicts the banks as less liquid. Due to this reason, a bank with lower liquidity level is less exposed to the vulnerability of capital risk. The relationship affirms to the study by Yusgiantoro, et al. [29]. The authors find Indonesian commercial banks refrain to hold high level of capital due to the depositors practice market discipline among themselves. Thus, there is less urgency for the banks to hold high level of capital thereby, greater capital risk. Oppositely, Smaoui and Ghouma [30] discover Islamic banks with high liquidity are less exposed to capital risk. they have less issue in fulfilling their obligations especially whenever the customers demand for withdrawals. Sorokina, et al. [28] emphasize lower level of liquidity in the previous year induces greater leverage of the banks. This is due to the banks apparently raising the leveraging activities more as they have lower liquidity level. Further decreasing in the level of liquidity may cause illiquidity problems. Consequently, the banks experience lower equity capital, thus less amount of capital to cushion for adverse shocks. Due to this reason, the banks face greater capital risk exposure. The statement corroborates with DeAngelo and Stulz [27] that state greater leveraging resultant in huge capital risk exposure. Therefore, the study hypothecates there is a significant relationship between liquidity and capital risk of Islamic banks in Malaysia.

Knowing banking business, banks compete with each other in generating earnings (profits) through the traditional lending (financing) and providing depositing services. The current study takes into account the possible influence of earnings towards capital risk in Malaysian Islamic banks. Magnis and Iatridis [31] point out capital adequacy is directly influenced by banks profitability. The authors highlight during the financial crisis period, banks in United States and United Kingdom practice aggressive capital management. The authors further point out that these banks generate greater earnings so as to assure greater capital available to cushion for sudden shocks. Consequently, it lessens the exposure of inadequate capital in mitigating the capital risk. Bougatef and Mgadmi [32] also discover similar relationship between profits and capital risk of the banks in Middle East and North Africa (MENA). The authors explain the increment of earnings cause the growing of capital to buffer, hence decreasing capital risk exposed by the banks. Moreover, the authors notice Middle East and North Africa banks are relying on internal sources of funding in creating buffer of capital. This is due to the fact that financial markets of Middle East and North Africa are less developed. According to Tan and Floros [33], commercial banks in China yield greater outputs resultant by efficient practice of inputs utilization which includes price of human capital and price of physical capital. Moreover, the efficient practice enhances profit generation of the banks which leads to greater proportion of capital retained by the banks. Therefore, it lessens capital risk exposure. Similar evidences shown in Vo [34], during financial crisis banks with lower profitability apparently has lower capital and exposed to higher capital risk. Roulet [35] finds the banks face constraint in increasing the capital ratio since financial crisis period in year 2008. This is due to huge impairment and losses. The finding corroborates to Schmaltz, et al. [36] that indicate the level of capital in the banks is reduced due to the losses incurred especially after the shocks. The authors list out increment of credit risk, unexpected withdrawals and unexpected losses are among the possible shocks that reduce the capital adequacy of the banks. In contrast, Hristov and Hülsewig [37] as well as Cohen and Scatigna [38] reveal earnings is negatively related to the capital level of the banks. Higher earnings generated induce lower levels of banks capital, thus creating greater capital risk exposure. The later authors state that banks face greater capital risk because the earnings generated from the retained earnings are unable to improve the level of capital in the banks. This scenario is probably due to bank's decision to tradeoff between capital and loan disbursement where the banks utilize its earnings to create more profit rather than to improve its capital level.

Thus, the study theorizes there is a significant relationship between profitability and capital risk of Islamic banks in Malaysia.

Apart from that, size of the banks discloses different effects to the capital risk exposure. Al-Khouri and Arouri [39] reveal larger size of banks usually holds lower level of capital. This is due to the banks anticipating the regulator to provide financial support in case of insolvency. The banks affirm to the theory of too-big-to-fail. Therefore, the larger size of banks faces greater capital risk exposure. The statement matches Mili, et al. [18] that indicate the larger size of banks do not concern about being collapsed because it is a big enough bank. The authors further stress out these banks hold less amount of capital due to the fact that they have the capability to take advantage of international diversification given that it is larger size of bank. Therefore, it leads to greater capital risk. Among others, Raz [40] uncovers larger banks in Indonesia tend to increase their risk level during the crisis period. The author further discusses; the reason is larger Indonesian banks seek to keep their favorable profitability. Therefore, these banks boost up their financing growth in order to gain more profitability even in distress period. Beltratti and Stulz [41] on the other hand find that larger banks hold greater capital positions during the financial crisis. The greater level of capital induces better banks' performance since the banks are able to cushion for the impact of crisis. In addition, the larger size of banks has better capitalization as compared to the smaller banks during the financial crisis period. This indicates the larger size of banks experience less capital risk exposure during the financial crisis period relative to the smaller banks [42]. The authors add the larger banks preferably hold greater amount of capital because they prefer dealing with riskier assets which raises the possibility of the banks in dealing with riskier borrowers. Hence, the study hypothesizes there is a significant relationship between size and capital risk of Islamic banks in Malaysia. Acknowledging the possibility of different capital risk management during crisis and non-crisis period for different profitability level and size, the current study is keen to find evidence of the financial crisis interaction effect on the relationship between profitability and banks size towards capital risk of Islamic banks in Malaysia.

DATA DESCRIPTION AND METHODOLOGY

The study aims to identify influential forces that trigger the capital risk of Islamic banks in Malaysia. The study comprises of 14 Malaysian Islamic banks covering a 9-year data from 2007 to 2015. All data was obtained from Bankscope database by Bureau van Dijk using the sample of the full-fledged Islamic banks as well as the Islamic subsidiaries. Using unbalanced panel data, the study ends up with 117 observations for the entire dependent and independent variables.

The main interest of the study is the bank capital risk proxy by equity to net loan, where the higher the ratio, the lower the capital risk for banks. Considering six (6) influential factors, the study includes asset quality, management quality, liquidity, profitability, bank size and financial crisis period as the independent variables. Crisis period is presented as dummy variables while the other proxies for independent variables are exhibited in Table 1. Note that, the ratio proxy the capital risk and asset quality are presented in inverse direction, hence the results are interpreted in opposite direction from the sign.

TABLE 1 LIST OF VARIABLES AND PROXIES

	Notation	Proxy Measurement
Dependent Variable		
Capital Risk	CAPR	Equity to net financing (%)
Independent Variables		
Asset quality	AQ	Financing loss provision to net operating revenue (%)
Management quality	MQ	Other operating income to average total assets (%)
Liquidity	LIQ	Liquid assets to total deposits and short-term funding (%)

Profitability	PROFIT	Net income to average total assets (%)
Size	SIZE	Total assets (million USD)
Moderating Variable		
Financial crisis	FC	1 for financial crisis, and 0 otherwise

The study period is able to captivate effect of global financial crisis and its immediate post-crisis adjustment period in which, the banks were rebuilding capital and liquidity buffer under transitional regulatory reforms [43]. Importantly, the study is framed as a post-crisis historical analysis. The dataset does not extend to the post 2015 period when Basel III reforms were fully implemented [44]. In Malaysia, the Islamic Financial Services Act (IFSA) came into force in 2013 specifically to safeguard financial system stability and at the same time, enhance the efficiency and effectiveness of Islamic financial intermediation. The reforms fundamentally reshaped the regulatory and operational environment which evidently, the resilience mechanisms after 2015 especially during the Covid-19 crisis is differ from the global financial crisis [45, 46]. According to [45], the global financial crisis is a financial system originated shock meanwhile, the Covid-19 crisis is exogenous in which, the banks acted more as shock absorbers than amplifiers.

The study believes the inclusion of financial crisis in the model is better explained by the interaction effect between profitability and capital risk. Additionally, crisis is treated as moderating variable between bank size and capital risk. Hence, as presented in the following equation, the model investigates capital risk of Malaysian Islamic bank taking into consideration of the two interaction effects.

Equation:

$$CAPR_{it} = \beta_0 + \beta_1 AQ_{it} + \beta_2 MQ_{it} + \beta_3 LIQ_{it} + \beta_4 PROFIT_{it} + \beta_5 SIZE_{it} + \beta_6 FC_{it} + \beta_7 FC_{it} * PROFIT_{it} + \beta_8 FC_{it} * SIZE_{it} + e_{it}$$

The marginal effect of profitability and size in the above multiplicative interaction model is respectively computed as below:

$$\frac{dCAPR}{dPROFIT} = \beta_4 + \beta_7 FC_{it}$$

$$\frac{dCAPR}{dSIZE} = \beta_5 + \beta_8 FC_{it}$$

Relevant diagnostic tests are conducted before the study proceeds. The study executes the heteroscedasticity test, multicollinearity test, stationary test and serial correlation test. Later, the study identifies the model is best estimated using the fixed effect model (FEM). The F-Chow test, Breusch-Pagan Lagrange Multiplier (BPLM) test and Hausman test reveal the other pooled ordinary least squares (POLS), and the random effect model (REM) is not better than the chosen model as portrayed in Table 2.

TABLE 2 PANEL DATA TESTING

F-Chow Test	BPLM Test	Hausman Test	Appropriate Model
F-statistic 14.56***	Chibar-squared 91.77***	Chibar-squared 76.94***	FEM

Note: *** is significant at 1% level.
Source: Authors' calculation.

EMPIRICAL FINDINGS AND DISCUSSION

Recall, the study is framed as a post-crisis historical analysis as the timeframe covers 2007-2015. Accordingly, the findings of the study should be interpreted within historical context of the global financial crisis (GFC) 2007-2009 and its immediate aftermath.

The diagnostic tests reveal there is no serious issue of heteroscedasticity, multicollinearity, unit root and serial correlation in the estimation. The F-statistic is 11.84 and significant at 1% level that indicates the model is best fit. The model shows 50% of capital risk variation can be explained by the developed model. Table 3 exhibits the model using the fixed effect estimation.

It is worth to highlight that the study uses inverse proxy for capital risk. Therefore, the study transforms the sign of the relationship to the opposite direction for convenience reading purposes. The study reveals all the independent variables in the model is statistically significant in determining capital risks of Islamic banks in Malaysia except the management quality. The results imply good management quality reduces the capital risk, but it does not have influential effect in controlling the Islamic banks capital risk.

TABLE 3 FIXED EFFECT MODEL ESTIMATION

	Coefficient			Standard Error
Asset quality	-0.04	**		0.02
Management quality	-0.94			1.45
Liquidity	-0.17	***		0.03
Profitability	2.83	**		1.32
Size	3.67	**		1.47
Financial crisis	-37.19	***		9.61
Financial crisis*Profitability	-5.73	***		1.59
Non-crisis	(2.83)	**		1.32
Crisis	(-2.90)			1.81
Financial crisis*Size	5.17	***		1.22
Non-crisis	(3.67)	**		1.47
Crisis	(8.84)	***		1.86
Constant	-44.11	***		12.70
F-statistic	11.84	***		
R-squared (within)	0.4994			
Number of Observations	117			

Notes: Number in parentheses is the marginal effect of the multiplicative interaction model. *** and ** are significant at 1% and 5% respectively.

Source: Authors' calculation.

On the other hand, bank size and profitability are reported as the major factors that affect capital risk of Malaysian Islamic bank. The bank capital risk is positively influenced by both the bank size and profitability. The results of bank size evidence the presence of moral hazard of too-big-to-fail in the determination of bank

capital [39]. This is due to bigger banks are exposed to greater capital risk resulting from lower equity capital. Meanwhile, smaller Islamic banks in Malaysia hold more equity capital, thus have less exposure to capital risk. The significant coefficient of bank size postulate given a slight change in size gives influential effect on capital risk. It is rational to document that capital risk is sensitive to the variation of bank size. This is possibly due to the relatively bigger Islamic banks hold low equity capital for diversification activities and the bigger Islamic banks normally have easier access to funding as compared to relatively smaller Islamic banks.

Additionally, profitability is also influential to the Islamic banks' capital level. The greater the profitability earned by the banks, the higher the exposure of capital risk to the banks. The result suggests profitable banks prefer to have lower capital that leads to higher capital risk in exchange to profit potential. Profitable banks are willing to tolerate higher capital risk to earn more returns. In contrast, less profitable banks would maintain sufficient capital to hinder the banks from capital risk exposure [37, 38].

Other than bank size and profitability, liquidity and asset quality are noted as statistically significant to the capital risk. The relationship between these two determinants and capital risk is, however, negatively related. It is viewed that good asset quality is probable to significantly lessen the capital risk. Banks with lower asset quality may have problems holding sufficient capital and thus have higher capital risk. The finding is supported by previous literature, for instance [17-19]. Given the significant finding, it is crucial for the Islamic banks to manage the quality of their assets in order to control the capital risk.

Liquidity and capital are closely related. Shingjergji and Hyseni [13] document, banks with high liquidity risks are exposed by high capital risk. The higher the liquidity, the lower the capital risk. Maintaining an ample liquidity level means the banks have more liquid assets relative to illiquid financing activities. The results suggest the banks that carefully hold their reserve in liquid assets have a positive influence on the equity level of the banks.

Financial crisis that occurs in 2007-2009 evidenced significant impact to the banking system. The study reveals empirical evidence of the financial crisis impacts the Islamic banking system in Malaysia. The estimation rejects the null hypothesis and affirms financial crisis is statistically significant at 1 percent level. Positive coefficient of financial crisis dummy surprisingly implies lesser capital risk of Islamic banks in Malaysia during the period of crisis. It is worth to note that these banks apply the prudent policy and hold more capital during the financial crisis [31]. Due to its influential effect, the study includes the interaction effect in the model to substantiate the last two hypotheses.

Firstly, the study moderates the effect of financial crisis towards the relationship between profitability and capital risk. The result exhibits financial crisis significantly moderates the effect of profitability towards capital risk of Malaysian Islamic banks. Established earlier in the discussion, greater earning Islamic banks have more exposure on capital risk. The interaction effects of financial crisis indicate holding other variables remaining constant, an increase of 1 percent of bank profitability caused the value for capital risk to increase by 2.8 percent for non-crisis period but decrease by 2.9 percent during financial crisis. The inclusion of interaction effect in the model provides new insight of the profitability determinants towards Islamic banks capital risk in Malaysia. During non-crisis period Islamic banks may have lesser equity to optimize their profit potential and are willing to tolerate to more capital risk. This indicates the Islamic banks tend to hold leaner equity in normal period as to enhance their profitability given that, the risks appear manageable. In contrast, during a crisis period, greater earnings Islamic banks are more responsible by having more equity capital acknowledging greater risk exposure in this period. This shows the Islamic banks recognize the possibility of losses and risks thereby, adjust the holding capital by the banks.

The second interaction effect is financial crisis that acts as moderating factor to relate size and capital risk of Malaysian Islamic banks. The results display negative marginal effect during financial crisis and non-financial crisis period. Other variables remain constant, USD1 million increases in bank size inducing 8.84 percent and 3.67 percent increase of capital risk for crisis period and non-crisis period respectively. This finding implies larger Islamic banks in Malaysia are exposed to greater capital risk especially during the financial crisis. The findings is aligned with the theory of too-big-to-fail where larger banks have more tendency to have less capital cushion compared to smaller banks.

CONCLUSION

Banking risk exposure is very much similar for each bank regardless of the traditional conventional banks or the emerging Islamic banks. Among others, capital risk is one of the major concerns in the banking system that triggers the needs of proper mitigation as highlighted in the Basel standard. The study inquires the need to identify the main determinants of capital risks of Islamic banks in Malaysia. These empirical findings from the capital model are expected to provide a worthy steering for the Malaysian Islamic banks in managing and mitigating the risk prudently.

The findings reveal capital risk level relies on many influential factors including asset quality, liquidity, profitability and bank size. Financial crisis also plays an important role in determining the capital risk of Malaysian Islamic banks. The function of financial crisis to prove the existence of interaction effect further strengthens the ideas of substantial effects of financial crisis on capital risk.

In order to have lower capital risks, it is crucial for the banks to ensure good asset quality and high liquidity level. The analysis also discovers there are moral hazard potential among Malaysian Islamic banks with regards to profitability and bank size. Islamic banks with greater profitability and size have greater exposure to capital risk due to lower equity level. However, the inclusion of financial crisis interaction proves otherwise for profitability. Interestingly, the study proves opposite effect between profitability and capital risk during crisis and non-crisis period. The effect shows Islamic banks in Malaysia is being prudent during the financial crisis although they earn greater profit. In this period, the more profit that the bank earns, the lesser these banks are exposed to the capital risk. On contrary, the moral hazard of too-big-to-fail from the size perspective is supported by the interaction effect where capital exposure is greater for larger Islamic banks and significantly higher during the financial crisis.

Practically, rather than interpreting high profitability as justification for reducing equity, the bank managers should treat it as an opportunity to reinforce capital resilience and long-term stability. The regulators are urged to exercise enhanced oversight of larger Islamic banks, implement countercyclical capital buffers and introduce measures to curb moral hazard thereby, ensuring the robustness of the financial system.

This study is constrained by the coverage of the dataset in which it extends only to 2015, covering the global financial crisis (GFC) 2007-2009 and its immediate aftermath. Therefore, the findings should be interpreted as a post-crisis historical analysis and not generalized to the post 2015 period shaped by the full implementation of Basel III and the enforcement of Islamic Financial Services Act (IFSA) 2013 in Malaysia. Future research should revisit the questions with enhanced capital regulations, stronger liquidity standards and highlight external shocks such as Covid-19. This could redefine the Islamic banks resilience and risk behavior.

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