

What Drives Non Performing Financing? Evidence From Islamic Rural Banks In Indonesia During Covid-19

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Abstract

This study aims to investigate the factors that influence non-performing financing (NPF) at Islamic rural banks (BPR) in Indonesia during the Covid-19 pandemic. The data used in this study was taken during the COVID-19 pandemic, namely in 2020. This study uses a data panel consisting of 128 Sharia BPRs throughout Indonesia. The analysis used is panel data analysis by choosing the best model between common effect (CE), fixed effect (FE), and random effect (FE). Data analysis was also carried out on: (1) large and small Sharia BPRs; (2) BPR located on the island of Java and outside the island of Java. The results found that the variable that had a strong influence on NPF during the covid-19 pandemic was economic growth as proxied by Gross Regional Domestic Product (GRDP). Bank size shows a negative and significant effect. FDR shows a positive and significant effect. Operational efficiency ratio (OER/BOPO) has a positive but not significant effect. Based on these results, it is necessary to mitigate financial problems, especially changes in macroeconomic conditions such as economic growth. This study also shows that there are differences in the variables that affect the size of small and large banks, as well as those in Java and those outside Java. This result can be a reference for Sharia BPR in mitigating financing risk.

Keywords: NPF, GRDP, Covid-19

A. INTRODUCTION

The Covid-19 pandemic does not only create a crisis in the health sector, but also affected to all fields including the economy and financial sector. Economic and financial crises can result in the failure of financial intermediary institutions such as banks (Cetorelli et al., 2012). The financial crisis has caused many global financial institutions to experience various problems. The main problem faced by financial institutions when a crisis occurs is the increase in non-performing loans or financing (Kuzucu et al., 2019).

Non-performing financing is a very crucial issue for both conventional and Islamic (Isaev & Masih, 2017). The crisis that increase the NPF is hitting mostly in profit-share based banks. Islamic banks have a higher level of non-performing financing compared to conventional banks (Kabir et al., 2015).

This study elaborated the dynamics of non-performing financing (NPF) in one type of Islamic bank in Indonesia, namely the Islamic Rural Bank (IRB) or Sharia BPR during the COVID-19 pandemic in Indonesia. The NPF at Sharia BPR in Indonesia during Covid-19 has increased since Covid-19 was first announced in early 2020. According to the Sharia Banking Statistics (SPS) released by the Financial Services Authority (OJK), there has been an increase in non-performing loans experienced by Sharia BPR in Indonesia over the past few years during the Covid-19 pandemic. The NPF of Sharia BPR in 2019 was 7.05% and increased in 2020 by 8.5% (OJK, 2020).

Sharia BPR is a bank that is very important to develop the rural sector economy. Where IRB focuses on Micro, Small and Medium Enterprises (SMEs). Recently, there are 36 thousand micro and small companies and 1000 large companies, while the total of IRBs in Indonesia is 165 banks. Therefore, the existence of IRB in Indonesia needs to be sustained with better financial performance (Widarjono & Rudatin, 2021).

The factors that affect the non-performing loans at the Bank have been commonly studied. Research on conventional banks as conducted by several scholars as follows: Tanasković & Jandrić, (2015); Kjosevski et al., (2019); Louzis et al., (2012); EL-Maude et al., (2017); Bardhan et al., (2019); dan Rizvi et al., (2019). In Islamic Banks as done by Kabir et al., (2015); Havidz & Setiawan, (2015) Wulandari et al., (2019); Rahmah & Armina, (2020) Widarjono et al., (2020); dan Widarjono & Rudatin, (2021). This study utilize the internal bank and macroeconomics as the factors that affect credit or non-performing financing.

The research above show the different results related to the factors that influence credit or non-performing financing both at conventional banks and Islamic banks. Therefore, this study will re-examine the factors that influence the non-performing financing, especially in Islamic Rural Banks (IRB) in Indonesia. Unlike the previous researchs above, the novelty of this study is the data involved is recently published data of IRB and Macroeconomics during the COVID-19 pandemic.

B. THEORITICAL

Asset and NPF Nexus

Assets can have a negative or positive effect (Widarjono et al., 2020; Widarjono & Rudatin, 2021). Diversification of financing and economies of scale in large banks reduce financing risk (Abedifar et al., 2013). Large banks tend to be able to handle their financing risk compared to small banks (Mirzaei et al., 2013). Bank size also affects financing risk in times of crisis (Kuzucu et al., 2019).

H1: Assets have a positive or negative effect on Non Performing Financing (NPF)

Financing to Deposit Ratio (FDR) and NPF Nexus

The financing to deposit ratio (FDR) is the ratio between the amount of funds disbursed in the form of financing and the amount of funds and utilized equity (Katili & Kadir, 2021). FDR has a positive effect on NPF (R.D.Kadir, 2019).

H2: FDR have a positive effect on Non Performing Financing (NPF)

Operational Efficiency Ratio (OER) and NPF Nexus

Operational efficiency ratio (OER) measures the level of efficiency in the use of funds in banks (Widarjono et al., 2020). A high BOPO ratio reduces bank efficiency, thus it does not bring profits to the bank (Firmansyah, 2014). OER has a positive effect on NPF (Girardone et al., 2004; Hughes & Mester, 1993).

H3: OER have a positive effect on Non Performing Financing (NPF)

Economic Growth and NPF Nexus

Economic growth, measured by GRDP, has an effect on financing risk during a crisis (Kuzucu et al., 2019). This study using the Provincial GRDP to value the economic growth. Widarjono et al. (2020) explains that there are

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differences in the factors that affect the NPF of Sharia BPRs on the island of Java and outside Java due to economic growth (GRDP). GRDP is assumed to have a negative effect on NPF (Badar & Javid, 2013; Firmansyah, 2014; Ghosh, 2015; Kuzucu et al., 2019; Prasanna et al., 2014).

H4: GRDP have a negative effect on Non Performing Financing (NPF)

Based on the theory above, the hypothesis in this study can be concluded as in Table I.

Tabel I. Variabel Description and Hypotesis

Variabel	Description	Hyphotesis
Dependent Variable		
<i>NPF</i>	Non performing financing to measure the risk of financing.	
Independent Variabel		
<i>Asset</i>	Total assets with natural logarithm (ln) to measure the size of the bank.	(+/-)
<i>FDR</i>	Financing to deposit ratio measures the amount of financing disbursed compared to equity (deposit).	(+)
<i>OER</i>	Operational efficiency ratio (OER) measures the level of bank efficiency in the use of funds.	(+)
<i>GRDP</i>	GRDP is the rate of regional economic growth.	(-)

C. METHODOLOGY

This research is a quantitative research. This study uses panel data, namely data consisting of time and cross section. This study uses internal BPR Syariah data and macroeconomic data. BPR Syariah internal data used consists of Financing to Deposit Ratio (FDR), bank size (bank size) which is proxied by total assets and operating income expenses (BOPO) or Operational efficiency ratio (OER)). The macroeconomic variable uses economic growth as a proxy for Gross Regional Domestic Product (GRDP).

This study uses data from 2020 when the COVID-19 pandemic occurred in Indonesia. The internal variable data for Sharia BPR is taken from the Financial

Services Authority (OJK) and macroeconomic data is taken from the Central Statistics Agency (BPS). The data is then processed using the panel data analysis method by choosing the best model by comparing the common effect (CE), fixed effect (FE), and random effect (FE) models. This research follows the model proposed by previous studies such as Rahmah & Armina (2020); Widarjono et al. (2020); Widarjono & Rudatin (2021); Wulandari et al. (2019). The panel data regression model in this study is as follows:

$$NPF_{it} = \beta_0 + \beta_1 Ln_Size_{it} + \beta_2 FDR_{it} + \beta_3 BOPO_{it} + \beta_4 Ln_PDRB_{it} + e_{it}$$

D. RESULTS AND DISCUSSION

Table 2. describes the descriptive statistics of all the variables involved. The average NPF at IRB during 2020 was 9.14% with standard deviation of 7.84%. The average NPF is still very high from the standard set by Bank Indonesia, which is 5%. This shows that during 2020 (during the covid-19 pandemic) the financing conditions of IRB were underperformed.

The average bank size (size) is Rp. 95.25 billion (ln. 9.14). The highest bank size is Rp. 1.31 trillion (ln. 21.01) and the lowest was Rp. 3.47 billion (ln. 15.06). The average FDR is 96.29% and the highest is 646.2%. The average BOPO is 83.91%. A high BOPO indicates the inefficiency of IRB.

Tabel 2. Descriptive Statistics

Variabel	Mean	Median	Minimum	Maximun	Std. Dev
NPF	9.14	6.58	0.000	48.61	7.84
Ln_Size	17.65	17.58	15.06	21.01	1.12
FDR	95.29	89.55	0.79	646.2	44.49
BOPO	83.91	86.06	-3092	704.4	146.29
Ln_PDRB	19	19.37	16.11	20.40	-0.52

Source: Data processed using Eviews 10 (2021)

Table 3. describes the correlation between the independent variables. It is obvious that all variables are below 0.7. These results indicate that there is no autocorrelation. Although this model can contain multicollinearity problems.

Tabel 3. Correlation Matrix

	NPF	Ln_Size	Ln_PDRB	FDR	BOPO
NPF	I				

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Ln_Size	-0.24	I			
Ln_PDRB	0.00	0.014	I		
FDR	0.01	0.04	-0.00	I	
BOPO	-0.11	-0.02	-0.02	0.05	I

Table 4. shows the results of panel data regression. Analysis of panel data regression model selection using common effect (CE), fixed effect (FE), and random effect (FE). The Chow Test is conducted to decide the model between CE and FE and the selection of the FE and RE model using Hausman-test. Based on the research of Widarjono et al. (2020) confirmed that there is a relationship between NPF and bank size. Based on the Chow test and Hausman-test, the FE model is selected for all variables.

Tabel 4. Static Panel Regression

Variable	All Banks: FE	Large: FE	Small: FE
Constant	3.459 (0.006)	2.384 (0.018)	2.603 (0.010)
Ln_Size	-5.062 (0.000)*	-1.147 (0.252)	-0.829 (0.408)
FDR	-1.253 (0.210)	2.348 (0.019)*	-0.807 (0.427)
OER	-2.743 (0.006)*	1.577 (0.116)	-1.897 (0.059)*
Ln_GRDP	-1.747 (0.081)	-1.940 (0.053)*	-2.076 (0.039)*
Chow-test (prob)	0.000	0.000	0.000
Hausman-test (prob)	0.000	0.008	0.020

Note: *are statistically significant at $\alpha = 5\%$

Bank size has a negative effect on all banks, although large and small banks are not significant. FDR valued negative but not significant effect on the data of all banks. On large bank data, FDR estimated a positive and significant effect. Meanwhile, in small banks FDR has a negative and insignificant effect. Large banks have a tendency to disburse financing so that the distribution of financing has an impact on increasing the NPF value. OER has a negative and significant

effect to the data of all banks and small banks. In large banks, OER has a positive but not significant effect.

GRDP shows consistent results and has a significant negative effect on large and small banks. GRDP has a significant impact on the reduction of NPF in Islamic banks. The impact of GRDP in reducing the level of NPF does not differentiate between the large and the small banks.

Tabel 5. Static Panel Regression

Variable	Java: FE	Outside Java: RE
Constant	3.474 (0.000)	2.780 (0.006)
Ln_Size	-4.484 (0.000)*	-2.333 (0.020)*
FDR	-2.938 (0.003)*	1.193 (0.234)
OER	-2.584 (0.010)*	1.136 (0.257)
Ln_GRDP	-2.027 (0.043)	-1.948 (0.053)*
Chow-test (prob)	0.000	0.000
Hausman-test (prob)	0.000	0.073

Note: *are statistically significant at $\alpha = 5\%$

Indonesia is a unique country separated into small to large islands. There are ten largest islands in Indonesia consisting of Papua, Kalimantan, Sumatra, Sulawesi, Java, Timor, Halmahera, Seram, Sumbawa and Flores Island. Apart from the ten largest islands there are many other. The problem that occurs with the number of islands or regions in Indonesia is the problem of equitable distribution of economic development. Economic development is more concentrated on the island of Java compared to other islands. Therefore, this study separates the data between Java and outside Java.

Table 5. indicated that bank size has a negative and significant effect on NPF in Java and outside Java. FDR has a negative and significant effect on NPF in Java. As for outside Java, FDR has a positive but not significant effect on NPF. The effect of OER on Java Island has a negative and significant effect. But it has a positive and insignificant effect on banks outside Java. GRDP specified the

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consistent results that there is a negative and significant influence of regional economic growth on NPF both in Java and outside Java.

Discussion

Non-performing financing (NPF) at Sharia BPR in this study is influenced by several variables. The bank size variable specified that there is a significant and negative effect on the data of all banks. Although there is no difference in the level of influence and significance on the NPF for large and small data banks. This shows that the high NPF at IRB is not completely influenced by the size of the bank during the COVID-19 pandemic.

The financing ratio (FDR) of Sharia BPR to the total equity owned by IRB shows a positive and significant influence on NPF in large banks. The high level of FDR at large banks increase the non-performing financing. This result is in accordance with research by R.D. Kadir (2019) dan Solihatun (1994) which shows a positive and significant effect of FDR on NPF. Large banks show a tendency to disburse their financing to riskier financing than small banks (Widarjono et al., 2020). It causes the amount of financing at large banks has an impact on increasing the number of NPF, especially during the covid-19 pandemic.

The increase in NPF at large banks during the COVID-19 pandemic is also influenced by the slow regional economic growth. The results of this study specified that economic growth (GRDP) both in Java and outside Java has a negative and significant effect. The stagnation of economic growth during the COVID-19 pandemic causes non-performing financing, especially to large banks whose financing contracts are more risky. These results support the research of Kuzucu et al. (2019) which explained that during a crisis the rate of economic growth will have an impact on increasing the NPF. The negative and significant effect of GRDP in this study is in line with research conducted by Badar & Javid (2013; Firmansyah (2014); Ghosh (2015); Kuzucu et al. (2019); Prasanna et al. (2014).

The outcomes of this study also confirm that OER has a negative and significant effect on the data of all banks and small banks. The positive yet insignificant effect presented by OER to NPF is occurred in large banks and banks located outside Java. This result is contrary to the research conducted by Girardone et al. (2004); Hughes & Mester (1993) which confirmed a positive effect of OER.

E. CONCLUSION

Concluded based on the above analysis, that in 2020 during the COVID-19 pandemic, the NPF level is strongly influenced by regional economic growth (GRDP). The variable of Bank size shows a negative and significant effect to NPF. The variable of FDR in large banks shows a positive and significant effect. Additionally, the variable of OER is confirmed to have positive yet insignificant effect to large banks.

The findings and conclusions in this research is expected to be the logical source of IRB in Indonesia to manage the NPF, especially during the COVID-19 pandemic. IRB should be able to overcome the negative impact of economic growth. This study has its limitations on the variables and data collected. The future research is expected to be able to use the data taken both before and after the COVID-19 pandemic. In addition, the data of macroeconomic and internal bank engaged in this study are limited. Therefore, could be accomplished in the further research.

REFERENCES

- Badar, M., & Javid, A. Y. (2013). Impact of Macroeconomic Forces on Nonperforming Loans: An Empirical Study of Commercial Banks in Pakistan. *WSEAS TRANSACTIONS on BUSINESS and ECONOMICS, 10*(1), 40–48.
- Bardhan, S., Sharma, R., & Mukherjee, V. (2019). *Threshold of Bank-specific Non-performing Assets: An Application in Indian Banking, 18*(1). <https://doi.org/10.1177/0972652719831546>
- Cetorelli, N., B.H., M., & L., M. (2012). The Evolution of Banks and Financial Tntermediation: Framing The Analysis. *Federal Reserve Bank of New York Economic Policy Review, 18*(2), 1–12.
- EL-Maude, J. G., Abdul-Rahman, A., & Ibrahim, M. (2017). *Determinants of Non - Performing Loans in Nigeria's Deposit, 5*(1), 74–88.
- Firmansyah, I. (2014). Determinant of Non Performing Loan: The Case of Islamic Bank In Indonesia. *Buletin Ekonomi Moneter Dan Perbankan, 17*(2).
- Ghosh, A. (2015). Banking-industry specific and regional economic determinants of Non-Performing Loans: Evidence from US States. *Journal of Financial Stability, 10*. <https://doi.org/10.1016/j.jfs.2015.08.004>
- Girardone, C., Molyneux, P., & Gardener, E. P. (2004). Analysing the Determinants of Bank Efficiency: The Case of Italian Banks. *Applied Economics, 36*(36), 215–227.
- Havidz, S. A. H., & Setiawan, C. (2015). Bank Efficiency and Non-Performing Financing (NPF) In The Indonesian Islamic Banks. *Asian Journal of Economics Modelling, 3*(3), 61–79. <https://doi.org/10.18488/journal.8/2015.3.3/8.3.61.79>
- Hughes, J. P., & Mester, L. J. (1993). A Quality and Risk-adjusted Cost Function for Banks: Evidence on the 'Too-Big-to-Fail' Doctrine. *Journal of Productivity Analysis, 4*, 293–315.
- Isaev, M., & Masih, M. (2017). Macroeconomic and bank-specific determinants of different categories of non-performing financing in Islamic banks: Evidence from Malaysia. *Munich Personal RePEc Archive, 79719*.
- Kabir, M. N., Worthington, A., & Gupta, R. (2015). Comparative Credit Risk in Islamic and Conventional Bank. *Pacific Basin Finance Journal, 34*, 327–353. <https://doi.org/https://doi.org/10.1016/j.pacfin.2015.06.001>
- Katili, C. Y., & Kadir, R. D. (2021). Profitability of Islamic Microfinance in

- Indonesia: Does the Type of Financing Matter? *Mutanaqishah : Journal of Islamic Banking*, 1(1), 31–38.
<https://doi.org/10.54045/mutanaqishah.v1i1.306>
- Keuangan, O. J. (2020). *Statistik Perbankan Syariah*.
- Kjosevski, J., Petkovski, M., & Naumovska, E. (2019). Bank-specific and macroeconomic determinants of non-performing loans in the Republic of Macedonia: Comparative analysis of enterprise and household NPLs. *Economic Research-Ekonomska Istraživanja*, 32(1), 1185–1203.
<https://doi.org/10.1080/1331677X.2019.1627894>
- Kuzucu, N., Kuzucu, S., & Kuzucu, N. (2019). What Drives Non-Performing Loans? Evidence from Emerging and Advanced Economies during Pre- and Post-Global Financial Crisis. *Emerging Markets Finance and Trade*, 00(00), 1–15.
<https://doi.org/10.1080/1540496X.2018.1547877>
- Louzis, D. P., Vouldis, A. T., & Metaxas, V. L. (2012). *Macroeconomic and bank-specific determinants of non-performing loans in Greece: A comparative study of mortgage, business and consumer loan portfolios*. 36, 1012–1027. <https://doi.org/10.1016/j.jbankfin.2011.10.012>
- Mirzaei, A., Moore, T., & Liu, G. (2013). Does market structure matter on banks' profitability and stability? Emerging vs. advanced economies. *Journal of Banking and Finance*, 37(8), 2920–2937.
- Prasanna, P. K., Thenmozhi, M., & Nimit, R. (2014). Determinants of non-performing advances in Indian banking system. *Banks and Bank Systems*, 9(2), 65–77.
- R.D.Kadir. (2019). Estimasi Janga Pendek dan Jangka Panjang Risiko Pembiayaan BPRS di Indonesia. *Jurnal Nisbah*, 05(02), 100–105.
<https://ojs.unida.ac.id/JN/article/view/2166/pdf>
- Rahmah, A. Z., & Armina, S. H. (2020). Macro and micro determinants of the non-performing finance: The case of Indonesian Islamic bank. *Jurnal Ekonomi & Keuangan Islam*, 6(1), 34–41.
<https://doi.org/10.20885/JEKI.vol6.iss1.art4>
- Rizvi, N. U., Kashiramka, S., & Singh, S. (2019). A hierarchical model of the determinants of non-performing assets in banks: an ISM and MICMAC approach. *Applied Economics*, 0(0), 1–21.
<https://doi.org/10.1080/00036846.2019.1584377>

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- Solihatun. (1994). Analisis Non Performing Financing (NPF) Bank Umum Syariah di Indonesia tahun 2007-2012. *Jurnal Ekonomi Pembangunan*, 12(1).
- Tanasković, S., & Jandrić, M. (2015). Macroeconomic and Institutional Determinants of Non-performing Loans. *Journal of Central Banking Theory and Practice*, 4(1). <https://doi.org/10.1515/jcbtp-2015-0004>
- Widarjono, A., Anto, M. B. H., & Fakhrunnas, F. (2020). *Financing Risk in Indonesian Islamic Rural Banks : Do Financing Products Matter ?*. 7(9), 305–314. <https://doi.org/10.13106/jafeb.2020.vol7.no9.305>
- Widarjono, A., & Rudatin, A. (2021). The Determinants of Indonesian Islamic Rural Banks' Non-Performing Financing. *Global of Islamic Economics and Business*, 9(1), 29–41.
- Wulandari, M. V., Suryana, & Utami, S. A. (2019). Determinant of Non-performing Financing in Indonesia Islamic Bank. *The 2nd International Conference on Islamic Economics, Business, and Philanthropy (ICIEBP) Theme: "Sustainability and Socio Economic Growth, 2019*, 453–468. <https://doi.org/10.18502/kss.v3i13.4223>