



# Lending Behavior of Indonesian Banks

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The main banking activity basically is taking deposits from the surplus unit and lends it to deficit units, or in other words banks will act as financial intermediaries. In lending activities banks are faced with credit risks. Thus, this paper is examining the determinants of lending behavior in Indonesian banks. This paper uses lagged loans, deposits, capital, non-performing loans, and bank size as determinant variables on lending behavior of Indonesian banks. The data are taken from financial performance of 30 Indonesian banks listed on the Indonesia Stock Exchange from the year of 2011, 2012 and 2013. The model developed in this research is an ordinary least squares method using SPSS software. The result proved that there is no empirical evidence shows that lending behavior of Indonesian banks is influenced by the amount of deposits, non-performing loans, and bank size. Whereas, there is significant evidence shows that lagged loans and capital do influence the lending behavior of Indonesian banks. This indicates that Indonesian banks are making the decision of lending activities based on the previous loans and capital owned by the banks. Capital could be used by the banks to cover the unavoidable losses, therefore it affects the decision making by the Indonesian banks in regards to the lending activities.

**Keywords:** Bank Lending, Indonesian Banks, Capital, Deposits, Non-performing Loans.

## 1. INTRODUCTION

Banks are different compared to other industries because the main activities in banks are saving and lending. Basically, the banks receive the money from the depositors and loaning it to the borrowers. Banks guarantee the depositors' money from the risks [11]. The role of the government to assure the depositors by setting of bank regulation and monitoring the banks' activities. Due to the importance of the bank's activities, thus there are so many research regarding the lending behavior in many countries such as Asian countries [8,9,15,18], United States [18], and Nigeria [12].

Lending behavior is different between one country to another country, it is usually based on the monetary policy and economic growth in that particular country. Monetary policy tools include the interest rate, capital requirements, and reserve requirements [8]. The monetary policy does give impact on the economic activities and it can affect the financial condition of the borrowers thus indirectly affect the bank activities.

The policy regarding the capital requirements is made to handle the bank risks. The banks are suggested to have higher capital than the minimum capital requirements to absorb the risk of banks' activities [13].

Reference [15] stated that commercial banks' lending behavior might affect the monetary policy in developing countries. Many companies in the developing countries are small and medium enterprises and usually are lacking with their financial reports. Indonesia is one of the developing countries and many of micro, small and medium enterprises use loans as their capital. Therefore, it might increase the risk of the banks, thus, the banks should be careful in decision making regarding their funding to the borrowers. The focus of this paper is to examine the internal factors that affect the lending behavior of Indonesian banks listed on Indonesia Stock Exchange for the year 2011, 2012 and 2013.

This paper is organized as follows: Section 2 Overview of Indonesian Banks. Section 3 describes the theoretical model. Section 4 explains the result and discussion. Finally, in section 5 provides the conclusion.

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## 2. OVERVIEW OF INDONESIAN BANKS

Banks activities from year to year are more complex and potentially have a higher risk. The increased risk should be accompanied by the increased capital to cover the unavoidable risk. Due to the importance of capital in the business sustainability, thus the banks have to require the minimum capital set by the government [2]. The government also sets the legal lending limit to the borrowers based on the banks' capital. Besides the capital, assets are also important to manage the credit risk. Banks are required to watch over their assets' quality. The total assets of banks show the banks' size. The different size of banks tends to give the different loans.

The recent paper by [15] studied the lending behavior in Vietnamese banks. They used the two stages of least squares in their model to determine the lending behavior. They examined the two types of banks that are private banks and state-owned banks. Reference [15] assumed in their paper that loans given to the customers are decided by the banks' decision. The model used in the paper is the profit maximization as a means of commercial banks. Thus, the determinant used in their paper was asset structure, loan quantity, deposit quantity and government bonds.

Reference [15] found that the deposit growth, equity growth, liquidity constraint, government bond rate and output growth affect the growth of loans. Furthermore, [6] examine the effect of capital ratio to the bank lending over the period 2001 to 2011 using a matching method. Their finding shows that the higher the actual capital will make the growth of loan stronger. They also found there is a relationship between bank size and loan type to banks' capital and bank lending. Reference [16] found that in Indonesia, small banks are more interested than larger banks in giving loans to the small enterprises.

Based on the data of Statistic Indonesia, Indonesia has 4 state owned banks, 24 regional government banks, 57 private national banks, 11 sharia commercial banks, and 23 foreign and joint banks for the year 2011, 2012, and 2013 [19]. The development of bank funds by the type of fund are always increasing from year to year, however there is decreasing of the increasing percentage. The year 2011 increased by 18.72% from the year before and 2012 shows it increased by 15.61% and in 2013 it increased by 13.11% and followed by the year 2014 that showed the increase of bank fund development as much as 12.17%.

Table 1. Total of Banks Outstanding Investment Credits and Working Capital by Economic Sectors during 2011 to 2013 (in Billion Rupiahs)

Year \ Sectors	2011	2012	2013
Investment Credits	1075108,96	1325357,05	1344383,41
Working Capital	463307,45	591073,27	639899,45

Indonesian banks have challenges to face the instability of economic conditions and the pressure of domestic economy. Data from Statistic Indonesia shows the economic growth obtained in 2011 was 6.5%, 6.23% (2012) and 5.58% (2013). The growth of economy in Indonesia helps to stimulate the banks' performance and other financial institutions. The banks' performance does not only face the external factor such as

economic growth, but also the internal factors such as governance, risk management, capital, funding of MSMEs and productive sectors, the bank's services and the stability of financial systems. In 2011, Indonesian governments are legalizing the Act No. 22/2011 regarding the transition of functions, duties and powers include regulation and supervision of financial services of banks from Bank Indonesia to Financial Services Authority. Besides the economic growth, the lending growth in Indonesian banks in 2012 experienced the lower growth compare to lending growth in 2011. This is due to the decreasing of lending for consumption sectors and declining on domestic corporate performance [3]. The productive credit and working capital lending lead the lending growth in the year 2012, while consumption credit and investment credit tend to decrease.

## 3. THEORETICAL MODEL

The data source of this paper from the annual report of Indonesian banks listed on Indonesia Stock Exchange for the year 2011, 2012 and 2013. There were 30 Indonesian banks used as sample for this paper. The model developed in this paper is based on ordinary least squares (OLS). All the data would be proceed by using multiple linear analysis using SPSS Software. The data collected are the amount of loans, deposits, capital, NPL, and total assets. This paper assumes that the lending activities is decided from the banks. Thus, the dependent variable in this paper is the total loans (LOANS) while the independent variables are lagged loans (LOANS<sub>t-1</sub>), deposits (DEPOSIT), non-performing loans (NPL), bank size (TA), and capital (CAP).

This paper would like to examine the lending behavior of Indonesian banks by detecting the effect of lagged loans on current year loans given to the borrowers. Besides that, this paper also includes the total deposits. The total deposits used in this paper include the demand deposits, time deposits, also saving and other deposits. The relationship between deposits and lending has been examined by [5]. Reference [5] found the evidence that banks profoundly funded by core deposits in response to exogenous changes in credit risk tend to provide borrowers with smoother loan rates. Banks have to hold the minimum capital amount to maintain their banks. Capital ratio could be used to show the banks' ability to absorb the unexpected losses like the default loans. It is expected the higher the capital ratio, the higher the loans given to the borrowers. Furthermore, non-performing loans show the inability of the customers to pay their debt to the banks, in other word non-performing loans show the banks' risk. Non-performing loans will lead to the bad debt and become a burden for the banks. Thus, the higher the loans given to the borrowers the higher the risk will be faced by banks. When the non-performing loans of the banks higher, banks will tend to change the credit policy. Bank size shows the bank's assets. The different bank size usually tends to give the different amount of loans to the borrowers.

Based on the above discussion, the general model of ordinary least squares that this paper provides could be shown as follows:

$$LOANS = \alpha + \beta_1 LOANS_{t-1} + \beta_2 DEPOSITS_{t-1} + \beta_3 NPL_{t-1} + \beta_4 TA_{t-1} + \beta_5 CAP_{t-1} + \varepsilon$$

All the data of variable used in this paper are lagged variables

because this paper would like to see the total loans based on the data lagged independent variables.

**4. RESULT AND DISCUSSION**

In the first part, this paper needs to process the classical assumption test to check if the data from all variables are fit as a research data. The classical assumption done in this paper that is multicollinearity, autocorrelation, heteroscedasticity, and normality. Table 2 below shows the result of autocorrelation.

Table 2. Test of Autocorrelation

Model	R	R Square	Adjusted R Square	Durbin Watson
1	0.997	0.995	0.994	1.930

The result of autocorrelation tests shows that all data of variables are fit as a research data, which is shown from the value of Durbin Watson. There are no autocorrelation problems because the value is  $d_u < d < 4-d_u$  ( $1,598 < 1,930 < 2,402$ ) [21]. The result of collinearity test shows that all the variables value of tolerance are more than 0.1 and VIF are less than 10, it means there are no multicollinearity problems. Furthermore, the result of heteroscedasticity and normality show that all the data of variables are normal and homoscedasticity. Thus, all the data can be used as a research data and can be done the multiple linear regression. The table 3 and 4 below shows the output of multiple regression linear.

Table 3. ANOVA

Model	F	Sig
Regression	19999.856	0.0001

Table 4. The Statistic Result

Model	Sig.
NPL	0.192
LnDEPOSIT	0.537
LnCAP	0.033
LnTA	0.121
LnLOANS <sub>t-1</sub>	0.000

From table 3, this paper presents that LOANS<sub>t-1</sub> and CAP are positively do effect the LOANS. As expected the result shows that the lending given to the borrowers in the current year is affected by previous total lending and previous capital. Meantime, DEPOSITS<sub>t-1</sub>, NPL<sub>t-1</sub> and TA<sub>t-1</sub> do not affect the LOANS. The result succeeds in proving that lagged loans affect the bank lending activities. The higher the previous loans, will be the higher the current loans. It means the banks consider the last year financial position or performance in decision making. Moreover, the condition of Indonesian banks seems to be stable in the instability economy. The capital is also proved significantly affect the bank lending. It shows that the higher the capital owned by banks the higher lending given to the borrowers by banks. Banks with higher capital than the capital requirements by the government tend to give a higher lending as stated in [14] that found the same result of banking in Ghana and in line with [13] that there is relationship between capital and bank lending. The lacking of banks' capital will affect the lending decision of banks because it will cause the obstacle for the banks liquidity. This evidence does not agree with previous

result that show the insignificant relationship between capital and bank lending among others [1,17]. Furthermore, there is research by [11] found the relationship between capital and risk in Islamic bank while there is no relationship in conventional bank of Bangladesh.

The insignificant of deposits to the bank lending do not support the result of previous research by [15] that found the deposits have a significant and positive effect on loan growth. Banks as intermediaries between surplus unit and deficit unit basically give the loans from deposits. However, this paper cannot give the evidence that deposits affect the bank lending of Indonesian banks. It might the banks focus on their capital when give the loans to the borrowers as can be seen that capital do affect the bank lending. The Indonesian banks are confident that their capital is enough to cover the credit risk. Besides that, non-performing loans also shows the insignificant effect on bank lending. The result of non-performing loans in line with previous research in Vietnamese banks that is did not significantly effect on loan growth. Indonesian banks seem do not depend on non-performing loans in giving the loans or in other word the amount of loans would not change although there is changing the level of non-performing loans. It might because the Indonesian banks have been applied the tight policy to the borrowers, thus the amount of default loans can be suppressed. Banks have been assessed the prospective borrowers regarding their ability to pay their debt. Moreover, for the total assets the result of this paper also do not support the previous research that found the large banks tend to give loans to the larger companies and less effective to lighten the obstacle of loans [1,4,7,20] found there are differences banks activity among smaller regional banks and larger city banks in three different periods that is the high growth economy, stagnant growth and economic recession. For the case in Indonesian banks in this paper do not find the evidence that bank size significantly effect on bank lending. It might the data of an Indonesian bank used as in this study tend to have the same range of total assets during the years of research. Besides that, there is no different economic situation includes in this paper. Nevertheless, this result in line with [17].

**5. CONCLUSIONS**

This paper develops the model of lending behavior in Indonesian banks with the financial variables (internal factors) as a determining variable. The bank lending activities as dependent variable can be seen from the total loans and as independent variables are financial variables among others deposits, non-performing loans, total assets and capital. The empirical test has been done using the multiple linear regression model of SPSS software. The Indonesian banks cover in this paper are included the state owned banks, private national banks and foreign and joint banks. The result proves that the lagged loans and capital do affect the bank lending whereas the other variables such as deposit, non-performing loans, and bank size are insignificantly affected the Indonesian bank lending activities. The bank lending does not depend on the total deposits, non-performing loans and bank size as the banks already applied the tight policy during evaluate the prospective borrowers. The supervision of the Indonesian government also helps the banks to be confident in taking care of the depositor's money and sustainability of the banks. Moreover the lagged loans and capital are positive and significantly affect the bank lending. It means the higher the

last year loans, the higher the loans in the current year. It happens because of the support of the total capital owned by banks. The banks that have the capital higher than the minimum capital requirement set by the government tend to give the higher loans to the borrowers.

This study has been conducted while banks are under supervision of Bank Indonesia, and starting 31 December 2013 banks are under the supervision of the Financial Services Authority. Besides that, this paper focuses on internal factors in determining the lending behavior. In the further research it is suggested to include the external factors such as the gross domestic product and monetary policy related to lending behavior of Indonesian banks.

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## REFERENCES

- [1] S. Agarwal, S. Chomsisengphet, C. Liu and S. G. Rhee, "Earnings management behaviors under different economic environments: Evidence from Japanese Banks," *International Review of Economics and Finance*, vol. 16, no. 3, pp. 429-443, 2007.
- [2] Bank Indonesia, Booklet Perbankan Indonesia, Jakarta: Bank Indonesia, 2013.
- [3] Bank Indonesia, Laporan Pengawasan Perbankan, Jakarta: Bank Indonesia, 2012.
- [4] A. N. Berger, N. H. Miller, M. A. Petersen, R. G. Rajan and J. C. Stein, "Does function follow organizational form? Evidence from lending practices of large and small banks," *Journal of Financial Economics*, vol. 76, no. 2, pp. 237-269, 2005.
- [5] M. Berlin and L. J. Mester, "Deposits and relationship lending," *The Review of Financial Studies*, vol. 12, no. 3, pp. 579-607, 1999.
- [6] M. Carlson, H. Shan and M. Warusawitharana, "Capital ratios and bank lending: A matched bank approach," *Journal Financial Intermediation*, vol. 22, no. 4, pp. 663-687, 2012.
- [7] C. Dodson, "Bank size, lending paradigms, and usage of farm service agency's guaranteed loan programs," *Agricultural Finance Review*, vol. 74, no. 1, pp. 133-152, 2014.
- [8] F. F. Said and A. G. Ismail, "Monetary Policy, capital requirement and lending behaviour of Islamic banking in Malaysia," *Journal of Economic Cooperation*, vol. 29, no. 3, pp. 1-22, 2008.
- [9] S. Jeanneau and M. Micu, "Determinant of international bank lending to emerging market countries," BIS Working Papers, 2002.
- [10] R. P. Kishan and T. P. Opiela, "Bank size, bank capital, and the bank lending channel," *Journal of Money, Credit and Banking*, vol. 32, no. 1, pp. 121-141, 2000.
- [11] M. D. Miah and K. Sharmeen, "Relationship between capital, risk and efficiency," *Journal of Islamic and Middle Eastern Finance and Management*, vol. 8, no. 2, pp. 203-221, 2015.
- [12] T. M. Obamuyi, A. T. Edun and F. K. Olawale, "Bank lending, economic growth and the performance of the manufacturing sector in Nigeria," *European Scientific Journal*, vol. 8, no. 3, 2012.
- [13] E. Osei-Assibey and B. A. Bockarie, "Bank risks, capital and loan supply: Evidence from Sierra Leone," *Journal of Financial Economic Policy*, vol. 5, no. 3, pp. 256-271, 2015.
- [14] E. Osey-Assibey and J. K. Asenso, "Regulatory capital and its effect on credit growth, non-performing loans and bank efficiency: Evidence from Ghana," *Journal of Financial Economic Policy*, vol. 7, no. 4, pp. 401-420, 2015.
- [15] D. Sarath and D. V. Pham, "The determinants of Vietnamese banks' lending behaviour: A theoretical model and empirical evidence," *Journal of Economic Studies*, vol. 42, no. 5, pp. 861-877, 2015.
- [16] M. Shaban, M. Duygun, M. Anwar and B. Akbar, "Diversification and bank's willingness to lend to small business: Evidence from Islamic and conventional banks in Indonesia," *Journal of Economic Behavior & Organization*, vol. 103, pp. S39-S55, 2014.
- [17] R. E. Shrieves and D. Dahl, "Discretionary accounting and the behavior of Japanese Banks under financial duress," *Journal of Banking & Finance*, vol. 27, no. 7, pp. 1219-1243, 2003.
- [18] W. Soedarmono, A. Tarazi, A. Agusman, G. S. Monroe and D. Gasbarro, "Loan loss provisions and lending behaviour of banks: Asian evidence during 1992-2009," *SSRN*, vol. 2049217, 2012.
- [19] Statistic Indonesia, "Economic and Trade," [Online]. Available: <http://bps.go.id/>. [Accessed 11 July 2016].
- [20] A. Simpasa, B. Nandwa and T. Nabassaga, "Bank lending channel in Zambia: Empirical evidence from bank level data," *Journal of Economic Studies*, vol. 42, no. 6, pp. 1159-1174, 2015.
- [21] D. N. Gujarati and D. C. Porter, *Basic Econometrics*, New York: McGraw-Hill, 2009.