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Assessing Financial Risk and Regional Macreoconomic Influence to Islamic Rural Bank Performance

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Abstract: Islamic Rural Bank must deal with internal and external risks which will affect to the performance of the bank. This paper aims to assess the internal and external risks that influence to the bank performance. By adopting panel data analysis, the paper analyzes 21 biggest Islamic rural bank which as a representative of 21 provinces around Indonesia during 2013-2017 which result 420 observation period. Furthermore, Return on Asset (ROA) are utilized as dependent variable which represents Islamic rural bank's performance. As independent variables, Non-Performing Financing (NPF) and Capital Adequacy Ratio (CAR) are applied as internal risk in Islamic rural bank. To analyze external risk, regional macroeconomic factors, Regional Economic Growth (REG) and Regional Inflation (RInf) are employed then Total Asset of Islamic rural bank (Size) is also used as complementary variable. Based on the analysis, this study finds that SRB has robust risk management through internal and external risk. However, REG has significant ROA that explains the performance of Islamic rural bank will depend on regional economic growth in each province.

Keywords: *Islamic rural bank, Performance, Internal Risk, External Risk*

Introduction

The current development of Islamic bank in Indonesia is gradually increasing. Based on data released by Otoritas Jasa Keuangan in 2018, Indonesia has 202 Islamic banks with an asset that is equal to IDR 444.42 trillion. This number represent more than 5% market share in Indonesian banking industry. From the total number of Islamic bank, 168 are Islamic rural bank which means that 83.17% of Islamic bank serves in microfinance level. According to Undang-Undang No.21 Tahun 2008 about Islamic bank, Islamic rural bank has the same function as commercial bank that will channel from surplus side to deficit side customers. However, the market segmentation of Islamic rural bank is different from its counterparty. The bank will focus on Small Medium Enterprises (SMEs) financing which also concerns not only to financial aspect but also social aspect of SMEs.

As one of Islamic bank that serves in the microfinance level, Islamic rural bank will also face the same challenge to address risk exposure either internal, the risk which is a part of internal financial condition of Islamic rural bank, or external risk which represent macroeconomic factors such as economic growth, interest rate and inflation growth. Certainly, both risks will have a direct and indirect impact to the banking performance (Almazari, 2014). From the internal risk factors, the risks that often face by Islamic rural bank are credit risk, commonly represented by Non-Performing Loan (NPL), and bankruptcy risk. The financial performance of Islamic rural bank will influence the profitability of financial performance

(Said, 2015). From external risk factors, economic growth, interest rate and inflation will become endogenous variable to affect Islamic rural bank performance.

Some of the previous studies such as Hosen (2013) reveals that NPF will directly affect to the banking performance. NPF exhibits a risk owned by the bank due to a failure of the customer to return the money in an agreed number and time. To identify the aspect that influence Islamic bank performance, Masood and Ashraf (2012) conduct a study in 15 Islamic banks across countries. By adopting panel data analysis, they find that Return on Asset (ROA) and Return on Equity (ROE) have been influenced by NPF. Credit risk is also one of the key determinant for Islamic and Non-Islamic bank in OIC countries (Louhichi and Boujelbene, 2016). Furthermore, NPF as a proxy of credit risk will be from financing side of Islamic rural bank which may use several Islamic contracts consisting of murabahah, mudarabah, musharakah, ijarah and others.

Fakhrunnas, Dari and Mifrahi (2018) claim that bankruptcy risk will happen to Islamic bank when the bank is not able to fulfill its short-term as well as long-term financial obligation. The bankruptcy risk will explain the financial condition of the bank especially in terms of its financial liquidity. The higher of the bankruptcy risk, the more vulnerable of the bank through financial dynamic condition. Banking stability is also important to measure the financial condition of Islamic bank in Indonesia (Norzitah, Al-Habshi and Abduh, 2016). This statement also confirms that Islamic bank must take bankruptcy risk into account to maintain financial performance.

In terms of macroeconomic factors, Lin, Farhani and Koo (2016) find that inflation will have negative and significant influence to bank's performance. Lin et.al (2016) also stress that Islamic bank is more vulnerable during financial crisis due to its incapability to address financial risk including macroeconomic risk. Different from Lin et.al (2016), Al Waesabi and Hamid (2012), by using panel data analysis, inflation has positive impact to Islamic bank performance. It means that if the inflation is higher, the Islamic bank performance will be high. Furthermore, Gross Domestic Product as a proxy of economic condition has negative and significant effect to Islamic bank performance. This finding indicates that the performance of Islamic bank has contra-cyclical risk to economic condition. The negative effect of GDP and GDP Growth are also found by several researchers such as Rashid and Jabeen (2016), Trad, Trabelsi and Goux (2017) but Cupian (2016) finds a different result where GDP has positive and significant effect to Islamic bank performance. Moreover, the previous studies about the size effect to Islamic bank performance indicate that bank size has positive effect to Islamic bank performance (Rashid and Jabeen, 2016 ; Trad, Trabelsi and Goux, 2017; Mohammad, Hasbullah, Razali, 2015).

According to the prior studies, this paper aims to assessing internal and external risk towards Islamic rural bank performance. This objective will complete for the previous research whereby current research of Islamic bank mostly only concern to commercial bank as the research object but only few research that focus on Islamic rural bank. Thus paper consist of several part, after the introduction, method will be exhibited in the second part. The third part will exhibit finding and discussion then it will be ended by conclusion and policy recommendation.

Research Method

To measure the performance of Islamic rural bank in Indonesia, this study will apply purposive sampling method by adopting some criteria. Firstly, the sample used is one of the biggest Islamic rural bank in each province as a representative of the sample. This requirement is determined due to the capability of the bank to have a good economic of scale and the big bank is assumed to have a better efficiency in its performance than the small one (Johnes, Izzeldin, Pappas, 2013) Secondly, this research utilizes balanced panel data from first quarter in 2013 to fourth quarter in 2017.

Table 1.
Variable Definitions

Variable	Measurement
Return on Asset (ROA)	The amount of the Islamic rural bank return divided by the amount of the asset and it is multiplied by 100% in quarterly basis
Non Performing Financing (NPF)	The amount of non-performing financing divided by the total financing and it is multiplied by 100% in quarterly basis
Capital Adequacy Ratio (CAR)	The amount of primary capital divided by Islamic rural bank total assets and it is multiplied by 100% in quarterly basis
Regional Inflation (RInf)	The percentage of inflation rate in each selected province in quarterly basis in quarterly basis
Regional Economic Growth (RGE)	The percentage of economic growth rate in each selected province in quarterly basis
Total Assets (Ln_Size)	The log of Islamic rural bank total asset in quarterly basis

This paper applies an estimation model of Random Effect Model (REM) by performing Generalize Least Square (GLS) method which will be able to reflect panel data model to have appropriate result (Mollah and Zaman, 2015). Pathan (2015) also emphasizes that GLS can address cross-sectional correlation and heteroskedasticity in panel data. Aterious and Hall (2011) explain that the model of GLS is as a follow;

$$Y_{it} = (a_i + v_1) + \beta_1 X_{1it} + \beta_2 X_{2it} + \cdots + \beta_K X_{Kit} + \mathrm{u}_{it}$$

where,

$$a_1 = a + v_1$$

is a random effect that does not treat dummy variable to be constant as fixed effect model but it moves randomly. According to that concept, the model of this research is as a follow;

$$ROA_{it} = \beta_o + \beta_1 NPF_{it} + \beta_2 CAR_{it} + \beta_4 Inf_{it} + \beta_5 EG_{it} + \beta_2 Lnsize_{it} + \varepsilon_{it}$$

Where :

ROA $_{it}$ = Return on Asset of Islamic rural bank i in the quarter t
NPF $_{it}$ = Non Performing Financing of Islamic rural bank i in the quarter t
CAR $_{it}$ =Capital Adequacy Ratio of Islamic rural bank i in the quarter t
RInf $_{it}$ = Regional Inflation of province i in the quarter t
REG $_{it}$ = Regional Economic Growth of province i in the quarter t
Ln_size = Log Total Asset of Islamic rural bank i in the quarter t
ε_{it} = Error-term

Result and Dicsussion

Description Analysis

Table 2 shows the data description for ROA, Ins, NPF, RInf, REG and Size. In terms of ROA, the highest return on asset attained by Islamic rural bank in Indonesia during 2013-2017 period was 48.92%. It meant that the bank could generate almost a half of return compared to the amount of the asset. However, the highest loss was -85.16% which represented that Islamic rural bank might be in the worst circumstance which result more than 85% loss compared to the asset. From the independent variables side, representing internal risk, insolvency risk of Islamic bank averagely was 27.68%. It exhibited that Islamic rural bank averagely had almost one-thirds of total asset from primary capital of Islamic rural bank. In addition, highest NPF of Islamic

rural bank was 74.65% and the lowest was 0.08%. The highest score of NPF represented a bad financing management performed by Islamic rural bank due to certain factors.

Table 2.
Data Description

Variable	Mean	Median	Maximum	Minimum
ROA	1.26%	1.58%	48.92%	-85.16%
Ins	27.68%	19.19%	94.95%	2.13%
NPF	13.56%	8.52%	74.65%	0.08%
RInf	4.72%	4.61%	11.58%	-0.29%
REC	5.52%	5.41%	26.12%	0.18%
Size	IDR 90,931,709	IDR 30,769,035	IDR 674,737,108	IDR 924,234

Regarding to external risk factors, regional inflation in several provinces in Indonesia was averagely 4.75%. That inflation was not high even though two digit inflations, which was 11.58%, occured in certain province in Indonesia. In some province, the deflation was existed in which -0.29% is as the lowest rate of inflation. Moreover, regional economic growth in Indonesian provinces was averagely 5.52% and the highest then the lowest rate was 26.12% and 0.18% respectively. The high rate of economic growth indicated a good economic condition to perform business activity including for Islamic rural bank market. Lastly, the bank size of Islamic rural bank appointed that the highest asset reaches IDR 674,737,108, 000 where the lowest asset of Islamic rural bank was below IDR 1 billion.

Correlation Analysis

Table 3.
Correlation Analysis

Variable	ROA	Ins	NPF	GInf	GEC	Ln_Size
ROA	1.000000					
Ins	0.078875	1.000000				
NPF	-0.205720	-0.026257	1.000000			
GInf	-0.071975	-0.125195	-0.229937	1.000000		
GEC	0.197553	0.199722	-0.040987	-0.021095	1.000000	
Ln_Size	0.058733	-0.255176	-0.395288	0.140377	-0.083034	1.000000

Tabel 3 shows the correlation result for each variable to another variable. Generally, there is no correlation score that exceeds 0.8 which means that the issue of autocorrelation is not exist. In terms of correlation between variable, ROA as dependent variable has positive correlation to Ins and negative correlation to NPF. The correlation scores are 0.0788 and -0.2057 respectively. This result represents that if insolvency risk and NPF increase 1%, ROA will increase 0.0788% due to a rise in insolvency risk then decrease -0.2057% because of a fall of NPF. The high rate of NPF will lessen Islamic rural bank return and the high percentage of insolvency risk will add the number of Islamic rural bank return. Moreover, ROA also has negative correlation to GInf, the score is -0.0719 and positively correlation to GEC. This condition explains that an upward trend in inflation will reduce the return of Islamic rural bank. On the other hands, the positive trend of regional economic growth will give more return to Islamic rural bank. For complementary variable which is Ln_Size, ROA has positive correlation which the value is 0.0587. It implies that the bigger Islamic rural bank will gave more return than the small one.

Panel Data Analysis

Before determining the panel data analysis method, several preliminary test must be conducted such as pooled least square, fixed effect, chow test and hausman test (Asteriou and Hall, 2011). After conducting the above-mentioned tests, in the last test, which is hausman test, will compare the best estimation whether adopting fixed effect model of random effect model, the result portrays that p-value is more than 0.05. As hypothesize in hausman test, when the p-value is more than 0.05, random effect model must be selected as the best model.

Table 3. portrays the panel data analysis based on random effect model by adopting GLS. From the table, it can be seen that the analyzes are separated into several parts consisting of all sample, small size of Islamic rural bank, medium size of Islamic rural bank and big size of Islamic rural bank. From all sample side, ROA shows negative and significant relationship to NPL at 1% level of significance but it does not have significant relationship to Ins. This result indicates that higher number of NPF will reduce the return of Islamic rural bank. This result is supported by Hosen (2013), Masood and Ashraf (2012), and Louhichi and Boujelbene, (2016).

In addition, GInf has negative effect to ROA but not significant denoting that Islamic rural bank is predicted to have a good risk management towards regional inflation. Meanwhile, REG has positive and significant relationship to ROA in which the bank has pro-cyclical risk and performance condition to regional economic growth. (Rashid and Jabeen, 2016 ; Trad, Trabelsi and Goux, 2017; Mohammad, Hasbullah, Razali, 2015). An increase of 1% regional economic growth will generate 0.499% of additional return to Islamic rural bank. The relationship is also against to different finding in the previous result in which is stated that Islamic bank has contra-cyclical relationship to economic growth as found by Jabeen (2016), and Trad, Trabelsi and Goux (2017).

Table 3.
Panel Data Analysis

Variables	All Sample	Small Size	Medium Size	Big Size
Ins	0.034	-0.047	0.118	0.046
	(1.497)	(-0.750)	(6.245)***	(3.894)***
NPF	-0.197	-0.291	-0.068	-0.087
	(-5.960)***	(-3.582)***	(-2.099)**	(-4.945)***
GInf	-0.250	-0.760	-0.064	0.003
	(-1.571)	(-1.329)	(-0.535)	(-0.045)
GEC	0.499	1.691	0.054	-0.189
	(2.7016)***	(2.384)***	(0.486)	(-1.080)
Ln_Size	-0.291	-3.351	0.593	0.245
	(-0.849)	(-3.179)***	(0.731)	(0.773)
C	6.449	51.123	-10.03	-1.099
	(1.0124)	(2.832)***	(-0.714)	(-0.169)
Pooled Observation	420	105	210	105
Adjusted R Square	0.1002	0.1772	0.1783	0.3638

Notes: All tests utilize generalize least square tests which have null hypothesis as non-significant in which ***, ** and* denote as significant at 1% level, significant at 5% level and significant at 10% level

Regarding to the size effect, ROA of medium and big size Islamic rural banks are influenced significantly by Ins at 1% level which means that the bank having more capability to fulfill its liability will have more return to asset. This evidences show that the bank has robust risk-management due to less vulnerable to bankruptcy risk. Having less bankruptcy risk will create a sound financial condition for Islamic banks and it makes the bank able to manage the risk (Fakhrunnas, et.al, 2018). However, it does not happen in the small size Islamic rural bank.

NPF appoints to have significant effect to ROA in all sizes of Islamic rural bank. This finding is consistent to the effect of NPF when all sample are used that is above-mentioned. A direct and significant effect of NPF to the banking performance is supported by previous research such as Hosen (2013) which explains NPF as profit reduction of banking performance. A higher NPF reflects incapability of Islamic bank to well-manage its financing activity (Hosen, 2013). Relating to regional macroeconomic factors, regional inflation has no effect to all size of Islamic rural banks. However, regional economic growth has positive significant to ROA of small size Islamic rural bank. This result aligns to Islamic rural banks result when all sample are put together. Cupian (2016) claims that economic condition's positive effect to Islamic bank will make the performance of the bank depends on economic condition.

Conclusion

Internal and external risks play a pivotal role to determine the Islamic rural bank performance that is associated to return on asset. According to GLS test, in general the performance of Islamic rural bank has been influenced by non performing financing and regional economic growth. Furthermore, it has different results while Islamic rural bank is separated in different size. For the medium and big size Islamic rural bank, the banks' performance are significantly affected by internal risk factors but not external risk factors. It means that higher Islamic rural bank will have better risk management through regional macroeconomic factors. For small size of Islamic rural bank, INF has negative and significant relationship to ROA and economic growth also influence to the banking performance. Based on the findings, this paper suggests that the policy maker or financial authority in Indonesia must issue different policy for different size of Islamic rural bank by look at in Islamic bank capability to manage the risk that will affect to banking performance.

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