

The Nexus Between Bank Credit Development and Economic Growth in Indonesia

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The issue about the causal relationship between economic growth and credit market development is very important, particularly in a big emerging economy such as Indonesia, which has implemented various financial reforms following East Asian Financial Crisis in 1997. Efficient credit allocation in the banking sector will distribute the credit to the productive sector and, thus, promote economic growth. Meanwhile, development in the business sector will also increase demand for credit, encouraging credit market development. Given this rationale, this study aims at finding the significance of the linkage between economic growth and credit market development in Indonesia by investigating their long-run causality relationship over the period of 1985-2011. The empirical result presented in this paper suggests that there is a bidirectional relationship between economic growth and credit market development in Indonesia. In addition, it also indicates that lending rate positively affects the development of the credit market in Indonesia.

JEL Classifications: C32, E44, E51

Keywords: Credit Market, Lending Rate, Economic Growth, Vector Error Correction Model, Financial Economics

Rapid development in the financial market has drawn the attention of economists and finance analysts, particularly since the last couple of decades. Nevertheless, the causal relationship between financial market development and economic growth is still a debated point in the empirical literature. In the financial system, financial intermediaries distribute credit in order to match the surplus and deficit sectors in the economy. Therefore, a well-functioning credit intermediation system diminishes the external financing constraints, which hinders credit market

development as well as expansion of firms and industries (Mishkin, 2007).

A fundamental issue that prevails in the financial economics literature is whether there exists a significant effect of financial development (development in credit market is generally used as a proxy) on economic growth. The literature on financial economics shows that causality between economic growth and credit market development may run in various directions, depending on the economic perspective at macro level (Dişbudak, 2010). In one hand, a more developed credit

market ameliorates resource allocation efficiency and thus promotes rapid economic growth, while, on the other hand, economic growth stimulates financial development through credit market expansion (Mishra, Das, & Pradhan, 2009).

In Indonesia, credit market has been recovering progressively after the credit bubble burst that occurred during the 1997 East Asian Financial Crisis. This recovery was facilitated by a reform in the banking sector. Moreover, the central bank, Bank Indonesia, was also given an independent authority to supervise the banking sector in order to ensure efficient credit allocation. Due to the reviving credit market and the growing importance of the financial sector in the country, considering its potentials to influence the overall Indonesia's economy, it is necessary to examine the relationship between the financial sector and economic growth in Indonesia. By examining this relationship, this paper aims at finding whether the financial sector actually affects Indonesia's economic growth or vice versa or if it works both ways.

In short, since empirical evidence has not provided a satisfactory answer regarding the relationship between credit market development and economic growth, further studies are still required. Moreover, given the background of this study, this paper attempts to contribute to the literature on the relationship and causality between financial development and economic growth in Indonesia for the period between 1985-2011. The rest of the paper is organised as follows: Section 2 discusses the credit market development in Indonesia; Section 3 reviews empirical literature regarding the finance-growth nexus; Section 4 provides data collection and research methodology; Section 5 analyses the empirical results; and Section 6 concludes the paper.

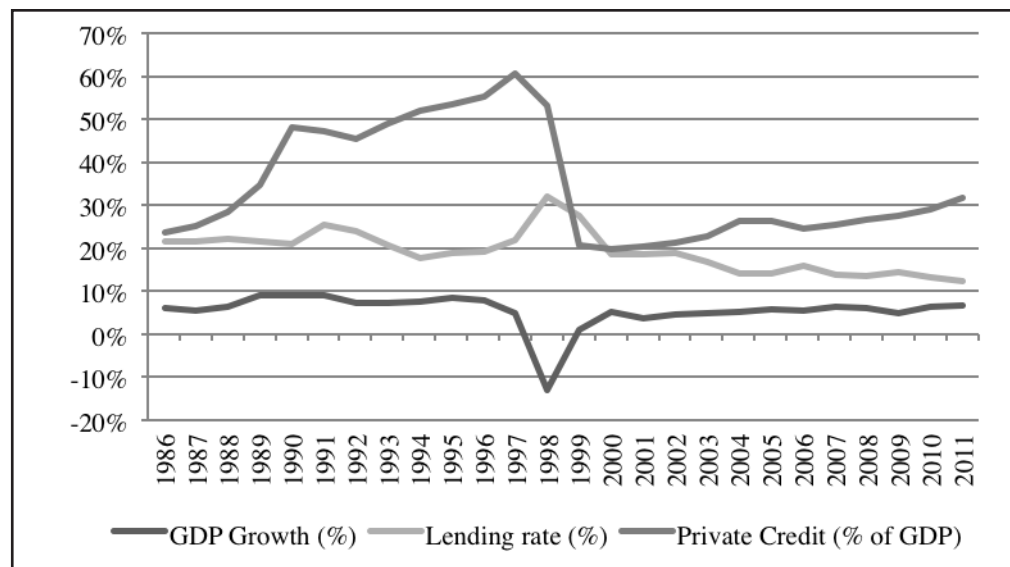
BANK CREDIT AND ECONOMIC GROWTH IN INDONESIA

Credit market in Indonesia has experienced several significant changes in the last few decades,

particularly after the occurrence of the 1997 East Asian Financial Crisis. Prior to the crisis, particularly during late 1980s and early 1990s, credit market in Indonesia had been growing rapidly. This rapid credit market development was triggered by financial deregulations the government implemented in the late 1980s, which was intended to enlarge credit expansion. Deregulations allowed new banking licence issuance that had been stopped since 1971. This move managed to increase credit growth until early 1990s (see Figure 1). In this regard, the government expected that rapid credit expansion through deregulations could increase economic growth that had been experiencing stagnation in the previous years.

Despite rapid credit expansion, there was no adequate financial infrastructure to supervise this financial liberalization (Roesad, 2000). The lack of financial infrastructure was reflected by the weak government supervision of the financial system. For example, before the crisis, many corporate groups established small banks to fulfill their own group's necessities. Nevertheless, credits provided by these banks lacked proper credit examination since a huge portion of the credits were distributed to finance non-productive companies within the group. In consequence, credits were channelled inefficiently since many banks and other financial institutions did not act as proper financial intermediaries. In addition, the number of non-performing loans also rose substantially due to the unhealthy banking structure.

When the East Asian Financial Crisis struck in 1997, banking industry in Indonesia was really vulnerable to the crisis. Over-financing that prevailed in late 1980s and early 1990s led to liquidity problem following the failing inter-bank money market. In order to avoid systemic risk and maintain banking sector stability, Bank Indonesia increased interest rate significantly in 1998 and acted as a blanket guarantee by pledging local banks' savings and deposits. Instead of successfully overcoming the problem, high interest rate elevated lending cost that resulted



Source: World Bank (2012)

Figure 1. Economic growth and credit market development in Indonesia.

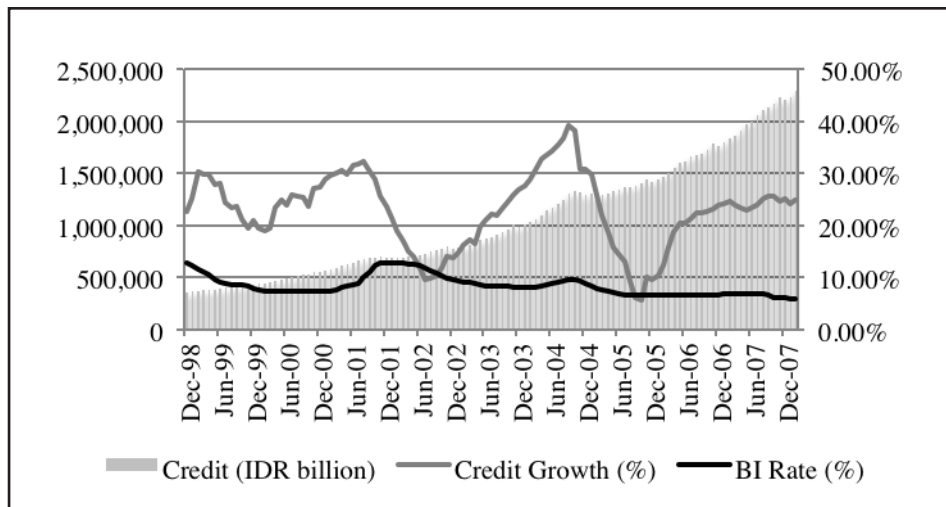
in worsened liquidity problem. Moreover, the blanket guarantee also raised moral hazard problems and panicking in the public (Enoch, Baldwin, Frécaut, & Kovanen, 2001). As a consequence, expensive lending cost, undermined further by massive bank run, plummeted the banking sector. Figure 1 shows this banking mayhem as the share of private credit in terms of GDP shrunk significantly along with the rising lending rate from 1997 to 1999.

To prevent the banking industry from further turmoil, Bank Indonesia provided Bank Indonesia Liquidity Assistance (BLBI). It prepared 144.5 trillion rupiah as bailout fund to assist unhealthy banks. Moreover, it also established Indonesian Banking Restructuring Agency (IBRA), which was tasked to supervise, manage, and restructure problematic banks as well as administer the government's blanket guarantee programme. In undertaking its tasks, it took over seven suspended banks to carry out bank restructuring and risk management in order to restore the healthiness of banking industry.

Subsequent to the crisis, the government tried to recover from the crisis by implementing economic reforms. In 1999, Bank Indonesia

was given independence to achieve monetary stability. Further, it reformed Indonesia's financial system to achieve monetary and financial stability. One of the ways implemented was to increase banking supervision in order to prevent credit misallocation that used to happen before the crisis. In addition, Bank Indonesia also periodically monitors the effectiveness of monetary policy transmission towards the real sectors via several channels, including via credit channel and interest rate channel (Bank Indonesia, 2007).

Since 2000, as the economy started to recover from the crisis, financial sector in Indonesia began to grow again. Simultaneously, the government and Bank Indonesia continued its financial reform by implementing various actions such as recapitalization, improvement in national banking structure, strengthening of financial infrastructure, financial intermediary maximization, and good corporate governance in the banking sector (Bank Indonesia, 2007). One of the objectives of this reform was to redevelop the credit market through efficient credit channel to the productive sectors that had been halted during the crisis due to liquidity problem.



Source: Bank Indonesia (2012)

Figure 2. Recent credit market development in Indonesia

In the following years, improved financial stability with relatively lower BI rate (the benchmark interest rate) led to sustainable credit market recovery (see Figure 2). Nevertheless, despite the revival in the credit market, successful banking reform caused the credit market development to be tightly controlled in order to prevent another credit bubble and liquidity crisis. Moreover, most of the credits were allocated to the productive sectors, which brought benefit to the economic growth. Table 1 shows that between 2005 and 2011, credits were channelled to non-consumption sectors, such as manufacturing and services sectors. Consequently, the financial sector in Indonesia managed to prove its resilience in facing external shocks during the 2008 Global Financial Crisis.

In 2012, Bank Indonesia implemented another regulation regarding credit control by lowering loan to value (LTV) level in the finance industry for mortgages and down payments on motor vehicle loans. This is to prevent credit bubble, reduce the number of non-performing loans, and prevent the finance industry from suffering overheating finance-led consumptions.

In short, looking at the dynamism of the credit market in Indonesia, it is important to investigate

the causality between credit market development and economic growth in the country. As previously shown, private credit as a percentage of GDP can be a useful proxy for credit market development since it represents more accurate data in terms of the role of financial intermediaries in channelling funds to the private sectors (Levine, Loayza, & Beck, 2000). The next section reviews the literature regarding the relationship between financial market development, which includes that of credit market and economic growth.

LITERATURE REVIEW

The relationship between economic growth and development in the financial sector has been extensively examined by many authors since the last few decades. One of the earliest studies was conducted by Schumpeter (1911/year1934). His paper suggested that financial development triggers economic growth since banks and other financial institutions act as financial intermediaries in the financial system. One of the methods is through channeling savings to firms and entrepreneurs that offer lucrative investment projects, which will affect economic growth

Table 1.
Credit by Type of Borrowers (%)

Type of Borrowers	2005	2006	2007	2008	2009	2010	2011
Agriculture, Farming, Forestry and Fishery	5%	5%	6%	5%	5%	5%	5%
Mining	1%	1%	2%	2%	2%	3%	4%
Manufacture	25%	23%	22%	20%	19%	16%	15%
Electricity, Gas and Drinking Water	1%	1%	1%	1%	2%	2%	2%
Construction	4%	4%	4%	5%	5%	4%	4%
Trading, Hospitality and Restaurant	19%	20%	21%	20%	20%	20%	18%
Transportation and Communication	3%	3%	3%	4%	5%	5%	4%
Finance, Property and Consulting	10%	10%	11%	11%	11%	8%	8%
Other Services	1%	1%	1%	1%	1%	7%	8%
Consumption	30%	30%	30%	29%	30%	32%	31%
Total Credit Allocation	100%	100%	100%	100%	100%	100%	100%

Source: Bank Indonesia (2012)

positively. By extension, this view is supported by King and Levine (1993), who argued that efficient credit allocation enables technological innovation and, thus, triggers economic growth.

On the other hand, McKinnon (1973) and Shaw (1973) also investigated the link between financial development and economic growth by focusing on capital accumulation. Both authors argued that increased savings can be distributed in order to accumulate capital formation. This perspective is also shared by Goldsmith (1969), who argued that the size of financial system is associated with the quantity and quality of financial institutions. He further argued that development in the financial system is positively correlated with economic growth. Greenwood and Jovanovic (1990) also investigated the link between economic growth and financial structure. They argued that the relationship between the two is inseparable since growth can provide capital to develop financial structure, while financial structure in turn allows for higher economic growth through efficient credit allocation.

Some of the more recent studies also find a positive link between economic growth and financial sector development. For instance, Demirguc-Kunt and Levine (2008) reviewed a variety of analytical methods used in the

finance literature and concluded that countries with a better-developed financial system have a tendency to have more rapid economic growth. A study by Diego (2003) confirmed the argument by investigating the link between financial development and economic growth using panel estimation in 15 European Union economies. He further argued that the relationship between the two can be established through the rise in the private credit as a share of GDP and improvement in the quality of the financial intermediation process. Moreover, Unalmis (2002) also suggested that there is a multidirectional causality between economic growth and financial deepening by searching for a cointegrating relationship between financial development and economic growth in Turkey over the period of 1963-1995.

Beck and Levine (2004) used a panel of 40 countries with averaged data over 5-year periods between 1986-1998. The study showed that financial development indicators, including financial markets and banks, are jointly significant in explaining economic growth. Nevertheless, a closer look showed that these financial indicators were not individually significant in promoting economic growth. Finally, the study concluded that, while overall financial development matters for growth, it is difficult to identify the particular

financial institutions associated with economic growth.

A study by Mishra et al. (2009) has found out that there is little evidence in support of the fact that credit market development promotes economic growth in India. Nevertheless, the study, which used annual time series data for the period of 1980-2009, also suggested that there is an unidirectional positive effect of economic growth on credit market development. Vazakidis and Adamopoulos (2009) investigated the relationship between credit market development in Italy between 1965-2007. The result of the study showed that economic growth has a direct positive impact on credit market development, while the impact of inflation on credit market development is negative.

A number of literature accept the positive relationship between the development in financial system and economic performance. However, several studies deny the existence of the relationship. For example, Dişbudak (2010) argued that financial development can also retard economic growth. He asserted that since financial development is generally related to an increased availability of credit for consumption, savings can be averted as more credit becomes available, especially credit for consumption. As the consequence, credit is not channeled to finance productive sectors, which may hamper economic growth. This opinion is supported by Ho (2002), who examined the role of financial intermediaries in stimulating economic growth in Macao. The study revealed weak evidence regarding the contribution of financial sector in underpinning economic growth in Macao since savings collected by financial intermediaries were channeled to non-productive sectors.

Meanwhile, Loayza and Ranciere (2006) investigated that there is a negative and significant impact of banking credit development on economic growth in the short run but also argued that the impact becomes positive and significant in the long run. The reason is because, while financial development promotes economic growth in the short run, the path to development is not

smooth since it can suffer from financial fragility along with the maturing systems. On the other hand, Dişbudak (2010) analyzed whether bank credit fosters economic growth in Turkey between the periods of 1961-2008. The investigation showed that bank credit development can promote economic growth if there is no “over-financialization”, which may hamper economic growth due to unproductive profit-seeking activities carried out by financial intermediaries. Saci, Giorgioni, and Holden (2009) examined the role of financial variables, including both banking sector and stock market effects, in determining economic growth by focusing on developing economies dataset. The estimation results showed that banking variables such as credit to the private sector and liquid liabilities are negatively correlated with growth.

The mixed results regarding the relationship between financial sector development and economic growth can be deduced from estimation technique and data collection, particularly between cross-country studies and time series studies (Dişbudak, 2010). In this regard, Bloch and Tang (2003) explained that cross-country studies take averages of the key variables over lengthy periods, while time series studies consider the evolution of key variables and their interaction overtime. They further argued that cross-country studies do not consider the weight characteristics of the examined economies since they are assumed to be homogenous and have a stable growth path. Finally, the causal relationship observed in a large sample of countries in cross-country studies is also questioned since it only represents an average relationship instead of individual relationship.

Overall, this review infers that the empirical literature regarding the connection between the development of financial sector and economic growth is still thin, particularly studies that cover Indonesia's economy. Additionally, most of the surveyed literature has not covered the period of the most recent global financial crisis. Therefore, this paper attempts to fill the gap in the literature by examining the link between the development of financial sector and economic growth in

Indonesia, which capture the effects of the 1997 East Asian Financial Crisis and the most recent Global Financial Crisis.

METHODOLOGY

As mentioned earlier, the main objective of this paper is to examine the causal relationship between bank credit and economic growth in Indonesia. Thus, this paper employs the ratio of private credit to nominal GDP (BCR) and real GDP growth (GDPGR) to represent credit market development and economic performance in Indonesia, respectively. In addition, Lucas (1988) stated that in order to avoid biasness in the estimation in bivariate model due to possible omission of variables, this paper adds another financial indicator, lending rate (LRATE), to control for the possible effects of other determinants of growth. High lending rate makes financing more expensive and reduces investment in productive enterprise, thus causing adverse impact on economic growth. This paper obtains annual data from World Bank's World Development Indicator (WDI) database between 1985 and 2011.

Due to the time series approach of this study, it is necessary to investigate the time series property of the data. First, this paper investigates the stationarity of each time series variable by implementing unit root test. If the time series variables are stationary in their first differences, then they are integrated in order 1, that is, I(1). In this case, a simple OLS (Ordinary Least Square) method cannot be conducted since it leads to spurious results (Granger & Newbold, 1974). Thus, the second step of the methodology is to conduct cointegration test to overcome misleading inferences. Finally, Granger-Causality is conducted in order to investigate the causality direction between the variables. The details of this methodology is as follows:

Unit Root Test

This paper checks the stationarity of each time series variable by employing the Augmented

Dickey-Fuller test for unit root as proposed by Dickey and Fuller (1981). The estimation yields the following regression model:

$$\Delta Y_t = \alpha_0 + \beta Y_{t-1} + \sum_{i=1}^p \delta_i \Delta Y_{t-i} + \varepsilon_t \quad (1)$$

Where ΔY_t is the first differences of Y_t , α_0 is the intercept, β is the coefficient of the lagged term, p is the number of lagged terms to ensure that ε_t is the white noise. In this regard, this paper uses the Akaike Information Criterion (AIC) to decide the optimal lag length of p . Finally, t represents the time or trend variable of the time series model.

The null hypothesis of this test states that $\beta = 0$, that is, there is a unit root (non-stationary time series). On the other hand, the alternate hypothesis states that $\beta < 0$, that is, there is no unit root (stationary time series). In short, if the null is strongly rejected then there is little evidence that supports the presence of unit root.

Cointegration Test

According to Engle and Granger (1987), two variables are cointegrated when they have long-run relationship or equilibrium between them. Therefore, this paper performs cointegration analysis to determine whether a group of non-stationary variables are cointegrated or not. The most widely used techniques include the two-step Engle-Granger (1987) test and the maximum likelihood based Johansen (1988, 1991) test. Nevertheless, despite its simple and powerful method, Engle-Granger test has several shortcomings (for instance, see Greasley & Oxley, 2010). First, normalization (i.e. which variable is the dependent variable) can matter. Second, the test can only identify one cointegrating relationship at most. Therefore, in the multivariate framework such the one presented in this paper, the test cannot identify the possibility of the presence of more than one cointegrating relationship.

Since the Johansen procedure manages to overcome these shortcomings, this paper employs the Johansen test for cointegration to identify

the presence of cointegrating relationships in the model. The procedure considers non-stationary time series as a Vector Autoregression (VAR) of order p , as follows:

$$Y_t = A_1 Y_{t-1} + A_2 Y_{t-2} + \dots + A_p Y_{t-p} + BX_t + \varepsilon_t \quad (2)$$

where Y_t is a k -vector of non-stationary I(1) variables, X_t is a d -vector of deterministic variables, A_1, A_2, \dots, A_p and B are matrices of estimated coefficients, and ε_t is a vector of innovations.

Furthermore, since in most time series cases the variables are non-stationary, the VAR in Equation (2) is estimated in its first difference as follows:

$$\Delta Y_t = \Pi Y_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta Y_{t-i} + BX_t + \varepsilon_t \quad (3)$$

where

$$\Pi = \sum_{i=1}^p A_i - I \text{ and } \Gamma_i = - \sum_{j=i+1}^p A_j.$$

The rank r of the coefficient matrix Π determines the cointegrating relationships. If the coefficient matrix Π has reduced rank $r < c$, then there exist $c \times r$ matrices α and β . Each of this matrix has rank r , where $\Pi = \alpha\beta'$ and $\beta'Y_t$ is stationary. Further, the cointegrating vectors of α contain the adjustment parameters, while those of β are the vector error correction mechanisms in the system.

Furthermore, as suggested by Johansen (1988) and Osterwald-Lenum (1992), the cointegrating rank, r , can be tested with trace test (τ_{trace}) and maximum eigenvalue test (τ_{max}), with details as follows:

- **Trace Test**

The trace statistics is computed as follows:

$$\tau_{\text{trace}} = -T \sum_{i=r+1}^k \log(1-\lambda_i) \quad (4)$$

where T is the number of observations and λ_i is the i^{th} largest eigenvalue of matrix Π . The test tests

the null hypothesis of $r = g$ cointegrating vectors against the alternative hypothesis of $r \leq 1$.

- **Maximum Eigenvalue Test**

On the other hand, the maximum eigenvalue test is estimated by using the following equations:

$$\tau_{\text{max}} = -T \log(1-\lambda_{r+1}) \quad (5)$$

where λ_{r+1} is the $(r + 1)^{\text{th}}$ largest squared eigenvalue. In this test, the null hypothesis of $r = g$ cointegrating relationships is tested against the alternative hypothesis of $r + 1$ cointegrating vectors.

Moreover, according to Johansen and Juselius (1992), if any conflict exists between these tests, then the trace test is a more preferable test for inferences. A paper by Cheung and Lai (1993) that reports Monte Carlo Experiments also supports this argument by suggesting that the trace test shows more robustness than the maximum eigenvalue test.

Granger Causality Test

Further, this paper uses a causality test suggested by Granger (1969) for testing causality among the time series variables. The test identifies how much of the current value of Y can be explained by the past values of Y and then adds the lagged values of X in order to improve the explanation. Under the VAR environment, the following equations are estimated for all possible pairs of (Y, X) :

$$Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \alpha_2 Y_{t-2} + \dots + \alpha_m Y_{t-m} + \beta_p X_{t-p} + \beta_q X_{t-q} + \varepsilon_{1t} \quad (6)$$

$$X_t = \alpha_0 + \alpha_1 X_{t-1} + \alpha_2 X_{t-2} + \dots + \alpha_m X_{t-m} + \beta_p Y_{t-p} + \beta_q Y_{t-q} + \varepsilon_{2t} \quad (7)$$

where α and β are the coefficients, ε_{1t} and ε_{2t} are the error terms. Moreover, the lagged terms are selected based on the VAR-based Akaike Information Criterion (AIC). The null hypothesis for Equation (6) is that X does not

Granger-cause Y and the null hypothesis for Equation (7) is that Y does not Granger-cause X .

EMPIRICAL RESULTS AND FURTHER DISCUSSION

Empirical Results

This paper examines the stationarity of each time series variable by conducting the ADF Test for Unit Root. The test uses the Mackinnon (1996) critical values of -3.750 at 1% level. The results, as presented in Table 2, show that the null hypothesis of the presence of a unit root is not rejected for all the variables, that is, the test confirms the non-stationarity in each variable. Nevertheless, the results in Table 3 reject the null hypothesis of a

unit root when the variables are transformed into their first differences. Therefore, all the variables have $I(1)$ behaviour.

Since the test determines that the variables are integrated of order 1, then the Johansen Test for Cointegration is performed to detect the cointegrating relationship between the variables. The null states that there is no cointegration. Hence, if the null is rejected significantly, then the presence of cointegration is confirmed. In addition, this test uses a VAR model-based estimation in order to find an appropriate lag structure and refers to the Akaike Information Criterion (AIC) for the suggested optimal lag length.

As shown in Table 4, the Trace test indicates the presence of two cointegrating relationships at 5% level of significance. This result is then confirmed

Table 2.
ADF Test for Unit Root (Level)

Variables	Test Statistics	Critical Values (1%)	Results
GDPGR	-2.837	-3.750	Non-stationary
BCR	-2.020	-3.750	Non-stationary
LENDRATE	-0.944	-3.750	Non-stationary

Lags was selected by using Akaike Information Criterion

Table 3.
ADF Test for Unit Root (First Difference)

Variables	Test Statistics	Critical Values (1%)	Results
GDPGR	-4.839	-2.528	Stationary
BCR	-5.140	-2.528	Stationary
LENDRATE	-3.311	-2.528	Stationary

Lags was selected by using Akaike Information Criterion

Table 4.
Unrestricted Cointegration Rank Test (Trace Statistics)

Hypothesized No. of CE(s)	Trace Statistics	Critical Values (5%)	Results
None	40.546	29.68	Reject H_0 at 5%
At most 1	16.005	15.41	Reject H_0 at 5%

Sample: 1990-2011

No. of obs.: 22 after adjustments

Trend assumption: no deterministic trend (restricted constant)

Trace test indicates 2 cointegration eqn(s) at the 5% level

Table 5.
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Max Eigenvalue Statistics	Critical Values (5%)	Results
None	24.540	20.97	Reject H_0 at 5%
At most 1	15.778	14.07	Reject H_0 at 5%

Sample: 1990-2011

No. of obs.: 22 after adjustments

Trend assumption: no deterministic trend (restricted constant)

Trace test indicates 2 cointegration eqn(s) at the 5% level

Table 6.
Granger Causality Test Results

Causality	Chi-square	Probability	Result (5% Confidence Level)
BCR → GDPGR	14.251	0.000	BCR Granger-causes GDPGR
BCR → LRATE	7.345	0.007	BCR Granger-causes LRATE
GDPGR → BCR	7.160	0.007	GDPGR Granger-causes BCR
GDPGR → LRATE	3.984	0.046	GDPGR Granger-causes LRATE
LRATE → BCR	3.869	0.049	LRATE Granger-causes BCR
LRATE → GDPGR	2.700	0.100	LRATE does not Granger-cause GDPGR

by the maximum eigenvalue test. In other words, the presence of cointegration suggests a long-term relationship among the variables.

Finally, this paper conducts Granger Causality test in order to determine the direction of causation relationships among the variables based on the VAR model. The results of Granger Causality test are presented in Table 6. The results show that: 1) there is a bidirectional causality between economic growth and private credit as a share of GDP; 2) there is another bidirectional causality between lending rate and private credit as a share of GDP; and 3) lending rate Granger-causes private credit as a share of GDP but the otherwise does not apply.

Further Discussion

As shown above, there is evidence that there is a long-run equilibrium among credit market development, lending rate, and economic growth. Furthermore, Granger Causality test shows that

there is a bidirectional causality relationship between economic development and credit market. In other words, it also reveals that the causal relationships between credit market and economic growth are both “supply-leading” and “demand-following”. From the private sector point of view, healthy business expansion will increase the demand for bank credits. Hence, as the business sector grows, entrepreneurs will obtain more credits from bank in order to accommodate its business expansion. On the other hand, from the banking sector perspective, this shows that development in the credit market will provide more opportunities for the companies in the private sector to expand their businesses further through bank credit. As a result, this stimulates the productive sectors in the economy thus promoting economic growth.

Another bidirectional causality relationship occurs between lending rate and bank credit. These results have several implications. First, the movement of lending rate affects the development

of private credit since lending rate provides an insight regarding whether the credit is cheap or expensive. For instance, statistics shows that the declining trend of lending rate in Indonesia particularly from 2000 up until now has been accompanied by the growing bank credit. Second, private credit development also affects the lending rate. This causality can be achieved since lending rate, influenced by credible monetary policy instruments, will adjust based on the condition of credit development. For instance, when credit market may result in bubble, lending rate, through influence from monetary instruments, will rise in order to prevent overheating.

POLICY IMPLICATIONS AND CONCLUSIONS

This paper investigated the long-run equilibrium relationship among credit market development, lending rate, and economic growth in Indonesia between 1985-2011. The empirical analysis in the VAR framework suggests the evidence of bidirectional causalities running between: 1) economic growth and credit market development, and 2) credit market development and lending rate. In this regard, Bank Indonesia as the central bank has played its role as an independent monetary authority as well as banking supervisor in two aspects. First, the causality running from credit market to economic growth is achieved through improved banking supervision in order to ensure that credit is allocated efficiently to the productive private sector. Second, in the presence of effective monetary instruments, lending rate can be guided to respond to the development in the credit market to prevent overheated financial market.

Nevertheless, the robustness of this study is limited in terms of macroeconomic variables. Hence, further empirical research should be facilitated by more variables such as inflation, interest rate, saving rate, investment rate, foreign exchange rates, and so forth in order to investigate the causality between credit market development and economic growth.

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