Micro, Small and Medium Enterprises Financing in Islamic Rural Banks in Indonesia

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ARTICLE INFO	ABSTRACT

ABSTRACT

Purpose: Purpose of this paper to analyze relation between internal factorsconsist of CAR, ROA, ROE, NPF, BOPO and external factors consist of Inflation, Interest rate, exchange rate that influence Islamic Rural Bank financing to Small Medium Enterprises.

Design/Method/Approach: This paper use financing SME data from Islamic Rural Bank, internal and external factor from Islamic Rural Bank in 2010-2018. The paper use vector autoregression if stasioner in level an use vector error correction model of stasioner and cointegration in first difference. Use IRF and VD analysis to predict in the future.

Findings: Results indicate that inflation, interest rate, NPF and BOPO have long term effect in SME financing an in short term only NPF influencing in SME financing.

Originality/Values: Islamic finance industry one of industry that very important, this paper adds to understand Islamic finance industry which has received limited attention. Novelty in this paper use SME financing in Islamic rural bank, inflation, exchange rate, interest rate.

INTRODUCTION

Islamic finance is one of the fastest growing industries in international financial system. Currently, global Islamic financial assets have reached USD 2.190 million in June 2018 and occupy the 71.7% figure, while the rest are occupied by sukuk, takaful and Islamic funds[1]. One of the Islamic financial institutions is Islamic Rural Bank (BPRS), where BPRS is a bank that serves small business actors who are not yet covered by commercial banks. BPRS has same goals and characteristics as several other micro institutions. In principle, the BPRS does not provide traffic payment services such as commercial banks and does not provide demand deposits, foreign exchange and insurance activities. BPRS only collects funds in form of deposits, provides credit, provides financing and places available funds in various instruments or forms such as Indonesian bank certificates, Indonesian sharia bank certificates, time deposits, certificates of deposit[2]. BPRS are generally located in rural areas where they limit products and services more easily compared to commercial banks. Because the amount of assets and capital is lower than that of commercial banks, BPRS financial services generally tend to be more micro-enterprises. The number of BPRS in Indonesia alone until 2019 reached 164 spread throughout Indonesia[3]

Table 1.
Financing by BPRSin 2019

Total Financing with details of	Rp. 10.07 trillion
- Working Capital	Rp. 3.80 trillion
- Investment	Rp. 1.50 trillion
- Consumption	Rp. 4.77 trillion
Total Financing for UMK	Rp. 4.55 trillion
Total Financing for non-UMKM	Rp. 5.52 trillion

Source: Sharia Banking Statistics,2019

Table 1 explains the financing carried out by BPRS in 2019 starting from financing for working capital, investment to consumption and financing for MSMEs itself only Rp. 4.55 trillion less than the financing for non-MSMEs of Rp. 5.52 trillion. The data also illustrates that allocation of BPRS financing is greater for non-MSMEs, although BPRS is the mainstay of financing for MSMEs,

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[1]Islamic Financial Services Board, "Stability Report 2019," 2019.

[2]OJK, "Bank Perkreditan Rakyat," OJK, n.d., https://www.ojk.go.id/id/kanal/perbankan/Pages/Bank-Perkreditan-Rakyat.aspx.

[3]Hosen, Muhamad Nadratuzzaman and Syafaat Muhari, "Non-Performing Financing of Islamic Rural Bank Industry in Indonesia," *Banks and Bank Systems* 14, no. 1 (January 15, 2019): 20–28, https://doi.org/10.21511/bbs.14(1).2019.03.

therefore the financing allocation for BPRS financing for MSMEs must be increased[4].

Micro, Small and Medium Enterprises (MSMEs) have different definitions referring to the criteria of their institutions or agencies. According to BPS, MSMEs related to use of labor, it is said to be a small business if the workforce owned is 5 to 19 people, medium business if it has a workforce of 20 to 99 people. According to Law 20/2008, the criteria for MSMEs are business structures that have a maximum asset of 50 million rupiah and maximum turnover of 300 million rupiah, including micro businesses. The World Bank itself defines MSMEs in three types of approaches, namely the number of employees, income and asset ownership[5]. MSMEs have an important role in the national economy where MSMEs absorb as much as 97% of the workforce and 99% of total employment. UMKM also contributed to the national GDP of 60.34%. Lending was mostly dominated by national commercial banks, BPR and BPRS distributed loans amounting to 52,433.80 billion rupiah or 5.10% of total MSME credit disbursements from banks[6].

Financing is a large part ofthe asset so its quality needs to be maintained.[7]Financing is one component of business expansion in MSMEs. With financing, businessman can obtain capital, either in form of machinery, or raw materials used to develop their business. In this paper, describes the factors that influence the financing provided by BPRS to MSMEs where these two things cannot be separated because BPRS occupies a strategic role in helping to develop Micro, Small and Medium Enterprises (MSMEs) and provide services that can be reached by all levels of society. By strengthening MSMEs, it is hoped that it can help run the wheels of the economy. The following is table regarding BPRS financing at MSMEs.
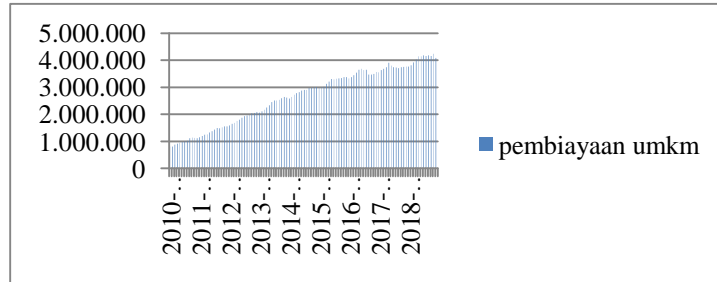
Table 2.
Financing BPRS to UMKM

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[4]KNKS, "Potensi BPRS Di Tengah Pertumbuhan Ekonomi Umat," *Komite Nasional Keuangan Syariah*, 2019, KNKS.go.id.

[5]Kementrian Keuangan, "Kebijakan Antisipasi Krisis Tahun 2012 Melalui Program Kredit Usaha" (Badan Kebijakan Fiskal, 2012).

[6]Kementerian Koperasi dan Usaha Kecil dan Menengah Republik Indonesia, "Sinergitas Pengembangan KUMKM Melalui Penguatan Peran Antar Lembaga," 2019.

[7] Rahayu, Ika Gustin, and Hendrianto Hendrianto, 'Mitigasi Risiko Pembiayaan Pada Bank Perkreditan Rakyat Syariah (BPRS) Safir Cabang Curup Kabupaten Rejang Lebong', *AL-FALAH : Journal of Islamic Economics*, 3.2 (2018), 85 <https://doi.org/10.29240/alfalah.v3i2.638>

Source: Financial Services Authority (OJK), 2019

Table 2 illustrates the increase in financing made by BPRS to MSMEs in Indonesia and increase the financing made by BPRS indicates that BPRS also has opportunity to help develop MSMEs and can have an impact on the country's economy.

Research conducted by Anwar (2019) on efficiency and loans to micro and small business case studies in West Java. The results showed that there was a significant impact on the provision of loans for micro and small enterprises in West Java. This indicates the importance of maintaining and increasing bank efficiency as an effort to improve the ability to provide financing for micro and small businesses[8].

Hosen and Muhari (2019) conducted a study on non-performing finance on the Islamic Rural Bank Industry in Indonesia where in this study, there was a significant relationship between size of banks, financing to deposit ratio, operational efficiency ratio, return on equity, expense to assets, percentage of gross domestic product and the rate of inflation towards non-performing finance of the Islamic Rural Bank Industry. GDP has big impact on NPF and the other variables have different impact depends in zone[9].

This study uses internal and external factors in financing carried out by BPRS to MSMEs including in this case inflation, interest rates, CAR, ROA, ROE, NPF, BOPO, exchange rates. This research focuses on the relationship between the conditions of BPRS in terms of external and internal factors for financing of MSMEs. This is important to discuss because the purpose of establishing the BPRS itself is for businessman both in urban and rural areas which are generally not accessible to commercial banks so that this research can provide input to BPRS regarding activities carried out, namely financing to MSMEs so that they can be improve their business.

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[8]Mokhamad Anwar et al., "Rural Bank Efficiency and Loans for Micro and Small Businesses: Evidence from West Java Indonesia," *International Journal of Emerging Markets* 15, no. 3 (September 2, 2019): 587–610, https://doi.org/10.1108/IJOEM-11-2017-0494.

[9]Hosen, Muhamad Nadratuzzaman and Muhari, "Non-Performing Financing of Islamic Rural Bank Industry in Indonesia."

MATERIAL AND RESEARCH METHODS

Business world is world that always changing, so financial instruments must adjust accordingly in order to keep up with the business being run. The financial model that uses current interest rates does not provide convenience to MSMEs and cannot be used by MSMEs that are just starting a business because they are more risky compared to existing businesses. In the traditional system of financing, lending includes MSMEs where there is an obligation to repay the interest set on their loans regardless of the profit or loss conditions[10].

One of the goals of establishing a sharia people's finance bank is to serve small and medium-sized entrepreneurs in rural and suburban areas that are usually not affordable by commercial banks. BPRS does not do business in opening accounts, clearing systems, buying and selling foreign currencies and financing equity funds. In general, BPRS and microfinance institutions have the same objective, namely commercial and community development, it can be said that they are not only for profit but also serving the community[11].

Interest rate is reference in determining interest set by Bank Indonesia for banks, including for BPRS. Study conducted by Ibrahim and Sufian (2014), the evaluation of the relationship between Islamic financing and financing variables includes real output, price levels, interest rates and stock prices in Malaysia. The results showed a positive response in innovative Islamic financing on real output. The share price has significant effect but there is lag on Islamic bank financing. Islamic financing itself has negative impact on interest rate volatility.[12].

H1: *: Interest rates have a positive or negative influence on MSME financing*

Inflation is external one in banking. Inflation is related to the continuous increase in prices for goods, services and production factors. Inflation results in a decrease in the value of money[13].

H2: *Inflation has a positive or negative effect on MSME financing.*

[10]Yasmeen Al Balushi, Stuart Locke, and Zakaria Boulanouar, "Omani SME Perceptions towards Islamic Financing Systems," *Qualitative Research in Financial Markets* 11, no. 4 (November 4, 2019): 369–86, https://doi.org/10.1108/QRFM-06-2018-0078.

[11]Hosen, Muhamad Nadratuzzaman and Muhari, "Non-Performing Financing of Islamic Rural Bank Industry in Indonesia."

[12]Mansor H. Ibrahim and Fadzlan Sufian, "A Structural VAR Analysis of Islamic Financing in Malaysia," *Studies in Economics and Finance* 31, no. 4 (September 30, 2014): 371–86, https://doi.org/10.1108/SEF-05-2012-0060.

[13]Ahmad Mukri Aji and Syarifah Gustiawati Mukri, *Strategi Moneter Berbasis Ekonomi Syariah*, 2020th ed. (Yogyakarta: Deepublish, n.d.), https://books.google.co.id/books?id=73zlDwAAQBAJ&pg=PA65&dq=inflasi+adalah&hl=en&sa=X&ved=2ahUKEwinxZylwu3sAhVbU30KHexIAGIQ6AEwAHoECAIQAg#v=onepage&q=inflasi%20adalah&f=false.

Exchange rate is price of a country's currency expressed in the currency of another country. The exchange rate will increase production costs when there is depreciation so businessman income will decrease, especially if small-scale businessman use imported raw materials[14].

H3: *Exchange rates have a positive or negative effect on MSME financing*

Capital Adequacy Ratio (CAR) is used to measure the minimum capital adequacy ratio that must be owned by a bank, this ratio is used to see how the bank bears losses due to non-current financing. In research conducted by Yolanda and Ariusni (2019) regarding internal and external factors on problematic financing at Islamic Commercial Banks and Islamic People's Financing Banks, it shows the results of CAR have negative and significant effect on NPF in Islamic Commercial Banks and Sharia Rural Banks[15].

H4: *CAR has a positive or negative influence in MSME financing*

Return on Assets (ROA) shows the ability of banks to generate profits where if the ROA is high, the bank's profits will be higher and the value of bank assets is also high. In research conducted by Afkar (2017), it shows there is significant effect of sharia financing for MSMEs on ability to earnprofit[16].

H5: *ROA has a positive or negative effect on MSME financing*

Return of Equity (ROE) shows calculation of net profit after tax with capital. Research conducted by Susilowati and Nawangsasi (2018) on the effect of financial performance on the distribution of financing to Islamic commercial banks in Indonesia, which in this study shows that ROE does not have a significant effect on distribution of financing[17].

H6: *ROE has a positive or negative influence on MSME financing*,

Non-Performing Financing (NPF) is ratio in financing in Islamic banking which shows problematic financing to total financing, according to Bank

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[14]Herni Hernawati and Oktaviani Rita Puspasari, "Pengaruh Faktor Makroekonomi terhadap Pembiayaan Bermasalah," *Journal of Islamic Finance and Accounting* 1, no. 1 (May 17, 2018), https://doi.org/10.22515/jifa.v1i1.1134.

[15]Sherly Yolanda and Ariusni, "PENGARUH FAKTOR INTERNAL DAN EKSTERNAL TERHADAP PEMBIAYAAN BERMASALAH PADA BANK UMUM SYARIAH (BUS) DAN BANK PEMBIAYAAN RAKYAT SYARIAH (BPRS)," *834 Jurnal Kajian Ekonomi dan Pembangunan* 1 (2019): 833–44.

[16]Taudlikhul Afkar, "PENGARUH PEMBIAYAAN USAHA MIKRO, KECIL, MENENGAH (UMKM), DAN KECUKUPAN MODAL TERHADAP KEMAMPUAN MENDAPATKAN LABA DARI ASET PERBANKAN SYARIAH DI INDONESIA," *Al-uqud : Journal of Islamic Economic* 1 (2017): 19.

[17]Eko Meiningsih Susilowati and Endah Nawangsasi, "PENGARUH KINERJA KEUANGAN TERHADAP PENYALURAN PEMBIAYAAN PADA BANK UMUM SYARIAH DI INDONESIA: PERIODE 2013-2015," *ProBank: Jurnal Ekonomi dan Perbankan* 3, no. 1 (2018): 9.

Indonesia regulations, the quality of financing good if the amount of non-performing financing is a maximum of 5%[18].Research conducted by Suhel, et.al (2018) on economies of scale in MSME financing in the Islamic banking industry. The results obtained in this study indicate that third party funds, employees, NPF and MSME financing in each branch have a significant impact, while the number of Islamic bank offices does not contribute to MSME financing[19]. The provision of loans from BPRS to small and medium enterprises in West Java is influenced by the efficiency of the BPRS so that the more efficient banks are the more banks capacity will increase in providing loans. This result is obtained from research conducted by Anwar [20].

H7: *NPF has a positive or negative influence in the financing of MSMEs*

Operational Costs per Operating Income (BOPO) where this ratio shows the level of efficiency and ability of the bank in its operational activities, the lower the BOPO level, the higher the benefits. A large BOPO ratio indicates that the profit growth rate received by banks is getting smaller because banks are unable to reduce their operational costs[21].

H8: *BOPO has positive or negative influence on MSME financing*

Abas (2017) conducts research on the role of Islamic banks in strengthening micro, small and medium enterprises in South Maluku, Indonesia. Where this research discusses Islamic financial institutions in providing UMKM financing with the aim supporting the strengthening of regional and national economy. The results of this study indicate the commitment of Islamic banking to the UMKM sector, shown by various strategies such as opening MSME business outlets or MSME centers. Financing in Islamic banks has positive impact on a person's economic fundamentals, the role of Islamic banks is able to accelerate the MSME sector in the economy[22].

According to research conducted by Huda (2012), regarding the development of financing schemes for MSMEs in developing countries. The financing in question is financing that has participatory scheme, namely mudharabah and musyarakah. The results presented in this study are that Islamic

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[18]Yolanda, "Pengaruh Faktor Internal Dan Eksternal Terhadap Pembiayaan Bermasalah Pada Bank Umum Syariah (BUS) Dan Bank Pembiayaan Rakyat Syariah (BPRS)."

[19]Suhel et al., "The Economic Scale of Small-Medium Enterprises Financing in Sharia Banking" 8, no. 3 (2018): 6.

[20]Anwar et al., "Rural Bank Efficiency and Loans for Micro and Small Businesses."

[21]Fajar Mujaddid and Ghaida Fathihatu Sabila, "Pengaruh Pembiayaan Umkm Dan Rasio Keuangan Terhadap Pertumbuhan Laba Bank Umum Syariah Di Indonesia" 9 (2018): 18.

[22]Sofyan Abas, "The Role Of Sharia Banking In Strengthening The Micro, Small, And Medium Enterprises In North Maluku, Indonesia" 6, no. 10 (2017): 6.

financing schemes can solve problems faced by MSMEs in the context of developing countries [23].

This research was conducted at Sharia BPR in the State of Indonesia in 2010-2018. Data collection began in 2010-2018 due to the availability of data needed in journal writing. This study uses data consisting of MSME Financing, BPRS internal factors such as CAR, ROA, ROE, NPF, BOPO, and external BPRS factors such as inflation, interest rates, exchange rates. Retrieval of data from statistical reports from the Financial Services Authority, the website of Bank Indonesia and the website of the Ministry of Trade. The research model used has two conditions in which the research model uses Vector Auto Regression (VAR) if the output is stationary at the level, but if the output data is stationary at the first difference level, this study uses VAR at the first difference level or uses the Vector Error Correction Model (VECM). VAR is a form of simultaneous equation system.VAR research model can be applied to all variables as long as the data is stationary. Meanwhile, if the data shows non-stationary results at the level, the research model uses VECM. Policy analysis is carried out through Forecasting, Impulse Response Function (IRF), Forecast Error Variance Composition (FEVD) and Granger Causality Test. The general equation for VAR is

$$Y_t = A_0 + A_1 y_{t-1} + A_2 y_{t-2} + \ldots + E_t \ldots \ldots \ldots (1)$$

Where: Y_t = size vector (n.1) which contains n variables contained in the VAR model

A_0 = intercept vector of size (n.1)

A_1 = matrix of size coefficients / parameters (nn) for each i = 1,2… p

ε_t = error vector of size (n.1)

VECM is derivative of the VAR method, the same assumptions are fulfilled as VAR except stationarity, in VECM all data must be stationary at the first differentiation and have the same stationary. In VECM, there are speed o adjustments from the long term to the short term. The VECM model is

$$\Delta y_t = \mu_{0x} + \mu_{1x} t + \pi_x y_{t-1} + \Delta y_{t-1} + \varepsilon_t \ldots \ldots \ldots (2)$$

Where:

y_t= the vector containing the variables analyzed in the study

μ_{0x}= intercept vector

μ_{1x} = regression coefficient vector

[23]Aulia Nurul Huda, "The Development of Islamic Financing Scheme for SMEs in a Developing Country: The Indonesian Case," *Procedia - Social and Behavioral Sciences* 52 (2012): 179–86, https://doi.org/10.1016/j.sbspro.2012.09.454.

$t = $ *time trend*

$\pi_x = a_x\beta$ *'where b contains the long-run co-teration equation*

$y_{t-1} = $ *in-level variable*

$r_{ix} = $ *regression coefficient matrix*

$k_1 = VECM$ *order of* VAR

$\varepsilon_t = $ *error term*

Furthermore, to determine the use of VAR first difference or VECM followed by cointegration test, the results obtained show the results using VECM.

RESULTS AND DISCUSSION

Unit Root Test

The initial stage in estimating VAR is to test the stationarity of each variable, both dependent and independent. In conducting the stationary test, this study used the ADF (Augmented Dicky Fuller) test using a real level of 5%. The output is said to be stationary or does not contain a unit root if the t-ADF value is less than critical value MacKinnon.

Table 3.
Unit Root Test Results

Variabel	ADF t-statistic	
	level	1st difference
MSME Financing	-5.455521	-7.484402
	(0.0000)*	(0.0000)*
Inflation	-2.502781	-7.743197
	(0.1177)	(0.0000)*
Interest rate	-1.389798	-6.878467
	(0.5847)	(0.0000)*
CAR	-2.899860	-16.09241
	(0.0487)	(0.0000)*
ROA	-2.062181	-12.38303
	(0.2604)	(0.0000)*
ROE	-2.281957	-11.07434
	(0.1797)	(0.0000)*
NPF	-1.645076	-11.79744
	(0.4562)	(0.0000)*
BOPO	-1.284782	-13.80624
	(0.6346)	(0.0000)*
Exchange Rate	-0.939944	-10.34208
	(0.7719)	(0.0000)*

*Note: * significant at the 5% level, the numbers locked in are probability values*
Source: Data Processed, 2019

Table 3 presents results of the unit root test where all the variables level up to the first difference. The variables in the study used the stationary augmented dicky fuller test at the first difference level at the 5% real level. The next test is to find the optimum lag in order to continue the Johansen cointegration test.

Optimum Lag Test

After knowing the stationarity of the data at level 1st difference, next test is to find the lag length. The implementation of the optimum lag test is useful for eliminating autocoreation problems in the VAR system, so autocorrelation problems do not arise. Estimation using VECM is sensitive to lag of the data used. Determine the lag length by looking at value of Likelihood Ratio, Final Prediction Error, Akaike Information Crition, Schwarz Information Crition and Hannan-QuinCritionTabel

Table 4.
Lag Optimum Results Test

Panjang lag	logL	LR	FPE	AIC	SC	HQ
0	-1208.348	NA	0.149112	23.63783	23.86805	23.73108
1	-264.0330	1705.269	7.86e-09*	6.874428*	9.176618*	7.806894*
2	-188.6580	122.9418	9.07e-09	6.983650	11.35781	8.755335
3	-117.7462	103.2696	1.20e-08	7.179537	13.62567	9.790442
4	-37.14262	103.2978*	1.45e-08	7.187235	15.70534	10.63736
5	43.15943	88.87799	1.99e-08	7.200788	17.79086	11.49013

Source: Processed data, 2019

In table 4 above it is known that lag on lag 1 has many stars. Then lag 1 is used at this stage in the next analysis. In addition, the lag selection can be determined using AIC or SC where the two estimates are both at lag 1.

Cointegration Test

The next test is the cointegration test. Cointegration test can be done when the stationarity test has been carried out and data is stationary at the same level. If there is no cointegration then use the VAR model at the first difference level. The key to the Johansen test lies in selecting the right test and lag order. Johansen test to test the possibility of a relationship between vectors or long-term relationships between variable models. In the research conducted, the

cointegration test used the Johansen cointegration test with a significant level of 5%.

Table 5.
Cointegration Test Results (*Johansen's Cointegration Test*)

Hypothesized no. of CE(s)	Eigen value	Trace statistic	0.05 critical value	Prob
None*	0.374157	224.4282	197.3709	0.0011
At most 1*	0.325624	174.7508	159.5297	0.0056
At most 2*	0.292511	132.9902	125.6154	0.0164
At most 3*	0.253482	96.31061	95.75366	0.0457
At most 4	0.205137	65.32308	69.81889	0.1084
At most 5	0.145286	40.98700	47.85613	0.1891
At most 6	0.090553	24.34625	29.79707	0.1862
At most 7	0.079872	14.28491	15.49471	0.0754
At most 8*	0.050216	5.461229	3.841466	0.0194

Note: cointegration at 0.05 cointegration level
Source: Data Processed, 2019

Table 5, describes the existence of cointegration where the trace statistic value is greater than 5% of real level, variables used illustrate the cointegration relationship between variables with each other and have similar long-term displacement. The next test is the significance test of the VECM estimation results.

Causality Test

Test Optimum lag test, model stability and cointegration, causality test have been carried out then perform the Granger test. The Granger causality test is used to see the direction of the relationship between variables of MSME financing, inflation, interest rates, CAR, ROA, ROE, NPF, BOPO and exchange rates. To see causality in terms of probability of each of the results of the causality test, it is then compared with alpha 0.05 and 0.1.

Table 6.
Granger Causality Test Results

Null hypothesis	F-Statistic	prob
INFLATION*does not Granger Cause* LN_UMKM	0.03704	0.8478
LN_UMKM *does not Granger Cause* INFLATION	1.87428	0.1739
INTEREST RATE*does not Granger Cause* LN_UMKM	0.36408	0.5476
LN_UMKM *does not Granger*	0.04929	0.8247

Null hypothesis	F-Statistic	prob
*Cause*INTEREST_RATE		
CAR *does not Granger Cause* LN_UMKM	1.47008	0.2281
LN_UMKM *does not Granger Cause* CAR	28.4598	6.E-07
ROA *does not Granger Cause* LN_UMKM	0.13022	0.7189
LN_UMKM *does not Granger Cause* ROA	5.56286**	0.0202
ROE *does not Granger Cause* LN_UMKM	0.60965	0.4367
LN_UMKM *does not Granger Cause* ROE	0.20252	0.6536
NPF *does not Granger Cause* LN_UMKM	0.00612	0.9378
LN_UMKM *does not Granger Cause* NPF	6.40941**	0.0128
BOPO *does not Granger Cause* LN_UMKM	0.10360	0.7482
LN_UMKM *does not Granger Cause* BOPO	7.04108**	0.0092
LN_EXCHANGE RATE*does not Granger Cause* LN_UMKM	0.05645	0.8127
LN_UMKM *does not Granger Cause* LN_EXCHANGE RATE	3.02102*	0.0852

Source: Processed Data, 2019
*Note: **, * indicates significance at 0.05 and 0.1*

Table 6 above shows at significance level of less than 5%, the null hypothesis is rejected or accepts H1. On the granger causality, MSME variable has causality in same direction as ROA, this also applies to MSME variable which has causality in the same direction as the NPF and MSME variable shows there is causality in the same direction as BOPO. At the 10% level the MSME variable has causality in line with the exchange rate.

VECM is a model used to describe the dynamic behavior of time series data in economics and finance. The VECM model can also estimate the short and long term. This paper uses a significance level of 5% t-table where the t-table shows a value of 1.98447. The variable is said to be significant if it receives H1 if the t-statistic is more than 1.98447 and less than -1.98447.

Table 7.

VECM Estimation Results

Variable	Short-term		Long-term	
	Coefficient	t-statistic	Coefficient	t-statistic
INFLATION(-1)	0.001791	[0.53196]	-0.107464	[-3.05474]**
INTEREST_RATE(-1)	-0.012425	[-1.18197]	0.240489	[3.54002]**
CAR(-1)	-0.000661	[-0.35261]	0.019790	[0.51538]
ROA(-1)	0.012306	[0.51781]	0.367478	[1.93974]
ROE(-1)	-0.001858	[-0.77952]	-0.017879	[-1.04630]
NPF(-1)	0.011211	[2.52285]**	-0.138884	[-2.07614]**
BOPO(-1)	0.000147	[0.09531]	-0.090004	[-4.96033]**
LN_EXCHANGE RATE(-1)	0.000716	[0.23055]	-0.046197	[-1.70879]

Note: ** signifikansi at level 5%
Sumber: Data Diolah, 2019

Table 7 show there are differences in effects on the same variables on MSME financing at BPRS. In short term, the only variables that affect the NPF, while the inflation, interest rates, CAR, ROA, ROE, NPF, BOPO and exchange rates have no effect in the short run. Whereas in the long term the variables that affect are inflation, interest rates, NPF, BOPO, while the variables of CAR, ROA, ROE, and exchange rates have no effect on the long run.

Inflation has no effect in the short term because no matter how much the price of goods increases, BPRS will still provide financing to entrepreneurs. The inflation variable affects the amount of MSME financing in the long run. The increase in price of goods negatively affects the financing made to MSMEs, this indicates that the increase in the price of raw goods needed in a business has an effect on decreasing the amount of MSME financing. BPRS will continue to provide financing but will reduce the amount of financing provided. The reduction in the amount of financing is in line with research conducted by Effendi and Yasmin (2017) where inflation has positive and significant effect in the long term. This result is not in line with the theory of BPRS which has different characteristics from conventional where BPRS uses profit-sharing system, therefore inflation should not affect the financing of MSMEs[24].

The research conducted describes the results in which interest rates affect the amount of BPRS financing for MSMEs in the long term. We know BPRS is financial institution that carries out its operations based on sharia principles, while the results of table 7 show different results from the theory where financial

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[24]Jaenal Effendi and Nurkholis Yasmin, "The Effect of Internal and External Factors of Banking to the SMEs Financing for BPRS in Indonesia," *Jurnal Keuangan Dan Perbankan* 21, no. 3 (October 30, 2017): 498–514, https://doi.org/10.26905/jkdp.v21i3.1221.

institutions that use sharia principles, interest rates do not affect their operational activities because operational activities at Islamic financial institutions use profit sharing principle. Table 7 shows a long-term linkage that can occur due to regulations on the application of interest rates to BI and is also used as the basis for a system that is still valid in Indonesia, so that an increase in interest rates will affect the financing made by BPRS to MSMEs. In research conducted by Ibrahim and Sufian (2014), it is suggested that the financing carried out by Islamic banks is influenced by changes in interest rate policies. This study is in line with the results in table 7, namely that interest rates have an influence on the financing made[25].

The next factor is CAR (Capital Adequacy Ratio) where in this study CAR has no effect in both the long and short term in financing. CAR itself is a capital ratio that shows the ability of BPRS to provide capital to business actors and to bear risks resulting from its operational activities. Regardless of the financing for UMKM does not affect the operational activities of the BPRS[26].

Return on assets does not have long and short term effect on the financing implemented by BPRS on MSMEs. ROA is profitability ratio that shows management's ability to generate income from bank assets. Therefore, if the ROA increases, the profitability of bank will also increase so that it can increase distribution of payments[27]. However, results of the research in this paper indicate that ROA has no effect on long or short term financing because one of the activities of the BPRS is providing financing, therefore, high ROA or not has no effect on financing activities undertaken.

ROE also has no effect on BPRS financing for MSMEs, both long and short term. This could be due to the fact that financing is one of the BPRS's duties. Therefore, the BPRS has calculated all the risks when financing MSMEs so that ROE does not have a significant effect. These results are in line with Susilowati and nawangsasi research (2018) where CAR does not affect the distribution of financing to Islamic banks[28].

Internal non-performing loan (NPF) factors affect the financing of BPRS to MSMEs in short and long term. The effect of non-performing loans in

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[25]Mansor H. Ibrahim and Fadzlan Sufian, "A Structural VAR Analysis of Islamic Financing in Malaysia," *Studies in Economics and Finance* 31, no. 4 (September 30, 2014): 371–86, https://doi.org/10.1108/SEF-05-2012-0060.

[26]Arno Nugroho, Muhammad Findi Alexandi, and Widyastutik, "Analisis Pengaruh Kinerja BPRS dan Kondisi Makroekonomi terhadap Penyaluran Pembiayaan Modal Kerja dan Investasi BPRS di Indonesia (Periode: 2011 - 2015)," *Al-Muzara'ah* 5, no. 2 (April 20, 2018): 146–67, https://doi.org/10.29244/jam.5.2.146-167.

[27]Herni Ali and Miftahurrohman Miftahurrohman, "Determinan yang Mempengaruhi Pembiayaan Murabahah Pada Perbankan Syariah di Indonesia," *ESENSI* 6, no. 1 (May 17, 2016), https://doi.org/10.15408/ess.v6i1.3119.

[28]Susilowati And Nawangsasi, "Pengaruh Kinerja Keuangan Terhadap Penyaluran Pembiayaan Pada Bank Umum Syariah Di Indonesia: Periode 2013-2015."

financing is strengthened by research conducted by Suhel (2018) related to the economies of scale of MSME financing in Islamic banking where NPF has an effect on financing for MSMEs. Where NPF is inelastic with negative coefficient which indicates that NPF will reduce the amount of financing for MSMEs in Islamic banks [29]. In the VECM test results, this paper shows different effects both in the long and short term, where in the short term NPF has positive impact, it can be interpreted that NPF does not reduce the amount of financing to MSMEs, while in long term the amount of NPF will reduce the amount of financing to MSMEs. This means that if there is an increase in NPF of 1%, it will reduce financing by 0.13884 percent, assuming other variables remain. NPF is a financing that is generated when debtor is unable to fulfill the obligation to return loan funds, so that the higher the problem of financing, the amount of financing will be reduced because bank funds cannot be borne by other customers.

Table 7 also describes the long-term influence of BOPO on the amount of MSME financing at BPRS. BOPO is ratio to calculate the cost of efficiency and effectiveness of operating income. BOPO has an influence on the financing of MSMEs, this indicates that the more effective and efficient the management of BPRS in monitoring operational costs and revenues will result in more and more financing being provided to MSMEs. The results showed that BOPO had a negative and significant effect on MSME financing. The significant negative effect on BOPO indicates that the higher the BOPO the lower the financing provided. One of the causes of low financing is because MSMEs requesting financing from BPRS have not met the stipulated criteria so the financing provided decreases. The research conducted is not in line with research conducted by Nurafini, Sukmana&Herianingrum (2017)[30]where BOPO does not have a significant effect on financing in Islamic banks. The growth of BOPO is not in line with the growth in MSME financing. This is possible because of different data collection years, differences in financial institutions, management at different Islamic rural banks and Islamic banks, resulting in different results.

The exchange rate has no effect in both the long and short term on BPRS financing. This can be because if the exchange rate fluctuates, there is a reduction in the amount of financing made. Especially for business actors who carry out imports.

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[29]Suhel et al., "The Economic Scale of Small-Medium Enterprises Financing in Sharia Banking," *International Journal of Economics and Financial Issues* 8, no. 3 (2018): 6.

[30]Fira Nurafini, Raditya Sukmana, and Sri Herianingrum, "The External and Internal Factors on Small and Medium Enterprise (SMEs) Financing in Islamic Bank" 98 (n.d.): 5.

Impulse Response Function (IRF)

Analysis uses the output impulse response function (IRF) and Variance decomposition (VD) in modeling. This analysis illustrates how the shock of a variable affects the variable itself and the effect of shock on other variables in the system. IRF shows how to estimate the impact of shock from a variable on other variables so that you can find out how long the effect of shock or shock of a variable with other variables is felt and which variable gives the greatest response to the shock

Table 8.
MSME Financing Response at BPRS

Shock Variable	ResponseLn_UMKM
Inflation	Negative, from $1^{st}$to 10th
Interest Rates	Negative, from $2^{nd}$to 7th ,positive,from 8^{th}to10^{th}
CAR	Positivefrom $1^{st}$to 10th
ROA	Positivefrom $1^{st}$to 10th=
ROE	Negativefrom $2^{nd}$and 4th, positive, from $5^{th}$to 10th
NPF	Positivefrom $2^{nd}$and 3rd, negativefrom 4^{th}to10^{th}
BOPO	Negative, all periodes
Exchange Rates	Negative, all periodes

Source: Data processed, 2019

Table 8 describes the standard deviation value of the MSME financing response (ln_UMKM) in the event of a shock to other variables. LN_UMKM responded negatively by 0.0009 percent in the second period to variable inflation shocks, meaning that the higher the inflation, the lower the financing provided to MSMEs. Likewise, interest rates also respond negatively in periods 1 to 7 of 0.00965, the higher the BI interest rate, the lower the financing provided by the public, while the positive response given in the 8th to 10th periods is 0.001431, this means that the 8th period of financing is conducted by BPRS is not influenced by interest rates.

The inflation variable has negative response up to the 7th period, the higher the inflation, the lower the financing provided, but in the 8th period inflation has positive response to financing or inflation does not affect MSME financing. ROA has positive response trend from period 2 to 10 so that the size or number of ROA will increase the number of BPRS or be able to provide financing. ROE also has a negative response in periods 2 to 4 where the equity in BPRS has not or little influence on financing, while in periods 5 to 10 the increased equity has an effect on the provision of financing by the BPRS. NPF has positive response at first but negative in the period 4 to 10, BOPO also has negative response, the more efficient management is carried out, the lower the financing provided, and the exchange rate has negative response where an increase in the value of the exchange rate affects the financing made by BPRS.

Forecast ErrorVariance Decomposition (FEVD)

Output of variance decomposition illustrates an estimate of how much variable contributes to changes in the variable itself and other variables in the future whose value is seen in percentage terms. In the first period, it shows there is fluctuation in the UMKM financing variable which is influenced by the LN_UMKM shock of 100%. In the second period, NPF affected MSME financing, although it did not contribute too much, namely 8.9%. Still in period 2, which contributed to MSMEs, namely NPF variables of 67.5%, Interest Rates of 25.7%, ROE at 24.9%, ROA at 12.3%, Inflation of 9% and Exchange Rates had an effect of 1%. It can be said that in period 2 the variable that influenced the most was NPF and the variable that had least influence was the exchange rate.

In the 10th period,variable affecting MSME financing was BOPO 65.3%, different from the second period, the most influential was NPF, then in the same period, apart from BOPO, ROA affected the largest financing after BOPO, namely 33.6%, NPF of 27.7%, Inflation at 25.8%, ROE at 18.3%, Interest Rate at 16.5%, Exchange Rate at 11.9%, CAR at 10.9%. Overall the results of the FEVD show that the variables used are inflation, CAR, ROA, ROE, NPF, OEOI and the exchange rate contributes which always increase each period except for the interest rate which decreases with each additional period. The results in the Variance Decomposition test show that BOPO and NPF have the greatest influence on MSME financing, according to the test results on VECM in the long term, this variable has an influence on the financing made by BPRS.

CONCLUSION

This paper analyzes factors affecting MSME financing at BPRS in Indonesia using VECM. The variables used are Inflation, Interest Rates, CAR, ROA, ROE, NPF, BOPO, Exchange rate. VECM results indicate short-term relationship in NPF to MSME financing, while in long term there is an effect of inflation, interest rates, NPF and BOPO. IRF test results show the response to MSME financing on each variable. In inflation variable responds to negative MSME financing, then interest rate response to MSME financing is negative in initial period and positive starting from period 8, positive response to MSME financing is shown by CAR and ROA, on the contrary negative response in all periods is shown in BOPO and Exchange Rates, meanwhile ROE variable responds negatively at the beginning to period 4 and starting from period 5 responds positively to MSME financing,NPF has positive response at beginning and negative in year 4.The contribution of the variable to MSME financing as a whole increases with increasing periods and increases in influence.Occurs at, exchange rate, CAR, ROA, ROE NPF, BOPO, exchange rate and interest rate variables continue to decline every period.

After seeing the test results, it would be nice to work together both the government, academics and the entire community to ground Islamic finance in accordance with their respective roles, where the government or responsible institutions work together so that scheme can be created that can increase MSME financing at BPRS in Indonesia, more MSMEs will grow and develop and have an impact on the country's economy. Future research could present other things from BPRS and UMKM such as efforts to increase the potential of BPRS and have an impact on increasing MSMEs.

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