THE DETERMINANTS OF NON-PERFORMING FINANCING IN INDONESIAN ISLAMIC BANKS: DO CORPORATE GOVERNANCE MATTER?

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Abstract.

Purpose– This paper aims to examine the relationship between corporate governance and non-performing financing of Indonesian Islamic banks

Research methodology – This study employs panel data with self-assessment index to measure good governance.

Findings – The results revealed that good corporate governance self-assessment index affect non-performing financing of Indonesian Islamic banks positively

Research limitations – The article analyses Indonesian Islamic banks Islamic banks only and until 2020 only because of Islamic bank'smerger that interferes the research. Comparison with conventional banks could also have been done

Practical implications – the effectiveness of corporate governance aligns with the agency conflict that will reduce the non-performing financing. Regulators should give more emphasis on effective implementation of good governance especially on the method;

Originality/Value – the study adds to the existing literature of corporate governance which is measured by composite value of good corporate governance self-assessment index.on non-performing financing in Indonesian Islamic banks by using the dynamic panel approach

Keywords (3–5):Corporate Governance, Indonesia, Islamic Banks, Non-Performing Financing, Panel Data

JEL Classification: C33, G21,G34,

Introduction

Credit risk is a major source of financial instability in the banking sector (Basel Committee on Banking Supervision, 2000). The global financial crisis is only the most recent example where bad credit risk management had a disastrous effect on the economy. Developing countries such as Indonesia also suffered from crisis such as Asian crisis in the late 90s and subprime mortgage crisis in 2008. The problems faced by Asia's banking systems were the legacy of years of bad

lending practices, fuelled by inadequate supervision and regulation, that led to rapid lending growth and excessive risk taking (Das & Ghosh, 2007). According to Hada, Misu, Iuga, and Wainberg (2020), the financial crisis in 2008 started in the USA and labelled as a cause of default on mortgages and loans. Increasing the NPL rate is the main reason for reducing bank revenues and, implicitly, for decreasing profits or recording losses. After the global crises, NPLs are mainly under the eyes of government and banking management since they are considered with the failure and crises of the banking system (Ghosh, 2015). Arunkumar and Kotreshwar (2005) see that the credit risk causes 70% of the overall banking risk whereas the remaining 30% are shared between the market and operational risk. Moreover, the credit risk is the main instability score in the banking system (Khan , 2003).

The same thing also applied for Islamic banks, where credit risk is the cause of 80% of bank failures because defaults can also trigger liquidity, interest rate, downgrade and other risks (Ali, Zulkhibri, & Kishwar, 2019). Comparing to conventional banks, there are various opinion regarding Islamic banks and non-performing financing. There is an opinion said that Islamic banking industry is built on financial principles that are sufficient to ensure safety and to immunize financial institutions from common bank risks. According to IMF (2010), Islamic banks fared differently than Conventional banks during the global financial crisis. Islamic Banks'business model helped contain the adverse impact on profitability in 2008, while weaknesses in risk management practices in some Islamic banks led to larger decline in profitability compared to Conventional banks in 2009. It is consistent with Misman and Bhatti (2020) that Islamic banks were not greatly affected by the GFC and performed better because they had lower credit risk during 2008 to 2010. The resilience of Islamic banks during crises implies that the Islamic banking is relatively safer compared to conventional banking. Nevertheless, some said that Islamic banks are also affected by the crisis like the conventional banking industry. Zoghlami (2018) argues that both Islamic and conventional banks are both vulnerable to their overall financial and economic context. Kabir, Worthington, and Gupta (2015) added that Islamic banks display higher credit risk when using the Z-score and NPL ratio.

In Indonesia, the interest to discuss the topic of non-performing loan and non-performing financing is also increasing recently. From a conventional bank's perspective, Havidz and Amponsah (2020) shows that banks in Indonesia maintain a prudent management in managing its credit risk thus further explain why bank-specific variable have higher significant compare to macroeconomic variable resulting to bank have more resistance to macroeconomics changes. From an Islamic bank's perspective, Wiryono and Effendi (2018) the size of islamic banks is influencing positively and significantly the credit risk. Other variables tested were financing expansion, financing quality, GDP and inflation which have been proven to influence negatively and significantly the credit risk. Comparing islamic banks and conventional banks, Farika, Achsani, and Johan (2018) found that credit risk affected by Bank Indonesia Certificates and loan to deposit ratio has the biggest influence. For financing risk, Bank Indonesia Certificates Sharia and OER has the biggest contribution. Sukmana (2017) shows that economic performance (GDP as proxied by IPI) is important in determining the non-performing financing/loans. The relationship of Islamic financing to NPF is negative, which means that as Islamic financing increases, the NPF decreases.
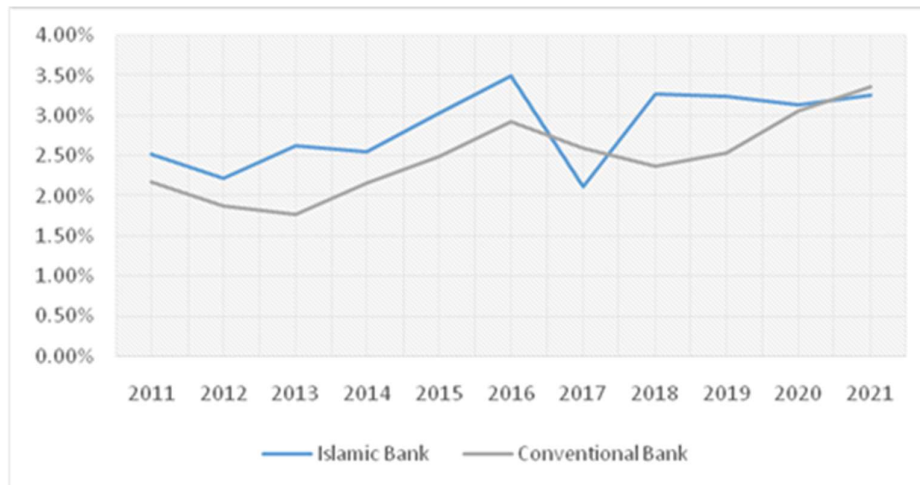
Source: (Indonesian Financial Service Authority, 2014-2021)
Figure 1. Non-Performing Loan and Non-Performing Financing in Indonesia 2011-2021

The line graph in Figure 1 compares the non-performing loan and non-performing financing in Indonesian dual banking industry in the period of 2011-2021. Overall, the trend of both non-performing loan and non-performing financing fluctuates with a similar pattern over the years. Both non-performing financing and non-performing loan increased between 2011 and 2021. Most of the time, Islamic bank's non-performing financing is higher than conventional banking's non-performing loan. It is recorded only in 2017 and 2021, non-performing financing is lower than non-performing loan. Based on the purpose, the credit risk increases in the consumption and investment credit. According to the sector, almost every single economic sector is affected by the pandemic. The highest NPL ratio increase is recorded in the mining sector while the highest increase in the nominal NPL is recorded in processing sector followed by real estate sector. Based on the location, credit risk with the highest increase is recorded in the Java Island especially the capital city, DKI Jakarta.

The opinion related to non-performing financing and non-performing loan showed a similar result. According to Kabir, Worthington, and Gupta (2015), both banking systems suffered almost equally evidenced by the difficulty of the author to conclude whether Islamic banks have higher or lower credit risk than conventional banks. According to Ferhi (2017), the conventional model has a higher credit risk than the Islamic one. However, the larger an Islamic bank is, the higher its credit risk will be to get closer to that of conventional banks. Literature review has identified multiple sources that causes non-performing loan and non-performing financing. The causes can be categorized in several group such as macroeconomic variables like political cause and economic cause; loan beneficiaries cause such as weak management of the debtor companies; customer's activity such as fraud; and the bank's fault such as a false assessment of customer's situation.

One of the causes that is getting more attention by researchers after the financial crisis is good corporate governance. In Asia, Abid, Gull, Hussain, and Nguyen (2021) evidenced that show the role of risk governance mechanisms in curbing excessive risk-taking and improving risk management effectiveness and performance of the bank. In the UK, Lu and Boateng (2018)

finds that board characteristics play important roles on credit risk. In Iran, Akbarian, Rezaei, Rostamy, and Abdi (2019) finds that there is a significant negative relationship between corporate governance quality and the credit risk where effective corporate governance will reduce information asymmetry, increases the clarity and stakeholder confidence, and finally reduces banks' credit risk. For Islamic banking literature, Aslam, Ur-Rehman, and Iqbal (2021), shows that asset quality of Islamic banks is positively and significantly sensitive to an increase in board independence, Shariah board, and audit committee effectiveness. For Indonesian literature, Permatasari (2020) filled the Conventional banking literature while Dewany (2015) and Darwanto and Chariri (2019) filled the Islamic banking literature. However, the literatures highlighted financial performance which consists of several variables such as Return on Asset and Capital Adequacy Ratio in the analysis. This study focuses on the non-performing financing only as the dependent variable. This paper aims to examine the relationship between corporate governance and non-performing financing of Indonesian Islamic banks.

The contribution of this study to the literature is done through several ways. Firstly, this study adds to the existing literature of corporate governance on non-performing financing in Indonesian Islamic banks. This study focusses on non-performing financing as the dependent variable while other studies focus on financial performance and other risk such as operational risk and liquidity risk beside credit risk in the same study. Secondly, this study uses the dynamic panel approach, which accounts for the heteroscedasticity and endogeneity problem. Thirdly, the quality of good corporate governance implementation is measured by composite value of good corporate governance self-assessment index. Islamic Bank in Indonesia is required to conduct a comprehensive self-assessment by the regulator and supervisory authority and there are not many studies that use the index. The result of this study proves that the self-assessment good corporate governance index obligated to Islamic banks is a properness of the index. Thus, the finding of this study helps the regulator and supervisory authority to review the policy, they made. Moreover, it enhances the confidence of the shareholders and stakeholders in the effectiveness of IBs governance, which will reap long-term benefits.

This paper consists of six sections. Section 1 discusses the introduction, in which the background and aim of the study is outlined. Section 2 covers the methodology while Section 3 covers the literature review. Section 4 and section 5 is about the discussion and findings respectively. Last but not least, Section 6 conclude the study with the recommendation and suggests directions for future research.

Data and Methodology
Table 1. Factors of Influencing Non-Performing Financing

No	Variables		References	Source
1	Good Corporate Governance Self-Assessment	GCG - SA	Tarchouna, Jarraya, and Bouri (2017), Bourakba and Zerargui (2015)	Annual Report of the Bank
2	Bank Size	BS	Jiménez and Saurina (2006), Huan, Ramasamy,	Annual Report of the Bank

			Yen, and Pillay (2020), Jegadeeshwaran and Basuvaraj (2019)	
3	Return on Asset	ROA	Abusharbeh (2020), Alihodzic and Eksi (2018)	Annual Report of the Bank
4	Cost to Income Ratio	CIR	Jegadeeshwaran and Basuvaraj (2019)	Annual Report of the Bank
5	Interest Rate	IR	Jiménez and Saurina (2006), Messai and Jouini (2013)	World Bank
6	Unemployment Rate	UR	Us (2020), Klein (2013)	World Bank

Following prior studies on panel data like Tarchouna, Jarraya, & Bouri (2017), and in order to take into account the time persistence of non-performing financing, the econometric model, used in our study, is the GMM dynamic panel data model. The equation could be written as follow:

$$NPF_{it} = \alpha NPF_{it-1} + \beta_1 GCG - SA_{it} + \beta_2 GCG - SA_{t-1} + \beta_3 BS_{it} + \beta_4 ROA_{it} + \beta_5 CIR_{it} + \beta_6 IR_{it} + \beta_7 UR_{it}$$

$+\eta_i + \alpha_{it}$ .... (2.1.)

Where NPF refers to non-performing financing, SA refers to self-assessment corporate index, UR refers to unemployment rate, IR refers to interest rate, BS refers to Bank Size which is represented by the asset of the bank, ROA refers to return on asset and CIR refers to cost to income ratio. For the long-run relationship between the coefficient of independent variables and the dependent variable, the equation could be written as follow:

$$NPF_{it} = \alpha NPF_{it-1} + \overline{\beta}_1 GCG - SA_{it} + \overline{\beta}_2 GCG - SA_{t-1} + \overline{\beta}_3 BS_{it} + \overline{\beta}_4 ROA_{it} + \overline{\beta}_5 CIR_{it} + \overline{\beta}_6 IR_{it} + \overline{\beta}_7 UR_{it}$$

$+\eta_i + \alpha_{it}$ .... (2.2.)

$$\overline{\beta_1} = N^{-1} \sum_{i=1}^{N} \beta_1, ..., \overline{\beta_n} = N^{-1} \sum_{i=1}^{N} \beta_n$$ .... (2.3)

The data is taken from various sources such as the annual report of the related banks, Otoritas Jasa Keuangan, Bank Indonesia, World Bank and other sources. The data span starts from January 2011-December 2020. This time period are dictated by the availiability of the data. The merger of three islamic banks in the beginning of 2021 caused the inability to update the data due to different time series. The sample of the data used in this study is Islamic banks in Indonesia excluding the rural banks. However, some obstacles such as data availiability might occur.

The governance hypothesis development is following the steps of Tarchouna, Jarraya, & Bouri (2017). The specific factor that is analyzed in this sub-chapter is corporate governance. Tarchouna, Jarraya, & Bouri (2017) stated that the impact of corporate governance on non-performing loan differs between small banks, medium banks, and large banks. The relationship between corporate governance and small banks are negative but it is the other way when it

comes to the relationship between corporate governance and medium, large, and the full sample of banks. This suggests that small banks are able to select projects which are consistent with their objectives and avoid the risky ones that damage their potential performance and loan quality. Medium and large banks seem to be poorly-governed given that their corporate governance index is positively related to non-performing loans. Bourakba and Zerargui (2015) stated that there is a negative relationship between non-performing loans ratio and the composition of the board of directors, the size of the board of directors, board committees, concentration of ownership, as well as the size of the Sharia supervisory board. It is expected that the relationship between corporate governance and non-performing financing can be either positive or negative.

Therefore, based on the previous discussion, the following hypothesis are formulated:
(H_1) There is either a negative or a positive relationship between good corporate governance and non-performing financing
(H_2) There is either a negative or a positive relationship between Size and non-performing financing
(H_3) There is a negative relationship between Profitability and non-performing financing
(H_4) There is a negative relationship between Efficiency and non-performing financing
(H_5) There is a positive relationship between Interest Rate and non-performing financing
(H_6) There is a positive relationship between Unemployment Rate and non-performing financing

Review of Related Literature
Corporate governance literatures can be divided into two; corporate governance in conventional banks and corporate governance in Islamic banks. Some studies which discussed corporate governance in conventional banks are done by Permatasari (2020), Lee, Chen, Chang, and Chen (2018) and Khatun and Ghosh (2019). Some other studies which discussed corporate governance and its effect on Islamic banks are done by Aslam, Ur-Rehman, Iqbal (2021), Dewany (2015), and Darwanto and Chariri (2019).
From a conventional bank's perspective, Permatasari (2020) examine the relationship between corporate governance and risk management of Indonesian banks. The results showed that good corporate governance implementation does influence risk in Indonesian banks. Differences are spotted in credit risk, liquidity risk and operational risk in banks with different governance ratings, but not at market risk. Lee, Chen, Chang, and Chen (2018) also examine the relationships among a firm's corporate governance and non-performing loans ratio adding economic factors in the analysis of Taiwan's bank industry. The results show that share collateralization by directors of firms affect bank's non-performing significantly in a positive relationship. The related party transaction of firm and bank's non-performing loans also has a significant positive relationship which indicate that bad corporate governance is an important warning for banks.
Khatun and Ghosh (2019) inspect the relationship between corporate governance determinants and level of non-performing loan of Bangladesh listed commercial banks. Findings told that the relationship between commercial banks' corporate governance and non-performing loans is positively significant. Banks with good quality management may ensure the quality of loan

and reduce the level of non-performing loans. Maria, Mehmood, and Kashif (2016) investigate the nature of relationship between board composition in shape of Board Size and number of Non-Executive Directors with Non-Performing Loans of the Pakistani banks. The study finds that board composition in shape of board size and number of non-executive directors performs a significant role for bringing down the non-performing loans of the bank. Larger board size devise balanced and credit risk averted policies. While greater number of non-executive directors increase the non-performing loans s' of the bank.

Adegboye, Ojeka, and Adegboye (2020) highlights the effect of corporate governance structure and bank externalities on non-performing loans in Nigeria. From the empirical analysis, corporate governance structure of banks in Nigeria has a negative and significant influence on non-performing loans in Nigerian banks. Sound corporate governance structure enhances the loan quality and bank stability. Stringent policy imposed by the bank regulators has a negative impact on non-performing loans. Balagobei (2019) examine the influence of corporate governance on non-performing loans of listed banks in Sri Lanka. The findings show that board activities have a significant influence on non-performing loans of listed banks in Sri Lanka whereas other corporate governance variables such as board size, board independence and CEO duality have no significant influence on non-performing loans.

Abid, Gull, Hussain, and Nguyen (2021) investigate how risk committee and Chief Risk Officer's characteristics affect the risk-taking behavior of Asian commercial banks. Evidence of a negative and significant link between the risk governance mechanisms and risk-taking are found. However, the link is more pronounced for privately-owned banks than for state-owned banks. Moreover, risk governance mechanisms positively influence the performance of privately-owned banks but have no impact on performance of state-owned banks. Djebali and Zaghdoudi (2019) studies the effect of banking governance on credit risk and tests the relationship between bank governance mechanisms and liquidity risk. Credit risk is directly related to bank governance mechanisms.

Lu and Boateng (2018) examines the effects of board composition and monitoring on the credit risk in the UK banking sector. CEO duality, pay and board independence affect credit risk positively significant in UK banks. Board size and women on board affect credit risk negatively significant. Nzioki (2016) explore the corporate governance effect on credit risk management among commercial banks in Kenya. The extent and direction of a company's credit risk management is subject to the predictors in question. Large corporate practices, policies and rights of shareholders enhance credit risk management and such factors, when exploited, firm value is enhanced.

Akbarian, Rezaei, Rostamy, and Abdi (2019) investigate the impacts of corporate governance on credit risk in the Iranian banking industry. The result revealed that there is a significant negative relationship between corporate governance quality and the credit risk. Effective corporate governance will reduce information asymmetry, increases the clarity and stakeholder confidence, and finally reduces banks' credit risk. Dao and Pham (2015) explore the relationship between default probability of banks due to their credit risks and the corporate governance structures of these banks from the perspective of creditors. Trung (2021) examines whether the agency problem regarding credit risk is a useful corporate governance mechanism

for controlling credit risk. It turns out that the agency problem is a statistically significant variable in the model.

From the Islamic banking perspective, Aslam, Ur-Rehman, Iqbal (2021) investigates the impact of corporate governance on asset quality of Islamic banks from 29 countries. Asset quality of Islamic banks is positively significant to an increase in board independence, Shariah board, and audit committee effectiveness. The study finds that female participation in management as CEOs seems to detract from good performance and more board meetings can be harnessed to improve banks' asset quality. Dewany (2015) researched the effect of the quality of Good Corporate Governance implementation on the rate of return, the risk of financing, capitals. The result shows that the quality of Good Corporate Governance implementation on Islamic banks in Indonesia is good.

Bourakba and Zerargui (2015) seeks to determine the relationship between the variables, corporate governance and credit risk in Islamic banks. There is a negative relationship between non-performing loans ratio and the composition of the board of directors, the size of the board of directors, board committees, concentration of ownership, as well as the size of the Sharia supervisory board. The only positive relationship appear is between non-performing loans ratio and the size of the bank.

A gap is a missing link that leaves room for for more investigations. Relating to the study, a research gap is the missing piece in research literatures that has not yet been explored or is under explored. Identification of gap allow the audiences to evaluate the current state of scientific knowledge in Indonesian Islamic banks. For the non-performing finanicng topic, Wiryono and Effendi (2018) has done comes from Islamic banking perspective with panel data method, but not focusing on non-performing financing. Darwanto and Chariri (2019) also has done a study with panel data method, but not using the self-assessment good corporate governance index. Dewany (2015) used the self-assessment good corporate governance index but not the panel data method. This study fills the gap that is explained before.

Discussion and Analysis

The objective of this section is to give an overview analysis for the study in terms of scope of the data and variables. Table 2 summarizes the descriptive statistics of the variables, illustrated by its mean, median, minimum, maximum, and standard deviation values. The descriptive include sample size mean, standard deviation, minimum and maximum values for panel data on 8 Indonesian Islamic banks from 2011 to 2020. Thus, the panel data model consists of 160 observations.

Table 2. Descriptive Statistics

	Mean	Standard Deviation	Minimum	Maximum
NPF	3.23	2.16	0.1	12.52
GCG-SA	1.83	0.48	1.15	3
BS	9.43	1.37	6.46	11.50
ROA	0.83	1.76	-10.77	6.93

CIR	93.28	18	50.76	217.4
IR	4.43	1.61	1.92	6.41
UR	4.3	0.41	3.62	5.15

Non-Performing Financing as the dependent variable has a mean of 3.23 with a standard deviation of 2.16. The maximum value of NPF is 12.52 while the minimum value is 0.1. Unemployment rate as the first independent variable has a mean of 4.3 with a standard deviation of 0.41. The maximum value of unemployment rate is 5.15 while the minimum value is 3.62. Interest rate as the second independent variable has a mean of 4.42 with a standard deviation of 1.6. The maximum value of interest rate is 6.41 while the minimum value is 1.92. Bank size represented by logarithm asset of the bank has a mean of 9.43 with a standard deviation of 1.36. The maximum value of logarithm asset of the bank is 11.49 while the minimum value is 6.46. Profitability represented by return on asset has a mean of 0.83 with a standard deviation of 1.76. The maximum value of return on asset is 6.93 while the minimum value is -10.77. Cost to income ratio has a mean of 93.28 with a standard deviation of 18. The maximum value of cost to income ratio is 217.4 while the minimum value is 50.75. Self-assessment index as the main good corporate governance variable in this study has a mean of 1.83 with a standard deviation of 0.48. The maximum value of the self-assessment index is 3 while the minimum value is 1.15.
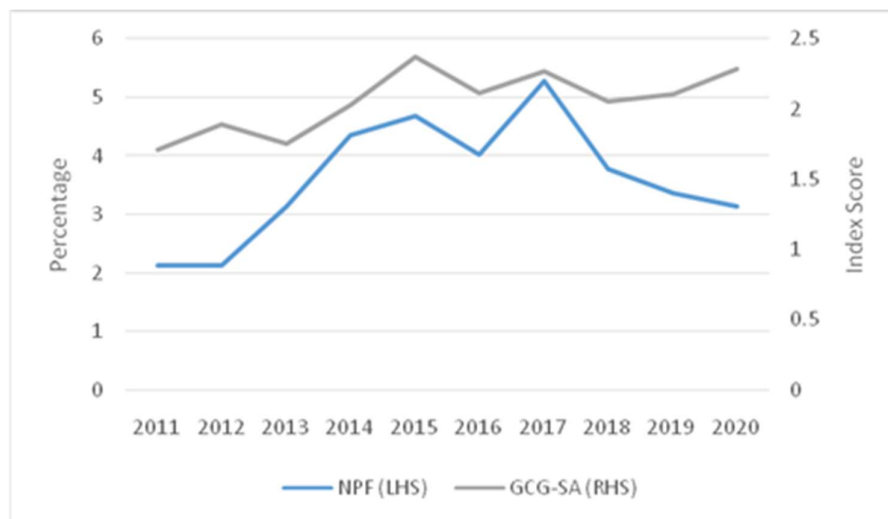

Figure 1. Non-Performing Financing and Self-Assessment Good Corporate Governance Index in Indonesian Islamic Banks

Figure 1 reflects the combination of non-performing financing and the self-assessment corporate governance index from selected Islamic banks in Indonesia in the period of 2011-2020. Overall, the trend of non-performing financing is increasing over the years with some fluctuation recorded. The highest percentage of NPF is recorded in 2017 while the lowest one is recorded in 2011. In 2013, the non-performing financing stood at 3% and rose steadily over the next two years to reach higher point more than 4% in 2015. In the following year, 2020,

the figure dipped slightly to above 3% after reaching the highest point at 5% in 2017. When it comes to self-assessment good corporate index, the important point that needs to be highlighted is that the smaller the number is, the better the good corporate governance is practiced. In line with the non-performing financing trend, the trend of GCG index is also increasing with a fluctuation. The lowest point of the GCC index is recorded in 2011 as well and the highest score is recorded in 2015 where the NPF is recorded as the second to highest percentage at the same year. The increasing trend of NPF in the 2011-2015 period and the decreasing trend in 2015-2018 period is followed by the same trend of GCG index.

Table 3. Correlation Matrix among independent variables

	IR	BS	ROA	CIR	GCG-SA
IR	1				
BS	0.20	1			
ROA	-0.09	-0.01	1		
CIR	0.03	-0.10	-0.90	1	
GCG-SA	0.16	0.07	-0.37	0.40	1

Table 3 shows the result for the correlation among the independent variables in this study. While correlations among variables are desirable, higher correlation coefficients indicate multicollinearity problems. The degree of collinearity regarded as a multicollinearity problem has set as strict as 0.7 (Tabachnick & Fidell, 2007) and as general as 0.8-0.9 (Gujarati & Porter, 2009). However, multicollinearity assumption is not an indicator of Gauss-Markov condition which makes the model not valid or not robust. Unlike autocorrelation and heteroskedasticity problem, multicollinearity problem only disturbs the result of the regression in terms of significance. Based on the correlation matrix, it is indicated that there is a multicollinearity problem specifically in the relationship between cost to income ratio and return on asset. It is evidenced by the value in the correlation matrix which can be categorized as high multicollinearity problem.

Table 4. Variance Inflation Factor

Variable	VIF	1/VIF
GCG-SA	1.23	0.81
BS	1.11	0.90
ROA	5.66	0.18
CIR	5.92	0.17
IR	1.08	0.93

The test of multicollinearity is extended to variance inflation factors (VIF) as presented in table 4. The VIF result shows value of less than 6 and higher that 0.15. These results contradict with the previous result indicating an absence of multicollinearity problem as the values are less than the VIF threshold of 10 and higher than the tolerance threshold of 0.10 (Gujarati & Porter,

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2009). Since the multicollinearity problem exist in the correlation matrix, one of the variables are taken out of the model which is the Return on Asset.

This section presents the relationship between good corporate governance and non-performing financing in Indonesian Islamic banks addressing the third research objective. Following the steps of Tarchouna, Jarraya and Bouri (2017), this study adopts dynamic panel model. The study focuses and reports on the Generalized Methods of Moment (GMM) results due to autocorrelation uses and the biasness of other method. Arrelano and Bover (1995) recommend using system GMM due to the reliability compared to other methods.

Table 5. Estimated Result Based on Static Panel Models

Variable	Pooled Least Square		Fixed Effect Model		Random Effect Model	
	(1)		(2)		(3)	
C	-10.46	***			-9.12	***
GCG-SA	1.04	***	0.76	***	0.81	***
LNASSET	0.38	***	0.40	***	0.38	*
CIR	0.08	***	0.07		0.07	***
IR	-0.06		0.05		-0.05	
UR	0.23		0.15		0.15	
R-Square	0.65		0.73		0.72	
Hausman Test					0.5413	

***,**,* stands for 1%, 5%, 10% significance level

Table 5 reports the GMM results with its specification test along with the result of Pooled Least Square, Fixed Effect Model and Random Effect Model for comparison purposes. Five relevant corporate governance variables which is taken based on the previous literature are used to establish the index. However, the result of regressing the index with non-performing financing did not show a robust model. As a replacement, self-assessment good corporate governance index is used to represent good corporate governance of Indonesian Islamic banks. This self-assessment good corporate governance practice is mandated by the Indonesian financial service authority for every Islamic bank to assess the application of their good corporate governance principles. There are three aspects that needs to be assessed in the governance structure according to OJK Circulating Letter No. 10/SEOJK.03/2014 which are the governance structure, governance process, and governance out. The robustness of the GMM method is evidenced by the significance of lag dependent variable used as an independent variable, confirmation of validity and unbiased from the Sargan test, P-value of AR2 and the coefficient of First Difference GMM lag dependent which is between Fixed Effect Model GMM lag dependent and Panel Ordinary Least Square GMM lag dependent. The coefficient of Self-Assessment GCG Index is also consistent in every model regressed either in the static panel methods or in the dynamic panel methods.

According to the test of the static panel data models which are Pooled Least Square, Fixed Effect Model and Random Effect Model, the result in Table 5 showed that Random Effect

Model method is chosen compared to the other static panel method. According to the Hausman test, Random Effect Model is better than Fixed Effect Model where the test reveals insignificant in the p-value. In the dynamic panel data method, which is the First-Difference Generalized Method of Moments and System Generalized Method of Moments, the test reveals that there is an estimated method that has the validity of the instrument as well as consistency and unbiased. The Systemic Generalized Method of Moments method established a valid estimation evidenced by the Sargan test which revealed that the P-value is not significant (with the conclusion to not reject the null hypothesis). The systemic Generalized Method of Moments is also consistent evidenced by the not significant P-value of AR2 (with the conclusion to not reject the null hypothesis). However, this method is bias since the coefficient of the independent variable lag is not in the range between the coefficient of independent lag in the Pooled Least Square method and the coefficient of independent lag in the Fixed Effect Model method.

The estimation of First Difference Generalized Method of Moments as the other dynamic panel data method is also valid, evidenced by the Sargan test which revealed that the P-value is not significant (with the conclusion to not reject the null hypothesis). In line with the Systemic Generalized Method of Moments, First Difference Generalized Method of Moments is also consistent evidenced by the not significant P-value of AR2 (with the conclusion to not reject the null hypothesis). The difference relies on the biasness of the method, where The Systemic Generalized Method of Moments Method is bias but not with the First Difference Generalized Method of Moments. The estimation of First Difference Generalized Method of Moments is called unbiased because the coefficient of independent lag variable is between the coefficient of independent lag in the Pooled Least Square Method and the coefficient of independent lag in the Fixed Effect Model method. The result confirms the dynamic nature of non-performing financing given that the coefficient of the lagged NPF is positive and statistically significant at 1% level. It is presented in Table 5 that the coefficient of self-assessment corporate governance index is statistically significant at 1% level with a positive sign. This is consistent with the theory, where the higher value of self-assessment index indicates a lower corporate governance practiced in the bank. Overall, 3 out of 5 independent variables affect non-performing financing as the dependent model significantly.

Table 6. Dynamic Panel Generalized Method of Moments Result

Variable	PLS Dynamic Panel		FEM Dynamic Panel		System Generalized Method of Moments		First-Difference Generalized Method of Moments	First-Difference Generalized Method of Moments	
							Long-Run	Short-Run	
					(1)		(2)	(3)	
NPF(-1)	0.41	***	0.21	***	0.11		1.49	0.22	***
GCG-SA	0.69	**	0.69	**	1.54	***	1.40	1.08	***
LNASSET	0.25	**	0.26		-0.88	*	-0.55	-0.43	
CIR	0.07	***	0.07	***	0.07	***	0.09	0.07	***

IR	-0.17	*	-0.15	-0.12	-0.17	-0.13
UR	0.49		0.50	0.23	0.35	0.27
R-Square						
Hausman Test						
M₁ Statistics (AR₁)				(p-value = 0.64)		(p-value = 0.19)
M₂ Statistics (AR₂)				(p-value = 0.65)		(p-value = 0.39)
Sargan Test				(p-value = 0.33)		(p-value = 1)

Table 6 reports the dynamic panel results with its specification test along with the result of System Generalized Method of Moments and First-Difference Generalized Method of Moments for comparison purposes. The dynamic of adjustment nature in the dynamic panel enables us to calculate the long-run coefficient. Short-run coefficient refers to the effect of the independent variables to the dependent variable in the same period while the long-run coefficient refers to the accumulation of the short-run coefficients. It can be seen that the long run coefficient of the independent variables is bigger than the short-run coefficient when it is above 0 and smaller than the short-run coefficient when it is below 0. The self-assessment index which is the main point in this study affects non-performing financing with a positive relationship wither in the short-run or the long-run. The non-performing financing will increase 1.08 % in the short run and 1.4% in the long run if the increases 1%. This is in line with the result found in the study of Tarchouna, Jarraya and Bouri (2017). The result for Good Corporate Governance Self-Assessment Index is robust because the result is in line with the theory where the proper implementation of the governance reduce non-performing financing and it is consistent in every model regressed.

The self-assessment of Good Corporate Governance implementation is mandated by Bank Indonesia with BI regulation no. 11/33/PBI/2009 about Implementation of Good Corporate Governance for Islamic Banks and Islamic Windows. The role of regulatory and supervisory authority then shifted to Otoritas Jasa Keuangan in 2013 which impacted the regulation as well. The new regulation is included in the OJK Circular Letter no.10/SEOJK.03/2014 about Islamic bank and Islamic window soundness rating. The self-assessment of the good corporate governance implementation is done twice a year. The GCG self-assessment comprises of three main aspects, which is the governance structure, governance process and governance outcome. The soundness of the bank is self -assessed with a risk-based approach focusing on the risk profile, good corporate governance implementation, earnings and capital. The lower self-assessment index is referred to the better good corporate governance implemented in the bank.

Conclusions and Recommendations

In this research, we provide an empirical study of the relation between Islamic bank corporate governance and non-performing financing over the 2011–2020 period. The self-assessment index as the good governance index which is the main point in this study affects non-performing financing with a positive relationship wither in the short-run or the long-run. The non-performing financing will increase 1.08 % in the short run and 1.4% in the long run if the increases 1%. This is in line with the result found in the study of Tarchouna, Jarraya and Bouri (2017). The consistent result is an indicator that the model is robust. The positive coefficient of self-assessment index reflects the good and strong corporate governance is associated with proper evaluation of financing. Islamic banks are able to filter projects which are beneficial for them and avoiding the risky project that might affect their performance.

Based on the findings, some suggestions are stipulated. Since corporate governance is proven to be significantly affecting non-performing financing, Islamic banks are encouraged to implement high quality corporate governance practices. Besides that, they also need to be aware of macroeconomic variables. Sharia supervisory board is one of the unique elements that is owned by Islamic banks. Islamic banks need to appoint the right person as their sharia supervisory board member that are able to provide solutions and feedback for problems faced by the bank that is in line with the sharia. Self-assessment mechanism to assess the GCG practice tends to subjective. It could generate an overestimated result or an underestimated result. OJK as the regulatory and supervisory authority for Islamic banks in Indonesia could improve the corporate governance practice by harmonizing relevant standards issued by standard setting bodies like the IFSB and AAOIFI. For the future research, our study can be extended by considering conventional banks inside the model. Including conventional banks in the model leads to a higher number of observations. With a higher number of banks observed, a deeper analysis could be done such as comparative analysis between Islamic and Conventional bank, between small and big banks and other approach. The other limitation of this study is the analysis can't be updated to 2021 due to the merger of 3 Islamic banks. The merger interferes the time series of Islamic banks.

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