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Do Risk-Taking and *Shariah* Governance Have a Relationship with *Maqasid Shariah*-Based Performance?

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Abstract: This According study examines the characteristics of the *shariah* supervisory board (SSB), risk-taking and Islamic bank (IB) performance. The *maqasid shariah* index determines the performance of an IB, and the performance assessment is more comprehensive. This research data analysis uses the dynamic panel regression estimation technique with the generalised two-step moment method to predict the relationship between *shariah* governance, risk-taking and performance. This study uses IBs financial data from around the world for 2014–2018, which comes from the bank scope database. The empirical results found that risk-taking has positive significance to *maqasid shariah*, while SSB size, expertise and cross membership have a significant negative relationship to performance. Other variables, such as leverage, are proven to have negative significance to *maqasid shariah*. The originality of this research is linking *maqasid shariah* with risk-taking and governance, expanding the sample to include many countries, and robustness checking based on Gulf Cooperation Council and non-GCC member states. The research has implications for stakeholder theory because IBs can accommodate various stakeholder interests. Governance across countries is not uniform, so it is challenging to link specifically to performance.

Keywords: *Islamic Bank, Risk-Taking, Shariah Supervisory Board, and Maqasid Shariah.*

JEL Classification: *G21, G28, G32, and M480.*

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Introduction

Islamic banks (IBs) are Islamic financial institutions that not only focus on serving the needs of people who meet the principles of *shariah* but must also provide benefits to society. Hence, the dimension of performance measurement is crucial. Measurement of IB performance is not only from the financial dimension but also from social aspects, justice and the fulfilment of *shariah* principles (Mutia et al., 2019). This is because the purpose of *shariah* (*maqasid shariah*) is to protect and preserve the public interest (*maslahah*) in all aspects and segments of life (Lamido, 2016). Shinkafi et al. (2017) suggest linking *maqasid shariah* with wealth management, socio-economy, investment, IB, risk management, corporate governance, human resource development, prohibiting usury and consumer studies. Therefore, this study uses a performance measure of *maqasid shariah* to obtain a more comprehensive assessment of IB performance. Many factors can affect the performance of IBs, including the governance structure and risk-taking.

The implementation of good *shariah* governance for the continuity of IBs is crucial. One of the characteristics of *shariah* governance is the presence of a *shariah* board (Ajili & Bouri, 2017). As the main feature of *shariah* governance, the *shariah* board is considered the highest regulator in IB operations because it is an additional layer for monitoring and supervising bank operations. The *shariah* board is tasked with: (1) ensuring that all contracts comply with the provisions of *shariah*; (2) helping

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prevent potential risks through due diligence based on Islamic ethics; (3) conducting *shariah* audits to assure stakeholders that the bank operates following *shariah* standards; and (4) issuing fatwas to create stakeholder trust in *shariah* compliance (Nawaz, 2019).

Not all Islamic financial institutions (IFIs) implement good *shariah* governance. Poor governance can have fatal consequences and even lead to an entity's bankruptcy. IB is also inseparable from the failure of *shariah* governance which leads to financial failures and difficulties (Muhamad & Sulong, 2019). Good governance practices are needed to ensure the sustainability of IBs in achieving *maqasid shariah* to improve the welfare of the people (Asutay, 2012).

Many phenomena occur in various countries regarding the failure of *shariah* financial institutions due to poor governance. For example, the Islamic Investment Company of Egypt which was closed in 1988 due to weak corporate governance. The Bank of South Africa was closed in 1997 due to a lack of oversight by regulatory authorities, poor management, weak risk management and high prevalence of insider borrowing. Ihlas Finance in Turkey was closed in 2001, due to financial difficulties and weak corporate governance. Ihlas' financial closure was mainly due to the absence of internal checks and balances. Bank Islam Malaysia Berhad lost RM 457 million in 2005. This was due to the improper composition of the board because board members did not correctly understand the banking sector. Dubai Islamic Bank (DIB) had a financial irregularity involving two former DIB executives, resulting in a loss of USD 501 million (Hasan, 2012).

IBs must apply risk management more carefully, considering that its products are very complex compared to conventional banking products. Therefore, more stringent risk mitigation is needed to avoid operational, insolvency, reputational and other risks. The unique characteristic of IBs presents a governance component different from existing governance, namely the presence of the *shariah* supervisory board (SSB). Through a suitable *shariah* governance mechanism that will further increase risk mitigation, IBs will not take excessive risks, which will ensure their stability is maintained.

This research is necessary because it explores the relationship between *shariah* governance, risk-taking and the performance of IBs. This research was conducted using data from IBs around the world to explore the relationship between *shariah* governance and risk-taking with the performance of IBs measured using the maqasid *shariah* index (MSI). This study analyses the specific effects of *shariah* governance from each region on the performance of IBs. The regional analysis is expected to provide an overview of the specific impact of the governance structure, given that each country has different patterns. Researchers use regions because each region has the same culture and level of assets. This research is expected to contribute by: (1) filling the gap in the literature review, namely the relationship between *maqasid shariah* and risk-taking and *shariah* governance in the IB industry, which previously was only associated with zakat and waqf and bank efficiency; (2) providing empirical evidence in agency theory that explains the relationship between *shariah* governance, risk-taking and IB performance; and (3) enriching the literature on the use of the MSI as a measurement of performance. *Maqasid shariah* is still slightly implemented in the research of IFIs. Therefore, the researcher conducted this research to provide a comprehensive picture of performance measurement following the *shariah* aspects of IBs. The results of this research provide empirical evidence on the relationship between SSB characteristics and risk-taking with performance so that they can consider the composition of the SSB and the level of risk that can be tolerated to improve bank performance.

This research offers several novelties. First, a link between risk-taking and sharia governance with maqasid sharia-based performance measurements in a research model framework. Second, this study expands the sample of IBs from various regions whereas previous studies only covered one country and one region. Third, a robustness check based on regional Gulf Cooperation Council (GCC) and non-GCC member states provides a more in-depth analysis.

Literature Review

According to Mollah & Zaman (2015), the SSB is the main feature of IB governance. The SSB is essential in IB because it is considered the highest regulator. The SSB represents an additional layer of governance for monitoring and supervising IB operations. The main functions of the SSB include: (1) ensuring that all contracts comply with *shariah*; (2) helping prevent potential risks through due diligence based on Islamic economic ethics;(3) conducting *shariah* audits to convince stakeholders that the bank operates in accordance with predetermined standards; and (4) issuing fatwas to create

stakeholder trust in *shariah* compliance (Nawaz, 2019). Stakeholder theory identifies that the company has a responsibility and reflects this in the company's mechanism to get legitimacy from the community (Naciti, 2019).

Agency problems in IBs are related to sharia compliance in transactions and products (Mollah et al., 2016). The SSB can reject products/contracts that are not under sharia principles, even though they are profitable (Farag et al., 2018). In *mudharabah* contracts, especially unrestricted *mudaraba*h contracts, IBs share profits with the Investment Account Holder (IAH) owner. However, the risk is borne by the IAH, and they are not allowed to be involved in managing the funds. Unlike shareholders, the IAH does not have the right to appoint a board of directors or SSB and has no right to monitor funds management (Farag et al., 2018). Bank shareholders also have an incentive for risk-taking because of moral hazard problems related to deposit insurance (Mollah et al., 2016). Pathan (2009) states that a more independent board will serve shareholders better by encouraging higher risk-taking activity.

Hypothesis Development

SSB Size and Islamic Bank Performance

The results of the study by Mollah and Zaman (2015) showed that a larger SSB size positively impacts IBs performance when they carry out supervision but does not impact when they only act as advisors. SSB size positively impacts bank performance with return on assets (ROA) and return on equity (ROE) proxies (Hakimi et al., 2018). Syafa and Haron (2019) found that SSB size significantly affects IB performance. Nomran et al. (2016) found that a larger SSB improves IBs performance. Conversely, Nawaz (2017) found that SSB size has a negative relationship with IB performance. In line with Ajili and Bouri (2017), the SSB is more focused on compliance with *shariah* principles rather than maximising profit.

In the context of IBs in the international sphere, the composition of the SSB consists of various Islamic law experts, and those with finance backgrounds and doctoral degrees. A SSB size that is too large will cause communication problems between members. According to Jensen (1993), the more significant number of boards are ineffective in making corporate decisions. Based on the previous literature review that SSB size has a negative correlation with the performance of IB, the formulation of the hypothesis in this study is as follows:

H1: SSB size has a negative effect on performance

SSB Expertise and Islamic Bank Performance

The SSB is in charge of supervising and examining aspects of *shariah* in every service and product of IBs. The SSB checks and analyses all documents to ensure compliance with *shariah* principles, including agreements that contain financial elements (Syafa & Haron, 2019). Financial knowledge is fundamental to reducing the examiner's skills and inspection task gap. According to Quttainah and Almutairi (2017), an SSB with an educational background in finance or accounting will improve the operational supervision function and therefore improve the performance of the IB.

The experiment of SSB members in this research is related to their knowledge and educational background in finance which is expected to contribute significantly to the supervisory process. Educational background and experience in finance or accounting will support SSBs reputation. Knowledge of finance or accounting is expected to understand industry operations better and focus more on risk management to improve IB performance. Based on these arguments, the second hypothesis is as follows:

H2: SSB expertise has a positive effect on performance

SSB Qualification Doctoral and Islamic Bank Performance

The doctoral level is expected to increase knowledge and the maturity level of thinking and provide much insight into the decision-making process. IBs require supervision from people who have formal competence, such as a doctoral degree (Bukair & Rahman, 2015). Someone with high academic qualifications is considered capable of providing solutions to complex problems by providing a more

in-depth analysis (Chen, 2014). Berger et al. (2014) argue that the level of education correlates with cognitive abilities that can increase the effectiveness in decision making. According to Safiullah and Shamsuddin (2017), SSB members with high qualifications can improve their ability to review the implementation of *shariah* principles in operations and reduce excessive risk-taking. This is evident from previous empirical results. A SSB with a doctoral qualification significantly affects IB's performance in Nomran et al. (2018). Syafa and Haron (2019) found that the level of doctoral education significantly affects IB's performance.

SSB members with doctoral qualifications are expected to be better at carrying out their supervisory functions to increase IBs performance. Qualified doctors have higher cognitive abilities for providing a comprehensive analysis in evaluating the risk of *shariah* compliance and bank operational risk. Based on these arguments, the third research hypothesis is as follows:

H3: A SSB with doctoral qualifications has a positive effect on performance

SSB Cross Member and Islamic Bank Performance

SSB cross-membership is where an SSB member gets concurrent assignments at two or more institutions simultaneously. Farook et al. (2011) argue that SSB cross-membership can provide opportunities for discussion between members on other IB, thereby enriching insights into the supervisory function. On the other hand, cross-membership raises confidentiality issues and conflicts of interest because, simultaneously, a person is a member of a SSB for more than one entity. According to (Grais & Pellegrini, 2006), cross membership allows SSB members to disclose confidential and valuable information to competitors. Abdullah et al., (2013) stated that cross-membership could reduce performance due to the limited time owned by SSB members.

The results of study by Nomran et al., (2016) suggest that SSB cross-membership negatively correlates with the argument that cross-membership can reduce effectiveness in carrying out tasks. Quttainah and Almutairi (2017) found a positive relationship between SSB cross membership and IB performance with the proxies of ROA, ROE and Tobin's Q. Syafa and Haron (2019) provide scientific evidence that an SSB with a significant cross-membership portion will further improve the proxied performance of the IB with the MSI.

The higher the percentage of the number of members with SSB cross membership, the more interaction between SSB members from other banks will increase. This provides the opportunity to exchange information and ideas while adhering to business ethics. This information exchange is expected to provide good input to improve supervision. Each cross-membership member maintains harmony and conflicts of interest to create a healthy climate of competition between IBs. Based on these arguments, the fourth hypothesis is formulated as follows:

H4: SSB cross membership has a negative effect on performance

Risk-Taking and Islamic Bank Performance

As an institution that manages customer funds, IBs face a classic problem: obtaining high returns with low risk. Risk management is essential in achieving IB performance. Excessive risk-taking can become a source of problems for banks because it can erode bank assets when investment fails. Previous research results prove that risk-taking is correlated with profitability.

Several previous studies have proven the relationship between risk-taking and bank performance. Sufian and Habibullah (2009) reveal that credit risk significantly and positively impacts bank profitability. The second finding of Tan and Floros (2012) shows that the profitability of commercial banks in China is significantly affected by credit risk. Fang et al., (2019) said that profitability is more robust when banks have a higher level of risk because they can face stricter levels of competition. The results of the study by García-Herrero et al., (2009) explain that commercial banks in China with a higher level of risk have higher profitability, and there is no apparent impact of competition on bank profitability. Inefficient banks take risks by providing higher interest rates to prospective customers (García-Alcober et al., 2019).

IBs have a variety of products. On one hand, this will reduce credit risk, while the religiosity of the debtors will encourage loyalty and prevent default. On the other hand, IBs will face a greater risk

because of the complexity of the contract in IB financing. For example, profit and loss sharing (PLS) will create a moral hazard. IBs with stability inefficiency will be able to generate financial profits and a better understanding of religiosity from the side of both the bank and the debtor so that it can avoid moral hazard behaviour. Based on the results of the previous literature review that risk-taking has a positive relationship with performance, the researchers formulated the following hypothesis:

H5: Risk-taking has a positive effect on performance

Research Design

Data

This study uses secondary data with bank-level and cross-country as the unit of analysis. All relevant information about specific characteristics of banks is derived from financial reports and annual reports of IBs around the world. The primary source of data collection is the Bankscope database provided by the Bureau Van Dijk company. Meanwhile, GDP per capita data is obtained from World Bank data. This database contains financial data for all IBs around the world. Non-financial data would be collected from the annual reports of each IB. The scope of this research was conducted worldwide. The sample in this study was selected based on the International Financial Reporting Standards (IFRS) implementation as the reporting standards in the database only adopted IFRS and local standards of each country. This study uses company information disclosed in annual reports published from 2014 to 2018.

Measurement Variable

Dependent Variable

The dependent variable in this study is the performance of IBs, which is proxied by the MSI. The MSI in this study adopts The Maqasid Al-*Shariah* Performance Evaluation Model (MPEM) method. The steps for calculating MPEM are shown in Table 1. This MPEM concept was adopted from previous studies (Antonio et al., 2012; Mohammed & Taib, 2015; Prasojo et al., 2022b; Syafa & Haron, 2019).

Independent Variable and Control

Independent variables in this study are the characteristics of SSB members and risk-taking. SBB characteristics refer to previous literature (Bukair & Rahman, 2015; Syafa & Haron, 2019) consisting of: (1) SSB size; (2) SSB expertise; (3) SSB doctor; and (4) SSB cross-member. Risk-taking uses the translog specification measurement to estimate inefficiency (Fang et al., 2019; Tabak et al., 2012). Control variables consist of size, leverage and GDP growth per capita (Dalwai & Mohammadi, 2020; Louhichi et al., 2019; Prasojo et al., 2022a; Safiullah & Shamsuddin, 2017). The measurements of each variable are shown in Table 2**.**

Empirical Model

This study examines the relationship between the characteristics of *shariah* governance, risk taking and IB performance through the following regression models:

$$msi_{it} = \beta_0 + \beta_1 risk\_taking_{it} + \beta_2 ssb\_size_{it} + \beta_3 ssb\_expertise_{it} + \beta_4 ssb\_doctor_{it} + \beta_5 ssb\_crossmember_{it} + \beta_6 size_{it} + \beta_7 lev_{it} + \beta_8 gdp\_growthpercap + \varepsilon_{it} \quad (1)$$

in which,

msi	=	*Maqasid shariah* index
ssb_size	=	Number of ssb
ssb_expertise	=	Number of SSB expertise
ssb_doctor	=	Number of ssb with doctoral qualifications

ssb_crossmember = Number of SSB cross membership
size = Natural log of total assets
lev = Total debt to total assets ratio
gdp_growthpercap = Growth rate of gdp per capita

The risk-taking model is adopted from (Fang et al., 2019) with the following model:

$$Ln\left(\frac{Z-score}{W2}\right) = \delta_0 + \sum_j \delta j\ LnYjit + \frac{1}{2}\sum_j\sum_k \delta jkLnYjitLnYkit + \beta 1Ln\left(\frac{W1}{W2}\right)it + \frac{1}{2}\beta 2Ln\left(\frac{W1}{W2}\right)it + \sum_j \theta jLnYjitLn\left(\frac{W1}{W2}\right)it + \nu it - \nu it \quad (2)$$

Testing data to prove the hypothesis of this study use the dynamic panel regression estimation technique with the two-step generalized method of moment (GMM) method. This method was chosen to avoid endogeneity problems (Daher et al., 2015).

Table 1. *Maqasid Shariah* Index Formula

Dimensions	Weight	Average (%)	Elements	Average (%)	Ratio	Average (%)
D1:Preservation of Faith	W1	20	E1: Freedom of belief	100	R1: Investment in mudarabah and musharakah / total investment	50
					R2: Total income – non-halal income / total income	50
Preservation of Life	W2	20	E2: Maintain human dignity	50	R3: CSR expenses / total costs	50
					R4: Distribution of zakat) / net	50
			E3: Upholding human rights	50	asset	
Preservation of Intellect	W3	20	E4: Initiation scientific thinking	50	R5: Investment in Technology / total assets	50
			E5: Prevent lack of knowledge	50	R6: Resign employees) / total employees	50
Preservation of Progeny	W4	20	E6: Pay attention to all parties including stakeholders	100	R7: Net profit /shareholder equity	16.67
					R8: Research expenses / total expenses	16.67
					R9: Training and development expenses / total expenses	16.67
					R10: Net profit/ total assets	16.67
					R11: Non-performing Financing	16.67
					R12: Tax paid / profit before tax	16.67
Preservation of Wealth	W5	20	E7: Public welfare	50	R13: Investment in the real economic sector / total investment	33.33
			E8: Minimizing economic inequality	50		
					R14: Investment in SME`s / total investment	33.33
					R15: Investment in agriculture / total investment	33.33

Table 2. Measurement Independent Variable

No	Variable	Definition	Measurement
1	SSB Size	Number of SSB members	Number of SSB members
2	SSB Expertise	Percentage of SSB with Finance/Accounting background	The number of SSB who know about finance or accounting) /total SSB
3	SSB Doctor	Percentage of SSB with doctoral education	Number of doctoral SSB /total SSB
4	SSB Cross Member	Number of SSB with cross membership as SSB in other entities	Number of SSB with cross membership/total SSB
5	Risk-Taking	Z-score by combining 3 liquidity risks, credit risk and capital risk	a. Input price: profit sharing ratio) / total deposits; and the ratio of non-profit sharing expenses) / fixed assets b. Output: total financing, deposit, securities, and non-profit sharing income
6	Bank Size	Total Asset	Ln Total Asset
7	Leverage	Debt to total assets ratio	Total debt / total asset
8	GDP growth rate of per capita	The annual growth rate of per capita GDP in percentage	The annual rate of per capita GDP in percentage year to $t\text{-}t_{-1}$

Findings and Discussion

Finding

Table 3 provides an overview of descriptive statistics consisting of mean, standard deviation, minimum and maximum for all dependent, independent and control variables in this research model.

Table 3. Statistic Descriptive

Variable	Obs	Mean	Std. Dev.	Min	Max
Maqasid Shariah Index	334	0.30	0.20	0.00	0.93
SSB Size	329	3.15	2.05	-	11.00
SSB Expertise	329	0.38	0.77	-	3.00
SSB Doctor	329	2.09	1.63	-	8.00
SSB Cross Member	329	0.72	1.33	-	5.00
Risk Taking	322	0.02	1.04	(0.31)	3.21
Leverage	334	0.80	0.23	0.01	0.96
Size	334	7.72	2.18	1.87	11.49
GDP Growth Percapita	329	1.49	2.85	(0.70)	6.74

Focusing on the dependent variable in Table 4, this indicates that IBs have met the standard items of *maqasid shariah*. A minimum value that is too small indicates a poorer bank performance. A low maqasid value can be derived from the bank, which cannot fulfil the maqasid *shariah* assessment items, or it could be that the bank does not disclose complete information in their annual report. Saudi Arabia obtained an average value for implementing the MSI. Banks in Saudi Arabia show *maqasid shariah* performance above average. When looking deeper, there are still some items that are not owned at all. Almost all Saudi banks do not disclose information about corporate social responsibility (CSR), investment technology, employee turnover, research costs and employee training costs. Banks in the Philippines are the worst performing according to their *shariah*. The sample of IBs from the Philippines is only one bank. It can be traced further than the lowest figure that occurred in 2014. Banks in 2014 only disclosed investments in the real sector and Small Medium Enterprises (SMEs). In addition, the poor performance was triggered by the condition that the bank had been

experiencing losses in the period 2015 to 2018, resulting from some minus in several ratios. The banks with the most considerable assets dominate IBs in the GCC region. The Al Rajhi Banking and Investment Corporation was ranked first in terms of total assets and total financing. Regarding operating profit, the Al Rajhi Banking and Investment Corporation is consistently ranked higher than other banks in the sample.

Table 4. Baseline Full Sample

	(1) ms	(2) ms	(3) ms	(4) ms	(5) ms	(6) ms
L.ms	0.731***	0.689***	0.753***	0.716***	0.721***	0.732***
	(133.211)	(24.067)	(24.125)	(25.160)	(23.479)	(23.311)
risk_taking	0.005***	0.003	0.004*	0.004	0.003	0.004
	(4.057)	(0.969)	(1.778)	(1.242)	(0.967)	(1.062)
ssb_size	-0.005***	-0.002				
	(-14.623)	(-1.011)				
ssb_expertise	0.001		-0.006***			
	(1.337)		(-3.281)			
ssb_doctor	-0.008***			-0.026***		
	(-11.748)			(-4.869)		
ssb_crossmember	-0.002				-0.000	
	(-1.213)				(-0.073)	
size	0.024***	0.026***	0.021***	0.025***	0.025***	0.019***
	(13.571)	(9.776)	(6.739)	(7.167)	(8.407)	(6.105)
LEV	-0.100***	-0.105***	-0.092***	-0.120***	-0.114***	-0.080***
	(-5.917)	(-3.589)	(-2.854)	(-4.130)	(-3.804)	(-2.661)
gdpgrowthpercap	0.007***	0.006***	0.006***	0.006***	0.007***	0.006***
	(12.653)	(4.992)	(5.466)	(4.736)	(6.460)	(5.337)
constant	0.005	-0.023	-0.018	0.035*	-0.024	-0.015
	(1.136)	(-1.350)	(-0.912)	(1.877)	(-1.109)	(-0.835)
Obs.	251.000	251.000	251.000	251.000	251.000	251.000
Bank	66.000	66.000	66.000	66.000	66.000	66.000
AR2 stat	-0.254	-0.457	-0.404	-0.127	-0.402	-0.468
AR2 p-stat	0.799	0.647	0.687	0.899	0.688	0.640
Hansen stat	59.368	43.891	38.643	38.220	38.059	33.462
Hansen p-val	0.959	0.078	0.195	0.208	0.213	0.396

t-statistics in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Generalised two-step moment (GMM) panel regression results in examining the five research hypotheses presented in Table 4. Fund owners respond to the development of IBs from the perspective of profitability and corporate governance. The fixed effects method cannot capture the correlation between variables if these changes occur quickly (Nakano & Nguyen, 2013). We use the GMM method to predict the relationship between risk-taking, *shariah* governance, and IB performance. The independent variable *maqasid shariah* lag value was used in the econometric analysis. The significant lag value of *maqasid shariah* means a persistent effect in the model. Before the hypothesis is carried out, the normality test is conducted to eliminate the outliers' data.

Robustness Check

Robustness testing is done by grouping the samples into two regions: GCC and non-GCC. This grouping is based on bank characteristics of the *shariah* governance structure. Countries in the GCC do not require IBs to have a SSB, while non-GCC countries are obligated to attend a SSB at the IBs. The statistics presented in Table 5 show the characteristics of the relationship between a SSB and risk-taking on *maqasid shariah*.

Table 5. Baseline GCC Sample

	(1) ms	(2) ms	(3) ms	(4) ms	(5) ms	(6) ms
L.ms	0.895***	0.858***	0.802***	0.916***	0.786***	0.837***
	(18.477)	(30.891)	(30.025)	(38.020)	(33.482)	(45.121)
risktake	0.001	0.008*	0.011**	0.004	0.009*	0.017***
	(0.303)	(2.047)	(2.310)	(1.041)	(2.034)	(4.297)
ssb_size	-0.016	-0.012***				
	(-1.076)	(-4.154)				
ssb_expertise	0.118**		0.032*			
	(2.508)		(1.702)			
ssb_doctor	0.022			-0.013***		
	(1.165)			(-3.474)		
ssb_crossmember	-0.042**				-0.009***	
	(-2.412)				(-3.429)	
size	0.027**	0.019***	0.031***	0.011*	0.030***	0.023***
	(2.566)	(2.771)	(6.053)	(2.006)	(7.645)	(4.477)
LEV	-0.138*	-0.067	-0.162***	-0.026	-0.151***	-0.113***
	(-1.952)	(-1.598)	(-4.486)	(-0.613)	(-4.384)	(-2.945)
gdpgrowthpercap	0.001	0.006***	0.004***	0.005***	0.006***	0.005***
	(0.511)	(4.683)	(5.604)	(6.744)	(4.865)	(6.575)
constant	-0.101	-0.010	-0.060**	-0.003	-0.041	-0.032
	(-1.691)	(-0.338)	(-2.619)	(-0.213)	(-1.540)	(-1.538)
Obs.	113.000	113.000	113.000	113.000	113.000	113.000
Bank	29.000	29.000	29.000	29.000	29.000	29.000
AR2 stat	0.761	1.245	1.096	1.298	1.194	1.181
AR2 p-stat	0.447	0.213	0.273	0.194	0.232	0.238
Hansen stat	16.587	24.090	17.886	20.235	24.738	23.279
Hansen p-val	1.000	0.768	0.764	0.947	0.738	0.670

t-statistics in parentheses
* p < 0.10, ** p < 0.05, *** p < 0.01

Table 6 shows the statistical results that link SSB characteristics and risk-taking with the performance of IBs in non-GCC regions. These results illustrate the relationship between the characteristics of SSB and risk-taking with IB performance. There are differences in the SSB size variables compared to the results of the GCC region. The impact of SSB size is not significantly negative on IB performance. We suspect some countries outside the GCC region have SSB duties as only *shariah* advisors. However, some countries require a SSB to act as an advisor and a *shariah* compliance supervisor. The impact of SSB size is not significant in

reducing the level of IB performance. According to (Mollah & Zaman, 2015), the SSB will contribute more when it functions as a supervisor.

Table 6. Baseline Non-GCC Sample

	(1) ms	(2) ms	(3) ms	(4) ms	(5) ms	(6) ms
L.ms	0.516***	0.530***	0.591***	0.558***	0.565***	0.562***
	(14.772)	(66.261)	(33.836)	(46.164)	(30.317)	(23.403)
risktake	-0.008**	-0.001	0.001	-0.016***	-0.002	-0.001
	(-2.212)	(-0.750)	(0.676)	(-6.022)	(-0.952)	(-0.667)
ssb_size	-0.001	-0.001				
	(-0.204)	(-1.101)				
ssb_expertise	-0.004		-0.007***			
	(-1.093)		(-4.109)			
ssb_doctor	-0.001			-0.014***		
	(-0.266)			(-7.195)		
ssb_crossmember	0.002				0.011***	
	(0.573)				(7.496)	
size	0.013***	0.015***	0.012***	0.018***	0.009***	0.012***
	(5.357)	(20.840)	(14.179)	(11.687)	(11.443)	(10.883)
LEV	-0.051***	-0.062***	-0.050***	-0.069***	-0.052***	-0.055***
	(-2.883)	(-12.699)	(-6.377)	(-4.053)	(-6.351)	(-5.166)
gdpgrowthpercap	0.012***	0.014***	0.014***	0.016***	0.016***	0.014***
	(4.571)	(12.297)	(16.818)	(12.861)	(11.869)	(9.694)
_cons	0.047***	0.035***	0.027***	0.025**	0.042***	0.032***
	(3.463)	(13.001)	(5.856)	(2.507)	(8.148)	(4.309)
Obs.	138.000	138.000	138.000	138.000	138.000	138.000
Bank	37.000	37.000	37.000	37.000	37.000	37.000
AR2 stat	-1.404	-1.472	-1.456	-1.154	-1.617	-1.446
AR2 p-stat	0.160	0.141	0.145	0.248	0.106	0.148
Hansen stat	26.086	29.702	27.370	33.227	26.716	26.266
Hansen p-val	1.000	0.583	0.700	1.000	0.587	0.708

t-statistics in parentheses
* p < 0.10, ** p < 0.05, *** p < 0.01

Discussion

The first finding is that SSB size has a negative effect on the performance of IBs. These findings are consistent with (Nawaz, 2019; Jensen, 1993; Lipton & Lorsch, 1992). This result contrasts with the findings of Mollah and Zaman (2015) that SSB size has a significant positive relationship with IB performance. The size of a SSB that is too large can reduce its effectiveness. In addition to a large number of members, it will increase board compensation and thus reduce profits. Governance studies in the banking sector generally say that when the SSB size increases, the control and monitoring functions will decrease (Mamatzakis & Bermpei, 2015; Pathan & Faff, 2013). The nature of the IB business is so complex that the large size of the SSB can be justified. In practice, costs associated with the remuneration of SSB members are not proportional to the board's contribution to the bank. This provides an insight that a larger SSB size does not contribute significantly to IB performance, even though they are an integral part of the IB business model. These findings indicate that a large SSB size

will impact increasing monitoring and communication costs, which can lead to a decrease in performance, consistent with agency theory (Jensen, 1994).

The unexpected finding in the second hypothesis is that SSB expertise has both a negative and significant effect on IB performance, so the second hypothesis is rejected. This finding contrasts with the previous research (Quttainah & Almutairi, 2017; Syafa & Haron, 2019). The SSB expertise is related to skills in finance or accounting which are expected to better understand IB operations from a financial perspective to increase prudence. According to Quttainah and Almutairi (2017), a SSBs mission is similar to that of the audit committee, which is carrying out contract audit tasks with a financial element and ensuring *shariah* compliance. In this context, a SSB with a background in accounting or finance minimises financial errors. However, many SSBs act as advisors so that they are not involved in the direct examination of financial contracts.

The third hypothesis proposed, was that a SSB with doctoral qualifications has a positive effect on the performance of IB. This is rejected because the regression test results show a significant adverse effect. These results are similar to previous findings (Nomran et al., 2018; Syafa & Haron, 2019). The majority of all IBs have SSB members with doctoral degrees. Many SSB members have doctoral degrees, but few have knowledge and experience in finance and IB. Lack of knowledge of finance and IBs can have implications for weak supervision. SSB members should not only have a doctoral degree but must be supported by having general knowledge of finance and banking.

The statistical results show that SSB cross-membership has a negative effect on the performance of IBs, which is proven insignificant. Therefore, the third hypothesis in this study is rejected. These results contradict the research by Quttainah and Almutairi (2017) and Syafa and Haron (2019). An IB that has more cross-membership members can reduce bank performance. Cross-membership is considered inefficient in allocating time, resources and conflict of interest. Members of the SSB cross-membership can experience the pressure of conflicts of interest because, at the same time, they supervise several IBs. This can affect the allocation of time and the ability to think in analysing and monitoring. A SSB, which focuses on one IB, should be able to concentrate and focus on conducting supervision to improve the performance of SSB members.

Overall, the characteristics of a SSB harm IB performance. We suspect that most SSBs are *shariah* advisors. This is reflected in most SSBs, which have an Islamic law background. These findings support the SSBs contribution to IBs, which significantly emphasises the supervisory mechanism to impact IB performance.

Risk-taking has been shown to significantly affect the performance of IB at a significance level of less than 1%. This result is consistent with the findings of Fang et al. (2019), García-Alcober et al. (2019), García-Herrero et al. (2009), and Sufian and Habibullah (2009). An IB with a high risk has a higher performance. An IB takes higher risks because of the complexity of the contracts from the products they have. In addition, IBs have an excellent product diversification, resulting in a higher income. Based on data from the annual report, the distribution of IB funding (investment) is primarily allocated to the real sector based on projects such as the agricultural sector, manufacturing, transportation, infrastructure, traders, services, residential property, commercial (property development), tourism, oil and gas, government and SMEs. In practice, project-based financing will reduce the risk of failure because every project developed will be monitored until the end. Projects that have been successfully created will generate a revenue so that customers who receive financing can pay instalments and service fees based on the scheme in the contract.

The control size variable and GDP growth per capita are positively related to performance, while leverage is negatively related to performance. The size of the IB is proxied by total assets. This indicates that IBs with higher total assets will contribute to increasing IB performance. The second control variable uses GDP growth per capita. When GDP per capita increases, the growth of IB third-party funds will be triggered. Low-cost third-party funds known as current accounts and saving accounts (CASA) will contribute significantly to profits when distributed for profitable projects. The third control variable is leverage, which is proxied by the ratio of total debt to total assets. Leverage is proven as being able to reduce IB performance. This means that the higher the leverage ratio, the lower the IBs performance.

Summary and Conclusion

This paper aims to examine the impact of *shariah* governance and risk-taking characteristics on the maqasid *shariah*-based performance of 70 IBs operating in various countries, with variable control size, leverage and GDP growth per capita. The results of this study indicate that risk-taking has a significant positive relationship with the MSI. Our results further show a significant negative relationship between SSB size, expertise and cross-membership with the MSI. Our results for the variable control size and GDP growth per capita significantly positively affect maqasid *shariah*. It has been proven that leverage has a significant negative effect on maqasid *shariah*. These results prove that *shariah* governance and risk-taking can be related to performance based on maqasid *shariah* indicators. This finding strengthens the agency theory, which explains the relationship between bank management and fund owners. IB management tends to take high risks to get higher profits. The presence of a SSB as a supervisor can prevent moral hazards so that this profit is fairly distributed to fund owners. Our study provides additional analysis by separating the two sample categories into IBs in GCC and non-GCC countries. This aims to analyse the differences between *shariah* governance structures on IB performance. The result is that there is a difference in the SSB Size, which is not significant to performance.

This research has several implications, which are implications for theory and practice. There are two implications for the theory: the stakeholder theory and the agency theory. First, it does not support stakeholder theory. The presence of a SSB has not been able to increase performance, so it can reduce customer legitimacy in trusting IB products (Naciti, 2019). Second, supporting the stakeholder theory of IB as an agent, it can control excessive risk-taking so that an IB is more efficient and ultimately achieves better performance.

The findings of this study also have implications for the governance structures and risk-taking. Regarding governance structures, the absence of an internationally applicable *shariah* governance framework can significantly impact performance. Currently, IBs governance is based on each country's rules, so it is not easy to precisely compare the impact on performance. This study is based on the IBs sector, so that the findings can be extended to IFIs other than banks. Related to risk-taking, increasing efficiency will reduce excessive risk-taking.

This study has several limitations. First, this study includes a limited sample, requiring a more prolonged study duration. Second, only the characteristics of the governance structure are included in this study.

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