Islamic Banking Microprudential and Macroprudential Policy:
Evidence Indonesian Islamic Banking

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Abstract—**This study aims to examine the contribution of macroprudential policy to microprudential Indonesian Islamic Banking. The data used in the period January 2011 to December 2018 from 11 Sharia Commercial Banks (BUS) with statistical regression tests and panel data are fixed effects and random-effects models. The findings of this study indicate that the contribution of LTV to FDR is negative, LTR contribution to ROA shows negative and significant results. The contribution of GWM-LFR to FDR is positive and significant, the contribution of GWM-LFR to ROA has a negative and significant effect, the contribution of CCB has a negative but not significant effect on FDR, and the contribution of CCB to ROA has a positive and significant effect.**

Keywords—islamic banking, macroprudential policies, microprudential banking

I. INTRODUCTION

Macroprudential policy is technically defined as countercyclical which aims to maintain overall financial sector stability that it can overcome any potential systemic risks caused by the failure of financial institutions and or markets which eventually can cause economic crises [1]. Meanwhile, microprudential policy refers to the individual level synergy of Islamic banking, which is needed in order to maintain the financing quality towards the increase of the NPF rates. More precisely, microprudential policy as the health level of each individual financial institution (bank and non-bank) as its effort in maintaining its financial system stability [2]. Both macroprudential and microprudential policies function to prevent the financial system instability, but with a different approach. Focus on the quality of health of each financial institution, and the microprudential policy has the ultimate objective as to strive for preventing the financial instability by reducing the potential loss borne by financial institutions, which eventually leads to the consumer's protection [1]. Generally, financial stability is regarded as one of the microprudential policy objectives particularly through its focus on each financial institution risk and resilience, which in turn gives a contribution in ensuring the financial system resilience as a whole. Moreover, this is because the individual financial institution's health condition is a primary concern needed for a reliable and firm financial system stability [3], [4].

II. LITERATURE REVIEW

Most research has been carried out to reflect the relationship of central bank macroprudential policies with microprudential Islamic banking [5]-[14]. The study Real Business Cycle (RBC) model to evaluate the macroprudential instruments against technology, housing prices, and financial shocks. The results show that for technological shock, the best choice is the combination of CCB ratio and LTV, which is used as the macroprudential instrument. This implies the premise: if the economy experiences a shock in housing prices and CCB macroprudential is applied by the authority, the shock will get worse. In sum, this study recommends that authorities implement a combination of macroprudential instruments [15].

The second study aims to determine the effect of macroeconomic and banking factors on credit risk in the Islamic banking system by using panel data regression analysis as a research method, and this study uses a data set consisting of secondary data obtained from annual bank reports. In addition, it also makes use of the macroeconomic variables obtained from the Central Bureau of Statistics and Bank of Indonesia from 2010 to 2016 period. The research results support the hypothesis that the bank size has positive and significant effects on credit risk. Furthermore, the research also tests other variables such as financing expansion, financing quality, GDP, and Inflation, which all prove to have a negative and significant effect on credit risk [16].

The third relevant study shows that GWM instruments based on macroprudential policies have a positive effect on credit growth in both conventional and Islamic banks. From the macroeconomic side, credit growth is positively affected by GDP and is negatively affected by the Bank of Indonesia rate and Inflation. Besides, the credit rate is also influenced by the ratio of third-party funds (LDPK) and NPL. Interestingly, there are different effects of capital buffer instruments on credit growth. Meanwhile, as for buffer capital instruments, they have a negative impact on the growth of Islamic bank financing in Indonesia [17].

The research of Riduwan and Rofiul Wahyudi becomes the fourth relevant study. This study shows that the contribution of Central Bank's macroprudential policy toward microprudential performance, represented by the Loan-to-Value Ratio (LTV) and CCB instruments, is that it has a negative and significant effect on the Indonesian Islamic banking FDR. Macroprudential Statutory Reserves (GWM) policy instrument, which is based on Loan-to-Funding Ratio (LFR) shows that it has a positive and significant effect on the Indonesian Islamic banking FDR [18].

The research conducted by Isaev and Masih completes the source of reference. This study explores the factors driving

non-bank financing in Malaysia during the 2010-Q4 and 2016-Q3 periods. OLS is used to examine the impact of macroeconomic and bank-specific to a funding category. This finding tends to show that macroeconomic variables, especially the unemployment rate has an impact on the level of non performing financing. Therefore, effective implementation of risk management can ensure systematic risk mitigation that comes from macroeconomic changes and can increase the level of asset quality as well [19].

Waemustafa and Sukri also do research relevant to the topic. Their research analyzes the determinants of macroeconomic and bank-specific credit risk in both Islamic and conventional banks. The research sample consisted of 15 conventional banks and 13 Islamic banks in Malaysia from 2000 to 2010. This finding shows the determinants of credit risk affect the formation of credit risk both Islamic and conventional banks. Furthermore, research findings indicate that financing in this sector has an impact on the risk of Islamic bank financing. Whereas Conventional Banks, loan loss provisioning, debt to total asset ratio, REGCAP, size, earnings management, and liquidity are significant factors that affect credit risk. However, only macroeconomic variables, inflation and M3 have a significant impact on credit risk of Islamic and conventional banks [20].

The last review of the study relevant to the topic is the study of Najuna et al. This research investigates credit risk determinants of Islamic banking in Malaysia from 1995 to 2013. The results showed that some bank-specific variables affect the credit risk of Islamic banks in Malaysia. Furthermore, the ownership status factors showed significant differences between local and foreign Islamic banks. This finding adds to empirical evidence in the literature review related to credit risk, particularly credit risk among Islamic banks [21].

Based on the relevant studies listed, it can be seen obviously that as for the case of Indonesian context, there are only a few studies that have explicitly discussed the influence of macroprudential policies on the microprudential in the Islamic banking system. However, due to the fact that Indonesia is one of the major countries in Southeast Asia region, it is of high necessity that enough attention must be given to this issue, as to maintain the financial stability.

III. RESEARCH METHOD

This study uses panel data gained from 11 Islamic Commercial Banks from January 2011 to December 2018 period. These data are obtained from the Financial Services Authority websites. As for the macroprudential variables, it is used the instruments of LTR, LFR, and CCB. Meanwhile, FDR and ROA are utilized as the Islamic banking microprudential variables.

IV. FINDINGS AND DISCUSSION

Statistical test results using panel data regression found that the effect model was corrected and the effect was random.

Panel data regression test results on the two models are presented in the following table.

TABLE I.   PANEL DATA REGRESSION TEST

VARIABLES	(1)	(2)
	FDR	ROA
LN_LTR	-9,674 (16,719)	-0,362*** (0,108)
LFR	1,001*** (0,001)	-0,000025*** (0,000003)
CCB	-0,314 (0,304)	0,004** (0,001)
Constant	408,135 (486,639)	10,670*** (3,122)
Observations	1052	1052
Prob > F	0,000	0,000
R-squared	0,999	0,103

Standard errors in parentheses
*** p<0,01, ** p<0,05, * p<0,10

A. Contribution of LTV Towards FDR

The contribution of LTV to FDR shows a negative but not significant impact. Its means that when the government increased the LTV policy minimum limit on mortgages and amount of Down Payment on the motorized vehicles credit (KKB), the financing growth of property and motor vehicles sectors will decline but not in a significant category. This happens because the so high level of the community need towards property and motorized vehicle sectors that it causes the LTV policy has a relevant influence on the growth of financing as measured through FDR.

The meaning of implementing LTV policy is to predict and suppress mortgage very high growth which able to increase the price of property assets that are not the same as the actual price so there is potential credit risk for banks. In accordance with [1], LTV policy is the reason for the high credit growth in the property sector and the motor vehicle, which has the potential to interconnected risk.

This result is different from the findings on Hahm et al., that the LTV policy able to withstand the fluctuation rate credit. Similarly, Lim, et., al finding lest LTV instruments were effective in reducing procyclicality but their effectiveness was highly dependent on shocks in the financial sector [22].

B. Contribution of LTR Towards the FDR

The contribution of LTR to ROA shows negative and significant results. This finding shows that policies governing the distribution of financing reduce the level of profitability. These results indicate that government policies to regulate the provision of financing channeled by Islamic banking have a negative impact on the profitability level of Islamic banking. The decline in the profitability level of Islamic banking is due to the prudential attitude of Sharia banking in channeling financing as it needs to be in line with the LTR threshold as set by the government.

The implementation of the LTV policy is carried out to oversee the growth of housing loans. The limitation of implementing the first LTV in 2012 was a maximum of 70% financing, which led to a decline in housing finance growth.

Furthermore, in 2013, there was a change in the provisions of the second LTV, namely the application of the maximum difference in the first, second, and third housing finance.

Amendment of prohibited provisions for ownership of a house with a pivot. After two years of applying the LTV II regulations, the government ratified an 80% to encourage growth in housing finance.

C. Contribution of GWM-LFR Towards the FDR

The findings of this study indicate that it exists positive and relevant impact. That is to say the GWM-LFR policy contribution is able to foster the role of financial intermediaries. In line with Bank Indonesia (2015), GWM-LFR policy is applied to encourage economic growth through bank credit growth. This finding is in line with Yoel (2016) that reserve requirements affect bank loans positively. However, refuting the theory and other research which states that the increase in reserve requirements pushes the number of bank loans to decrease because banks must set aside more reserves to meet regulations. According to Tovar, Garcia-Escribano, and Martin (2012) implementation is countercyclical reserve requirements that have short-term effects in influencing the growth of credit.

D. Contribution of GWM-LFR Towards the ROA

This finding shows the contribution of GWM-LFR to ROA has a negative and significant effect. This causes Islamic banks to reduce financing to the real sector as a result of reserve requirement policies. As a result, ROA levels have decreased. GWM-LFR is the minimum deposit in rupiah should deposited by the bank in the form of a certain percentage of third party funds (DPK), which is calculated based at the difference between the LFR held by the bank and the LFR target. The policy was developed with the aim of reducing the increase in systemic risk through controlling the banking intermediary function in accordance with the capacity and economic growth targets and maintaining bank liquidity. This policy is expected to stimulate a balanced banking functions and quality [1].

E. Contribution of CCB Towards the FDR

The findings of this study indicate that the contribution of CCB have a negative impact but not significant on FDR. When the number of CCBs has increased, it will have an impact on the amount of bank financing. This finding is in line with Pramono, et al. (2015) that changes in CCB regulations have an impact on bank credit growth. Recommendations from these findings is that the CCB policies applied in Indonesia to mitigate excessive credit growth [24].

F. Contribution of CCB Towards the ROA

The findings of this study indicate the contribution of CCB to ROA has a positive and significant effect. The findings of this study CCB have a positive and significant effect on ROA. This means that when Islamic banking is able to carry out CCB policies to anticipate credit risk, it will be able to withstand risk and at the same time improve performance. Its means that when Islamic banking is able to implement CCB policies, it will be able to withstand risks and improve performance at the same time.

CCB is an additional capital policy as support to hold the level of losses if bank credit expansion is excessive that has the potential to disrupt financial system stability. This policy is applied when there is a tendency for the growth of bank credit prosiklikal [1].

V. CONCLUSSION

Empirical findings show that LTR / LTV has negative effect on FDR, LTR / LTV has negative and significant effect on ROA, GWM-LFR has positive and significant effect on FDR, GWM-LFR is negative and has significant effect on FDR, CCB is negative and significant effect on FDR, CCB has positive and significant effect on ROA.

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REFERENCES

[1] Bank Indonesia. 2016. "Mengupas Kebijakan Makroprudensial." Indonesia.1, 55.

[2] Gambacorta, L., & Mistrulli, P.M., (2003) "Bank Capital and Lending Behaviour : Empirical Evidence for Italy ". Banca d'Italia, Research Deparment.

[3] Hahm, J. H., Frederic S. Mishkin, Hyun Song Shin and Kwanho Shin. 2011. Macroprudential Policies in Open Emerging Economies. Asia Economic Policy Conference. Hal 63-114.

[4] Isaev, Mirolim, and Mansur Masih. 2017. "Macroeconomic and Bank-Specific Determinants of Different Categories of Non-Performing Financing in Islamic Banks: Evidence from Malaysia." Munich Personal RePEc Archive, no. 79719.

[5] José A. Carrasco-Gallego. 2018. "Macroprudential Policies Interactions." UPO Research Seminar SessionsResearch Seminar Sessions, no. May: 1–28.

[6] Lim, C., F. Columba, A. Costa, P. Kongsamu, A. Otani, M. Saiyid, T. Wezel, and X.Wu. 2011. IMF Working Paper. Monetary and Capital Markets Department. Macroprudensial Policy: What IInstrument and How to Use Them? Lessons From Country Experiences. October 2011. Hal 1-84.

[7] Muhammad Rizky Prima Sakti. 2018. "The Concept and Practices of Macroprudential Policy in Indonesia : Islamic and Conventional." Al-Iqtishad: Jurnal Ilmu Ekonomi Syariah (Journal of Islamic Economics) 10 (January): 75–96.

[8] Najuna, Faridah, Ishaq Bhatti, Weifang Lou, and Syamsyul Samsudin. 2015. "Islamic Banks Credit Risk : A Panel Study." Procedia Economics and Finance 31 (15): 75–82. https://doi.org/10.1016/S2212-5671(15)01133-8.

[9] Osi, Jacek, Katharine Seal, and Lex Hoogduin. 2013. "Macroprudential and Microprudential Policies : Toward Cohabitation." IMF Staff Discussion Note.

[10] Tovar, C. E., Garcia-Escribano, M.,& Martin, M. V. (2012). Credit growth and the effectiveness of reserve requirements and other macroprudential instruments in Latin America. IMF Working Paper, 142.

[11] Pramono, B., Januar H., Justina A., Maulana H M., Muhammad S A., 2015. Dampak Kebijakan Countercyclical Capital Buffer Terhadap Pertumbuhan Kredit Di Indonesia. Working Paper Bank Indonesia.

[12] Riduwan and Rofiul Wahyudi. 2017. "Contribution of Macroprudensial Policy of Central Bank On Microprudensial Islamic Banking." INFERENSI, Jurnal Penelitian Sosial Keagamaan 11 (2): 291–308.

[13] Waemustafa, Waeibrorheem, and Suriani Sukri. 2015. "Bank Specific and Macroeconomics Dynamic Determinants of Credit Risk in Islamic Banks and Conventional Banks." International Journal of Economics and Financial Issues 5 (2): 476–81.

[14] Wiryono, Sudarso Kaderi, and Kharisya Ayu Effendi. 2018. "Islamic Bank Credit Risk : Macroeconomic and Bank Specific Factors." European Research Studies Journal XXI (3): 53–62.

[15] Yoel, Eric Matheus Tena. 2016. Pengaruh Kebijakan Makroprudensial Terhadap Siklus Kredit: Sebuah Studi Atas Penggunaan Instrumen Car Dan Gwm Perbankan Indonesia 2006-2013. Jurnal Bina Ekonomi. Volume 20 Nomor 1.