DETERMINAN PENYALURAN KREDIT MIKRO: BUKTI EMPIRIS DARI BANK PERKREDITAN RAKYAT (BPR)

WHAT DRIVES MICROFINANCE CREDIT DISBURSEMENT? AN EMPIRICAL EVIDENCE FROM INDONESIA'S RURAL BANKS (BPRS)

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ABSTRAK

Studi ini menginvestigasi determinan penyaluran mikrokredit di Indonesia dengan menggunakan BPR sebagai unit analisis dengan pertimbangan fokus utama BPR adalah menyediakan layanan kredit bagi Usaha Mikro Kecil (UMK). Metodologi yang digunakan dalam studi ini adalah model *Autoregressive Distributed Lag* (ARDL) dengan menggunakan data bulanan dari Januari 2009 sampai dengan Januari 2016. Hasilnya mengindikasikan bahwa), baik dalam jangka panjang maupun jangka pendek, penyaluran kredit BPR lebih dipengaruhi oleh sisi permintaan (*demand side*), yang diproksikan dengan indeks produksi (*production index*), dibandingkan dengan sisi suplai (*supply side*). Dari sisi suplai, dalam jangka panjang, jumlah penyaluran kredit mikro dipengaruhi oleh dana yang diperoleh dari bank lain (*interbank fund*), sementara dalam jangka pendek dipengaruhi oleh dana pihak ketiga dari nasabah dan modal internal BPR. Sebagai tambahan, faktor lain yang berdampak terhadap penyaluran mikro kredit adalah indeks harga konsumen (IHK) dan *Non-Performing Loan* (NPL). Menariknya, dalam kasus kredit mikro, suku bunga tidak mempunyai pengaruh yang signifikan terhadap penyaluran kredit.

Kata Kunci: Kredit mikro, Usaha Mikro Kecil (UMK), BPR

Klasifikasi JEL: G21, E44

ABSTRACT

The paper investigates determinants of Indonesia's microfinance credit disbursement, case taken from Indonesia's rural banks (BPRs) which primarily focus on providing funding to the Micro and Small Enterprises (MSEs). The study applies Autoregressive Distributed Lag (ARDL) model by using monthly data over the period of January 2009 to January 2016. Result indicates that rural banks credit disbursement is more determined by demand side rather than supply side as variable representing demand side (production index) has significant effect to credit disbursement both long run and short run. In terms of supply side, the amount of credit disbursement is affected by interbank fund in the long run, whereas in the short run the significant variables are customer fund and internal fund. In addition, Consumer Price Index (CPI) and Non-Performing Loan (NPL) impose significant effect to the microfinance credit disbursement; yet, interestingly, interest rate is not a significant factor in microfinance's case.

*Keywords: microfinance, MSEs, credit disbursement determinants, rural banks, Indonesia, BPR*

JEL Classification: G21, E44

INTRODUCTION

In many developing countries, Micro and Small Enterprises (MSEs) have a crucial role to the economy as they have significant contribution to the national GDP and survived during the financial crisis 1997-98. Indonesia MSEs is not the exception. The former is indicated by the development of new firms and start-ups boosting economic growth while large firms were downsizing (Harvie, 2010). The reason for the latter was because: (1) product of SMEs were mostly needed by households meaning that their product demands were inelastic, and (2) raw material used for their production were mostly originated from domestics, therefore depreciation of nation's currency did not affect their production so much (Januar, 2015). Above all, it is strengthened by the facts that MSEs in Indonesia, by and large: (1) make up 99.9% from the total number of business/enterprises; (2) account 94.21% of employment; (3) contribute to almost half of GDP; (4) share 14-15% of direct total exports (Hadad, 2015; Rahman, 2004). In addition, MSEs have brought job opportunity for country's workforce as can be seen in Figure 1; their business expansions are scattered widely throughout rural areas even though they are financed mostly by personal/relative savings instead of obtaining funding from banks and other financial institutions (Tambunan, 2008).

During the period of post monetary crisis (1997-2000), data from Indonesia Statistics showed that the growth rate of number of MSEs in Indonesia was increasingly significant from -7.42% in 1997 to 4.94% in 2013. Such rapid growth of MSEs requires the demand of a conducive financial service particularly capital accumulation to fuel their business. However, majority of MSEs in Indonesia are hindered by financial access (Tambunan, 2009), showing merely 23.33% of 57.9 million Micro, Small, and Medium Enterprises (MSMEs) have been banking accessed (State Ministry of Cooperatives and SMEs, 2001). Furthermore, geographical barrier, the lack of knowledge and skills of financial management and innovation as sources of competitiveness are also noticed as the major impediment to MSEs to be bank accessed. Compared to other ASEAN countries, for example Malaysia, Singapura and Thailand, Indonesia MSEs is relatively lower in terms of knowledge, skills and innovation (Central Bank of Indonesia, 2016).

Generally, there are two types of bank in Indonesia i.e. Commercial Banks (BUs) and Rural Banks (BPRs). The former has been dominating credit disbursement in Indonesia that, in 2015 alone, BUs have contributed 98% of credit disbursement in Indonesia's banking credit composition (Financial Service Authority of Indonesia, 2016); only 2% were contributed
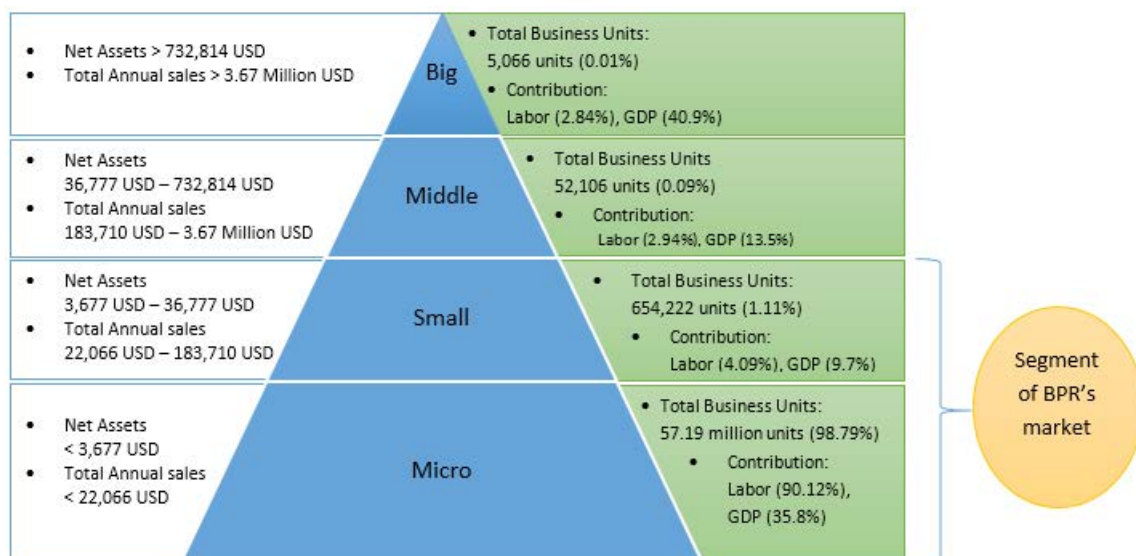
Source: Hadad (2015)

Figure 1. Enterprise composition in Indonesia Based on its Size Classification

by BPRs. Although BUs dominated credit disbursement in Indonesia, they still have many limitations particularly for MSEs. Majority of BU's credit portfolio were to fund medium and large enterprises, considering those enterprises are assumed to have lower risk than MSEs, while it is the opposite of BPR's credit portfolio that focuses on MSEs funding.

Furthermore, BPRs are also a subset of Indonesia's formal banking system which stated by The Banking Act of 1992. They are described as secondary banks that compared to BUs, BPRs have larger numbers of outlets outreaching districts and sub districts in most of Indonesia's provinces. Their markets and expertise are very segmented and specialized which by far has the largest potential i.e. MSEs as presented in Figure 1. This expertise makes a distinct characteristic which differ BPRs to BUs.

Moreover, BPRs have been channeling credit for more than 3 million debtors since 1900s and expanded fast as licensing restriction for BPRs' branches were lifted following the amendment of the banking act in 1998 in response to the financial crisis in 1997. Established to provide financial services to untapped market in rural areas, it seems clear that BPRs exclusively voice much more ease credit distribution to MSEs. An important financial survey done by International Finance Corporation to respondents of 20 BUs and 602 MSEs in large cities notes that BUs are most frequent in rejecting credit issued. BUs see these MSEs as very important and profitable but they are lack of instrument for managing risk. Therefore, most of loan portfolios of Indonesia's commercial banks are dominated by loans to large corporate clients, while MSEs are perceived high risks clients regardless the different characteristic of MSEs (Rosengard & Prasetyantoko, 2011).

Several papers have considered various aspects of BUs credit disbursement, but none of studies investigate determinants of BPRs credit disbursement with focus both on demand (estimated by production index) and supply sides. The empirical approach here is the Autoregressive Distributed Lag (ARDL) model using monthly data over the period of January 2009 to January 2016 obtained from Bank Indonesia (BI),

Indonesia Financial Service Authority (OJK), and Statistics Indonesia (BPS).

BPRs' Profile

BPR in Indonesian language is an abbreviation of *Bank Perkreditan Rakyat* which in English it literally means "people's credit bank" that regarded as microfinance institutions. They are specialized in supporting rural community development by offering micro-credit and providing micro-saving based on conventional or sharia principles. Organizational format of BPRs can be as Regional Government-owned Enterprises or limited liability companies (PTs). To that extent, they vary widely by size; its number reaches 1,637 units in 2015. The ownership of BPRs is private sector entities or stakeholders and no foreign ownership allowed, direct or indirect, including NGOs. BPRs are regulated and licensed by Central Bank of Indonesia that as consequence they obliged to submit monthly financial reports, quarterly budgets and progress reports against those budgets, semi-annual reports from Board of Commissioners, and an annual business plan and budget in order to maintain records in accordance with accepted financial accounting standards.

Table 1. Banking Products and Services of BUs and BPRs

	Products	
	Commercial Banks (BUs)	Rural Banks (BPRs)
Agent of Trust	- Gyro - Savings - Deposits	- Savings - Deposits
Agent of Services	Foreign exchange, insurance business,	×
Participating in payment flows	√	×
Agent of Development	Capital investment	Limited
Outreach	International and national	Local/regional

Source: Nurfachrizi (2015).

Table 1 shows that BPRs have fewer banking products compared to BUs, limited only credit, savings and term deposits. They are prohibited to participate in payments system, foreign exchange, capital investment, and insurance business. In

Table 2. BPRs Start-up Capital Requirement

Locations	Conventional BPRs
Zone 1: Jakarta	IDR 14 billion (USD 1 million)
Zone 2: Provincial capital in Java, Bali, and the districts/ municipalities of Bogor, Depok, Tangerang and Bekasi	IDR 8 billion (USD 600 thousands)
Zone 3: Provincial capital outside Java and Bali	IDR 6 million (USD 450 thousands)
Zone 4: Outside the area referred above	IDR 4 million (USD 300 thousands)

Note: USD 1 = IDR 13,381
Source: Otoritas Jasa Keuangan (2014)

addition, BPRs also face branching restriction that BPRs must have been financially sound over the past year, maintaining a capital adequacy of at least 10% and having current information technology.

As BPRs serve lower income clients, they do appear higher rate of NPL than BUs. However, the level of profitability, capital adequacy stability of funds and loan to deposit ratios (LDR) of BPRs are generally better than BUs. In addition, to ensure low entry costs into remote areas, the minimum capital requirement of BPRs varies significantly by location. The less economically the less competition of financial institutions of the area, the smaller amounts the start-up capital.

THEORY

Undoubtedly, evidence has proven that MSEs have substantial contribution to the Indonesia economy. However, their developments are often hampered by financing issue (Tambunan, 2009). Theoretically, Yokoi-Arai and Yoshino (2006) noted some reasons for such problem. They stated that although there are many of potential MSEs in terms of number, however, in most of developing countries there is a shortage between excess demand of funding and limited proper scheme and volume of funding to MSEs. Funding to MSEs cannot be channeled optimally because of adverse selection as a result of asymmetric information. In short, banks hesitate to fund MSEs as they are often seen as high risk clients. It is because banks are having difficulties in obtaining accurate and reliable information regarding high potential and low risk MSEs. Hence, even if banks do fund MSEs generally they charge higher interest rate to MSEs than to large enterprises as this is meant to offset high risk assumption of MSEs.

Furthermore, the choice of variables and methodology for this study adopts some of related studies as follows. Imran and Nishat (2011) identified determinants of credit growth in Pakistan using an Auto Regressive Distributed Lag (ARDL) with major focus on the supply side. They implemented ARDL method as by assumption all variables are integrated of order I(1) or fractionally co-integrated, and proceed analyzing the short run effects by applying ECM. Their findings show that a positive correlation of foreign liabilities, domestic deposit, real GDP, M2, Consumer Price Index (CPI), inflation and exchange rate to credit supply and a negative correlation with money market rate (MMR). Moreover, foreign liabilities, exchange rate, and M2 significantly affect credit disbursement in both long run and short run, whereas CPI remains no impact. MMR and inflation impose insignificant only in the long run, while domestic deposit does not significantly influence credit supply in the short run. All of findings are consistent with other studies excluding inflation which has a positive impact on credit supply and not significant in the long run. According to Stepanyan and Guo (2011) whom author utilizes their model as a baseline, higher inflation diminished the credit growth. Another recent study also found a negative and significant impact of inflation on credit supply in Ethiopia (Assefa, 2014). In summary, they concluded that as the bank increase its asset, the bank can lend more at domestic level.

Shijaku and Kalluci (2013), using Vector Error Correction Mechanism (VECM) evaluated cointegrating relationship between bank credit in Albania to private sector based on demand and supply indicators. The model is adopted from Égert, Backé, and Zumer (2006) with additional independent variables such as output gap and the real effective exchange rate (REER). On the

demand side, they use NPL, total deposits, lending and deposits rate and REER as independent variables. Whilst on the supply side, real GDP, CPI and interest rate are used as independent variables. They concluded that bank credit is more determined by demand side rather than supply side, for thus it is more sensitive to develop of financial intermediation in the long run. They also find that NPL affecting credit supply. The latter result is in line with Suryanto (2015) that examined NPL on 26 Regional Development Banks (BPD) in Indonesia over period 2009-2013 and finds that NPL significantly affect level of efficiency of banks, mortgage interest rate and bank liquidity.

Hamada (2016) investigated the determinants of excess capital among 118 Indonesian banks and its effects on credit growth during the 2000s. He applied two techniques for estimation: System Generalized Method of Moments (SGMM) and fixed-effect panel regressions. Using the 118 banks' semi-annual financial data from 1998 to 2009, the author estimates asset, NPL, return of equity (ROE) and GDP to growth of credit (dependent variable) and expects that bank capital influences loans. Results show that ROE negatively affects credit growth, whereas the effect of NPL is significant for only government banks. Asset and interest rate negatively influence credit growth, whereas GDP gives positive effect on government banks. The result concludes that in order to expand credit, banks have to be well-capitalized.

Tinoco-Zermeño, Venegas-Martinez, and Torres-Preciado (2014) evaluated the long run effects of inflation on bank credit and economic growth in Mexico over the period 1969-2011. Using ARDL cointegration model, authors expect to establish negative relationship between inflation and credit supply (Bittencourt, 2011; Boyd, Levine, & Smith, 2001; Choi, Smith, & Boyd, 1996; Huang, Lin, Kim, & Yeh, 2010; Talavera, Tsapin, & Zholud, 2012). These Findings meet its result expectation that credit growth is linked positively with real GDP but negatively with inflation rate. To extent, an increasing inflation by 1% decreases growth by 0.07%, associated with credit supply in the long run.

Onoja, Onu, and Ajodo-Ohiemi (2011) established determinants factors of credit supply to Nigerian agricultural sectors during the review period, pre- and post-financial reform (1978-1985 and 1986-2009) by using three models, linier multiple regression function, growth model (semi-log model) and Cobb Douglas (double log). Referring to a study conducted by Barran, Coudert, Mojon, and others (1995), author evaluated exchange rate, interest rate, CPI of agricultural products, share of agriculture in real GDP, volume of domestic credit to the private sector by banks, stock market capitalization, and previous period financial sector lending to agricultural sectors, represented by volume of loans guaranteed by the Agricultural Credit Guarantee Scheme Fund (ACGSF) as independent variables. Results show that market capitalization, interest rate and volume loans guaranteed by ACGSF are significantly affecting quantity of credit supplied over the period of review. They suggest that interest rate at affordable levels needs to take for granted for making credit accessible to farmers.

Akinlo and Oni (2015) examined determinants of credit growth in Nigeria over period 1980-2010 using a time series approach and find that a positive correlation of money supply, cyclical risk premium and liquidity ratio to credit supply and a negative correlation with reserve ratio and prime lending rate. Most of results are consistent with referred previous findings except liquidity ratio which has no adverse effect on credit growth. Authors conclude that low inflation can boost credit growth. In conclusion, the established determinants of credit disbursement and its expected signs can be summed up as table follows.

Table 3. Summary of Credit Disbursement's Determinants

Indicators	Expected Sign
Savings	+
Deposits	+
Loan Received	+
Interbank Liabilities	+
Immediate Liabilities	+
Bank's Capital and Reserves	+
Production Index	+
Inflation	−
Exchange Rate	−
Interest Rate of Loans	−
NPL	−

METHODOLOGY

This study uses monthly data within the period of January 2009 to January 2016 obtained from Central Bank of Indonesia (BI) and Statistics Indonesia (BPS). Furthermore, the model implemented in this study is as follows:

$$LnCR_t = \beta_0 + \beta_1 LnCF_t + \beta_2 LnIF_t + \beta_3 LnOF_t + \beta_4 LnPI_t + \beta_5 IR_t + \beta_6 NPL_t + \beta_7 LnCPI_t \quad (1)$$
$$+ \beta_8 LnER_t + \mu_t$$

Where (i) *Ln* is natural logarithm form (ii) *CR* is credit disbursement of BPRs, (iii) *CF* is customer fund; source of fund collected from customer consisting of deposits and savings, (iv) *IF* is interbank fund; source of fund obtained from other banks consisting of loans received, interbank liabilities, and immediate liabilities, (v) *OF* stands for own fund; source of fund originated from the internal bank itself which consists of capital and reserves, (vi) *PI* is production index, (vii) *IR* is monthly interest rate set by Central Bank of Indonesia, (viii) NPL is percentage of non-performing loan as a proxy of credit risk, (ix) *CPI* is consumer price index, (x) *ER* is exchange rate; nominal value of 1 USD per Indonesian Rupiah (IDR).

Furthermore, customer fund, internal fund, and own fund are to represent supply side, whereas production index is a proxy for demand side with the assumption that a higher production index caused by higher production from MSEs considering that MSEs account for 99.9% of number of Indonesian enterprise and they may need funding in order to expand their businesses. In addition, interest rate, CPI, and exchange rate are as a control for external factor.

Prior to determining the methodology to investigate determinants of rural bank credit disbursement, considering the data set is time series, firstly, this study applies unit root test to identify the stationary level of each variable in order to determine the robust method. Moreover, below are results of Unit Root Test using Augmented Dicky Fuller with a constant and trend.

Table 4. Unit Root Test Result

Variables	t-statistic		Order of Integration
	Level	First Difference	
LnCR	-0.030(1)	-6.469(0)***	I(1)
LnCF	-1.406(0)	-8.097(0)***	I(1)
LnIF	-2.018(0)	-8.257(0)***	I(1)
LnOF	-2.341(1)	-7.879(0)***	I(1)
LnPI	-6.891(0)***	-9.668(0)***	I(0)
IR	-2.143(0)	-8.578(0)***	I(1)
NPL	-1.447(2)	-11.685(1)***	I(1)
LnCPI	-2.751(2)	-8.533(1)***	I(1)
LnER	-2.406(0)	-7.557(0)***	I(1)

notes: (i) critical values with trend and intercept at 1%, 5%, and 10% are -4.072, -3.465, and -3.159 respectively, and value t-statistic that lower than critical values indicates the variable is stationer **(ii)** automatic lag selection is set to maximum of 4 lags, and figure in ( ) indicates optimum lag length by using Schwarz information criterion, **(iii)** ** indicates it is significant at 5 % level, *** indicates it is significant at 1% level.

Table 4 shows that all of variables are stationer either at I(0) or at I(1). Therefore, Autoregressive Distributed Lag (ARDL) is chosen as the methodology to investigate determinants of BPRs' credit disbursement as Pesaran (2001) stated that ARDL can be used for set of variables with different order of stationary as long as it does not exceed first difference level of stationary, whereas Johansen's cointegration only allows same difference order. Other than that, ARDL also has some advantages: (1) It already settles endogeneity issues, hence, it is not a problem even though the independent variables are endogenous (Pesaran, M. H., Shin, 1999; Pesaran, Shin, & Smith, 2001), (2) It is able to determine cointegration of small sample cases (Tang, 2003), (3) ARDL captures both long run and short run coefficients through its bound test and conditional unrestricted error correction model (UECM), and (4) It allows independent variables to have different number of lags.

First step is to identify the long run relationship by estimating the following ARDL representation of equation:

Where Δ is first difference of related variables, $\alpha 0$ is intercept, *p* is optimal lag length, and μt is white noise residuals.

Furthermore, the bound test under Pesaran et al. (2001) is used to investigate the presence of long run relationship between dependent variable and joint independent variables. The bound test

$$\Delta LnCR_t = \alpha_0 + \sum_{i=1}^{p} \delta_i \Delta LnCF_{t-i} + \sum_{i=1}^{p} \lambda_i \Delta LnIF_{t-i} + \sum_{i=1}^{p} \varphi_i \Delta LnOF_{t-i} + \sum_{i=1}^{p} \sigma_i \Delta LnPI_{t-i}$$
$$+ \sum_{i=1}^{p} \phi_i \Delta LnIR_{t-i} + \sum_{i=1}^{p} \omega_i \Delta NPL_{t-i} + \sum_{i=1}^{p} \rho_i \Delta CPI_{t-i} + \sum_{i=1}^{p} \Upsilon_i LnER_{t-i} \quad (2)$$
$$+ \beta_1 LnCR_{t-1} + \beta_2 LnCF_{t-1} + \beta_3 LnIF_{t-1} + \beta_4 LnOF_{t-1} + \beta_5 LnPI_{t-1} + \beta_6 LnIR_{t-1}$$
$$+ \beta_7 NPL_{t-1} + \beta_8 LnCPI_{t-1} + \beta_9 LnER_{t-1} + \mu_t$$

$$\Delta LnCR_t = \alpha_0 + \sum_{i=1}^{p} \beta_1 \Delta LnCR_{t-i} + \sum_{i=1}^{p} \beta_2 \Delta LnCF_{t-i} + \sum_{i=1}^{p} \beta_3 \Delta LnIF_{t-i} + \sum_{i=1}^{p} \beta_4 \Delta LnOF_{t-i}$$
$$+ \sum_{i=1}^{p} \beta_5 \Delta LnPI_{t-i} + \sum_{i=1}^{p} \beta_6 \Delta IR_{t-i} + \sum_{i=1}^{p} \beta_7 \Delta NPL_{t-i} + \sum_{i=1}^{p} \beta_7 \Delta LnCPI_{t-i} \quad (4)$$
$$+ \sum_{i=1}^{p} \beta_8 LnER_{t-i} + \lambda EC_{t-1} + \mu_t$$

is basically based on F-test method. The null and alternative hypotheses are as follows:

H0: $\beta1 = \beta2 = \beta3 = \beta4 = \beta5 = \beta6 = \beta7 = \beta8 = \beta9 = 0$, i.e. no presence of long run relationship; (3)

H1: $\beta1 \neq \beta2 \neq \beta3 \neq \beta4 \neq \beta5 \neq \beta6 \neq \beta7 \neq \beta8 \neq \beta9 \neq 0$, i.e. there is a long run relationship between dependent variable and joint independent variables.

In addition, the ARDL bound test applies Wald-test (F-statistic). Pesaran et al. (2001) provided two critical values which are I(0) or lower critical bound and I(1) or upper bound. The first assumes that there is no cointegration or long run relationship between dependent variable and joint independent variables, whereas the latter assumes otherwise. In short, if the F-statistic value exceeds I(1) or upper bound then it can be said that there are long relationship among variables, it will mean otherwise if the F-statistic value is below I(0), whereas the F-test that has a value in between I(0) and I(1) cannot be concluded.

The next step is to investigate short run elasticity between dependent variable and independent variables. This is implemented by running ARDL Error Correction Model from equation (2) expressed as follows:

Where λ is the speed of adjustment parameter, and EC is residuals estimated form cointegration model of equation (2).

RESULTS AND ANALYSIS

Firstly, in order to examine the presence of long run relationships of joint variables we look into the result of ARDL bound testing procedure as reported in Table 5.

Table 5. Bound Test Result

F-statistic value	Critical value of 5% significance level	
	Lower bound or I(0)	Upper bound or I(1)
5.653	2.55	3.68

Table 5 reveals that the F-statistic value exceeds critical value of upper bound which means that there is a cointegration among the joint variables. In other words, there is a long-run relationship among the joint variables. Secondly, by running ARDL estimation from the equation (2) and (4) we can get both long run and short run estimation result as reported in Table 6.

Table 6 presents both long run and short run estimation. In terms of the long run, from the supply side only source of fund from other banks that is significant at 10% level impacting the amount of credit disbursement, whereas fund from customers and internal (capital and reserves) are not significant in the long run. Furthermore, it can be considered that demand side, represented

Table 6. ARDL Estimation

Dependent Variable: LnCD									
Section A: long run coeffiecients estimation									
Constant	LnCF	LnIF	LnOF	LnPI	IR	NPL	LnCPI	LnER	
1.2819 (4.7687)	0.3804 (0.299)	0.1004* (0.059)	-0.0578 (0.204)	0.2885*** (0.108)	-0.0018 (0.004)	-0.0570*** (0.013)	0.9603** (0.441)	-0.0659 (0.082)	
Section B: short run coeffiecients estimation									
Lag order	ΔLnCR	ΔLnCF	ΔLnIF	ΔLnOF	ΔLnPI	ΔIR	ΔNPL	ΔLnCPI	ΔLnER	EC
0	-	-0.2583*** (0.089)	0.0501 (0.038)	-0.1448* (0.080)	0.0707*** (0.020)	0.0006 (0.512)	0.0011 (0.003)	0.3409** (0.130)	-0.0161 (0.021)	-
1	0.1407 (0.115)	0.2028* (0.114)	0.0448 (0.044)	0.1015 (0.105)	-	-0.0014 (0.001)	0.0192*** (0.004)	-0.0659 (0.209)	-	-0.2449*** (0.070)
2	0.1628** (0.077)	0.0018 (0.084)	-0.0232 (0.034)	0.1752** (0.071)	-	-	-	-0.1776 (0.137)	-	-
3	-	-0.1805** (0.070)	-0.0527* (0.028)	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-

Note: (i) *, **, *** indicates it is significant at 10%, 5%, and 1 % level respectively, (ii) Number of lag determined automatically using Akaike Info Criterion (AIC) with maximum number of lags is set to 4 lags.

by production index, has more impact to amount of credit disbursement compared to the supply side. We could say so by taking into account that variable of production index is significant at 1% level, in fact, it also has higher coefficient value (0.2885) than interbank funds has (0.1004). The coefficient value of production index implies that 1% increase of production index is likely to increase amount of credit disbursement by 0.3%, whereas the figure for interbank fund is only 0.1%.

Moreover, the significant effect of CPI as a proxy for inflation to credit disbursement is likely related to production index. Higher production index is assumed caused by higher demand that resulting MSEs and large enterprises produce more goods, and higher demand will be followed by inflation. This condition will make MSEs, which is the largest number of type of enterprises in Indonesia, require more fund in order to fulfill their demand and increase their productivity. In addition, the ratio of NPL is also one of variable that drives the amount of credit disbursement significantly, which is in-line with the theory and most of other empirical research findings. The 1% hike of NPL is likely to decrease amount of credit supply by 0.06%.

In addition, the result also shows that exchange rate does not have significant impact on credit disbursement which means that even though there is a considerable depreciation of national currency, demand of credit is still unaffected.

Since the majority of BPR's debtors are MSEs, this implies that business of MSEs in Indonesia is still productive in financial crisis condition. This result is also supported by findings of some researches (Berry, Rodriguez, & Sandee, 2001; Mourougane, 2012; Sato, 2000; Tambunan, 2010; Ter Wengel & Rodriguez, 2006) stated that MSEs are resistant to Indonesian financial crisis of 1997-1998 when in that period there was a massive depreciation of Indonesian Rupiah which peaked to about 70% of IDR nominal value depreciation.

Another noticeable finding is that micro financing in Indonesia has unique characteristic, the demand of credit if we relate it to interest rate, is inelastic as we can see from the table 6 that interest rate does not affect the amount of BPR's credit disbursement which is in accordance with the finding of Arwin (2015). This is also supported by statement of Susilo (2015) implying that MSEs are not taking interest rate as the first consideration in proposing credit, they concern more about the easiness of getting credit and the time needed to obtain the money.

Regarding the short run estimation, the result is quite similar to the long run estimations with the outcome that from the demand side, external factor side, and credit risk aspect, respectively production index, consumer price index, and non-performing loan are significant in determining the amount of BPR's credit disbursement. The difference is that from the supply side instead of

only interbank fund which has significant impact to credit disbursement, the variable of consumer fund and own fun are also have significant effect with the largest effect originating from customer fund. However, in the lag of order 0 the coefficient sign of customer fund is negative, it is likely because fund obtained from customers is spend on the following month as seen the coefficient sign of customer fund of 1 lag order is positive with the value of 0.20 meaning that 1% increase in the previous month of customer fund is expected to increase current month BPR's amount of credit disbursement by 0.2%.

CONCLUSION AND POLICY RECOMMENDATIONS

Our estimation results show that variable which is consistently significant both in long run and short run is from demand side (production index). From the supply side the driving factors from the supply side is quite different; In the long run, credit disbursement of BPRs increases with interbank fund whereas in the short run variables from supply side that matters are customer fund and internal fund (capital and reserves). In addition, CPI and NPL are also imposing significant impact on credit disbursement in both long run and short run. Intriguingly that differs from the theory, in case of BPRs, interest rate does not significantly influence on credit supply in both long run and short run.

In general, considering that both in the short run and the long run variable representing demand side aspect is crucial in driving the amount of BPR's credit disbursement, hence, government should set up a business environment that is in favor of and friendly for MSEs such as improving easiness for MSEs to do a business, accelerating infrastructure development in order to increase efficiency, and other policies. Secondly, it is also important for the authorities (particularly Indonesia Financial Services Authority and Bank Central of Indonesia) to develop specific policies in order to boost BPR's credit disbursement. In terms of long run, since the only significant variable from supply side is the interbank funds, and considering one of the most factor hindered BPR is it limitation on source of fund availability[1].

[1] This finding is in accordance with the World Bank (2010)

Therefore, government should create or alter policies enabling to promote BPR's funding through linkage scheme between BPR and large BUs. Such scheme is proven mutually beneficial for both actors[2] filling the gap between their strength and weaknesses. On the one side, BUs generally have better capital adequacy, and according to the Bank Indonesia Regulation No.17/12/PBI/2015 they are obliged to provide credit for MSMEs at the minimal ratio of 10%, 15%, and 20% from the total credit that should be achieved by 2016, 2017, and, 2018 respectively. However, except for Bank Rakyat Indonesia (BRI) they are not the expert in handling micro credit since it needs persistent and intense control, monitoring, and different personal approach depends on debtors' cultures and business sector characteristics. Therefore, it requires high overhead cost per credit since it needs more time and human resources. On the other side, BPR whom they specialization is on this type of credit, they have more experiences and strategies in handling micro financing yet they are generally have an issue in capital availability. Through the linkage scheme, the lack of fund problem faced by BPR could be filled by BUs strong capital, on the other hand, the idle money owned by BUs can be more productive by channeling it to BPRs to be distributed to MSEs, in whom BPRs has expertise in dealing with microfinance. Furthermore, currently there are three types of linkage scheme: (1) execution scheme; BUs handing out money to BPR to be forwarded to debtors, (2) channeling scheme; loan is given by BUs through BPRs with notes that BPR only act as an agent and could not terminating credit contract without permission from BUs, (3) joint financing scheme; lending fund originates both from BUs and BPRs, they also share credit risk together in accordance to their portion of fund.

Moreover, based on short run estimation result showing that the highest impact of variable in determining the amount of BPR's credit

showing that compared to BUs, BPRs have fewer sources of funding, e.g. they are not allowed to borrow from capital markets or from off-shore; they aren't publicly listed; and they can't accept demand deposits

[2] According to statement from Head of Union of Indonesian Bank Perkreditan Rakyat (Perbarindo) in a focus group discussion between Economic Research Center, LIPI and banks providing microfinance credit on April 7, 2016

disbursement is customer fund, hence, it is better for the authorities implement some specific actions to increase amount of customer fund (savings and deposits). These actions could be: (1) Currently, only one BPR group (BPR Karyajatnika Sadaya) in Indonesia included in the list of largest integrated ATM networks in Indonesia called *ATM Bersama*[3]. If government is able to help other BPRs join *ATM Bersama* network, it could be a notable feature for them to attract savings and deposits from customer considering BPR has an advantage over conventional banks with their higher rates of deposits and savings; (2) BPR abbreviation that literally means people's credit bank, which psychologically it generates stigma in people's mind that if they need credit they go to BPR, but if they want to save they come to conventional banks[2]. Therefore, the authorities should consider accepting a proposal form Perbarindo intending to change BPR's name or abbreviation in order to alter that stigma.

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[3] ATM Bersama is the largest shared ATM network in Indonesia integrating more than 80 banks in Indonesia and some other ATM networks in ASEAN. It provides some interbank financial facilities e.g. balance inquiry, cash withdrawal, and real time-online transfer to other accounts of participating banks.

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