

# Nexus Between Monetary Instruments and Bank Credit Distribution: Evidence from ASEAN Countries

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## ABSTRACT

The aim of this study was to examine the relationship between monetary indicators and bank credit distribution, including inflation, interest rate, and exchange rate in seven ASEAN countries namely Brunei, Indonesia, Philippine, Malaysia, Singapore, Thailand, and Vietnam. This study applied a quantitative approach by engaging multiple regression analysis with panel data using cross-section data from 2012 to 2018. The data in this research was secondary data which gathered from the World Bank website. The findings of this study showed that inflation and interest rate had a negative influence on bank credit distribution, while the exchange rate had a positive effect on bank credit distribution. The study's result also showed that variable inflation, interest rate, and the exchange rate had a simultaneous effect on bank credit distribution in seven ASEAN countries. These results suggest that for the policy makers in each ASEAN country should be able to consider a lending regulation.

**Keywords:** Credit Distribution, Exchange Rate, Inflation rate, Interest Rate

**JEL Codes:** E42; E51; G21

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Received: 09 December 2021

Revised: 11 January 2022

Accepted: 3 February 2022

### Suggested citation:

Septiani, R., Wulandari, D., Narmaditya, B. S., & Prayitno, P. H. (2022). Nexus Between Monetary Instruments and Bank Credit Distribution: Evidence from ASEAN Countries. *Indonesian Economic Review*, 2(1), 1-7.

### INTRODUCTION

Banks are fast becoming a key instrument in an economy on a nation and has increased attention among scholars (Ferreira & Muzindutsi, 2017; Fufa & Kim, 2018; Dhaly & Frikha, 2016; Kolapo et al., 2019; As a financial institution, bank intermediates the money circulations from lenders to spenders. People who have insufficient resources can take advantage of banking facilities to finance production factors in order to expedite their economic activities. Commercial banks are the most important savings mobilization and financial resources allocation institution. In order for them to perform these roles, it must be realized that banks have the potential, scope and prospects of financial intermediation (Olusanya, 2012).

The banking sector can influence the conditions of economic development in a country. If the banking sector works inadequately, it will lead to deteriorating economic conditions in a nation. The opposite also happens when the country's economic conditions are experiencing a shock, it will also affect the non-functioning of the intermediation in the banking sector (Kiryanto, 2007; Prochniak & Wasiak, 2017). The lesson learnt from the monetary crisis in 1997/1998 which had a negative impact on the banking sector where there was a failure of the banking sector in raising funds and lending to the public (Sudarsono, 2009; Choi et al., 2019).

Lending policy is closely related to the macroeconomic of a nation. When the macroeconomic of a country is in a stable trend, the banking sector can carry out its functions to channel credit to the public properly. According to Agung (1998), the decrease in bank deposits is not offset by other funds which are not subject to reserve requirements or decrease in securities, this will result in a decrease in bank loans. In addition, bank loans fall, and bank-dependent borrowers are dominant in the economy, the monetary policy reduces both investment and economic activity (Adediran et al., 2019).

Conditions of a country can be seen from various variables, namely inflation, interest rates and exchange rates. The inflation causes the price of goods, in general, to increase continuously and the money supply increases. The central bank in controlling inflation has a monetary policy instrument which is to tighten credit in order to control the money supply and raise discounts to attract public interest in raising funds in banks. Determination of loan interest rates that are too high will cause a decrease in the public interest to borrow money in the bank. Meanwhile, in terms of exchange rates, the condition of the depreciation of the rupiah affects the condition of the banking sector, especially in the inability of companies to return credit to banks.

Studies have been conducted on the effects of inflation, interest rates and exchange rates. For instance, Vazakidis (2011) suggested that inflation has a significant negative effect on the allocation of bank loan funds. However, it is different from the results of research conducted by Tomak (2013), who showed that inflation has a positive and not significant effect on lending. Haas and Lelyveld (2006) noted that macroeconomic variables, including GDP, inflation and lending rate have no significant effect on credit growth in foreign banks, whereas in domestic banks has a significant negative effect. Furthermore, Mongid (2008) revealed that there is a negative influence between the discount rate on bank credit. On the contrary, Ditria (2008), remarked that interest rates have a positive and significant effect on bank lending. Then, Haryati (2009) suggested that the exchange rate variable has a negative effect on bank credit.

The increasing attention among scholars in the world, the generalisability of much-published research on this issue is problematic. In addition, there is minor attention of researchers in the context of ASEAN countries. For these reasons, this study contributes to determining the effect of monetary instruments, including inflation, interest rates, and exchange rates on bank lending in ASEAN countries. In addition, the fundamental reason is that the ASEAN countries shown the World Economic Forum in 2017, experienced an economic growth trend for more than six percent.

## LITERATURE REVIEW

Provision of money can be linked to that, based on an agreement the bank and another party that requires the borrower to pay off the debt after a certain period of time with interest (Kasmir, 2012). In the view of Olokoyo (2011), credit constitutes the largest single income-earning asset in the portfolio of most banks. This explains why banks spend enormous resources to estimate, monitor and manage credit quality. This is understandable, a practice that impacts greatly on the lending behaviour of banks as large resources are involved. While investigating factors affecting interest rates, degree of lending volume and collateral setting in the loan decision of banks. According to Adedoyin and Sobodun (1991), lending is undoubtedly the heart of the banking business. Therefore, its administration requires considerable skill and dexterity on the part of bank management. While a bank is irrevocably committed to pay interest on deposits it mobilized from different sources, the ability to articulate loanable avenues where deposit funds could be placed to generate reasonable income; maintain liquidity and ensure safety requires a high degree of pragmatic policy formulation and application.

On the other hand, according to Case and Fair (2007), inflation is the tendency of rising prices continuously. This can be interpreted as an increase in the price of goods as a whole and

continuously. Mankiw (2007) divided inflation into two based is called Cost-Push Inflation and Demand-Pull Inflation. Rising prices caused by inflation will reduce the real value of money and purchasing power. People who have a fixed income demand for goods and services continues to decline. This situation makes economic actors reduce the level of production. The reduced level of production caused a decline in loans to banks due to the weakening of the business world. Inflation causes economic actors to reduce investment activities and cause credit to decrease (Hung, 2011).

In addition, interest is defined as the price that must be paid by the bank to the customer and the price that the customer must pay to the bank. Mishkin and Eakins (2009) defined interest rate as the cost of the loan made or the price to be paid for leasing money. Interest rates are divided into two types, namely, deposit interest rates and loan interest rates. In addition, Haryati (2009) stated that if the inflation rate increases then the community will tend to reduce saving or investment and cause the banking assets in real terms will decrease so that it will affect the ability of banking operations in lending.

Miskhin and Eakins (2009) the exchange rate is the value of one currency against another currency. While Mankiw (2007) defined the exchange rate between two countries is the price level agreed upon by residents of the two countries to trade with one another. Fluctuations in exchange rates affect banks, an increase in the exchange rate of foreign currencies (US \$) against the rupiah causes the public to tend to have US \$ (withdrawing funds and converting them in US \$) which results in a decrease in rupiah banking funds, thereby affecting bank activities in lending (Haryati, 2009).

**METHOD**

This research applied a quantitative method using multiple regression analysis with panel data using cross-section data. The study was conducted in seven ASEAN countries, namely Brunei, Indonesia, Malaysia, the Philippines, Singapore, Thailand and Vietnam, during the period of 2012-2018. The data were gathered from the World Bank website. The bank credit is proxied by the financial sector includes all credit to various sectors on a gross basis, with the exception of credit to the central government, which is net in each country in ASEAN. Furthermore, the inflation variable is measured using the annual inflation rate, which is a change in the increase in general prices continuously and expressed in terms of per cent (%). The variable real interest rates used is the lending interest rate adjusted for inflation as measured by the GDP deflator. While the exchange rate variable used is the official exchange rate determined by national authorities.

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + e_{it} \dots\dots\dots (1)$$

Information:

- Y = Bank credit distribution
- X1 = Inflation
- X2 = Interest rate
- X3 = Exchange rate
- $\beta_0$  = Intercept
- $\beta_1 \beta_2 \beta_3$  = Coefficient variable
- i = Cross section
- t = Time series
- e = Error term

The data of this study have passed the prior classical assumption test including normality test, multicollinearity test, heteroscedasticity test and autocorrelation test. Furthermore, to determine whether the panel data model, it was regressed with the Common Effect Model

(CEM), Fixed Effect Model (FEM) or Random Effect Model (REM), the following tests are carried out: (1) Chow Test can be used to choose a technique using the Pooled Least Square approach or Common Effect Model (CEM) or Fixed Effect Model (FEM). (2) Hausman test is used to choose between the Model Fixed Effect (FEM) or the Random Effect (REM) approach.

## RESULTS AND DISCUSSION

### Hypothesis Testing

First, we estimate the relationship between variables partially using t-test. The decision is that when the probability value is less than 5% ( $\alpha = 0.05$ ), then the independent variable influences the dependent variable. The result of the prior analysis is provided in table 1

**Table 1.** The results of T-test and F-test

Variable	Coefficient	Prob.
C	3.61E+11	0.0010
Inflation	-1.39E+10	0.0081
Interest rate	-1.25E+10	0.0070
Exchange rate	14009572	0.0017
R-squared		0.393702
Adjusted R-squared		0.339949
S.E. of regression		4.81E+10
F-statistic		3.603539
Prob(F-statistic)		0.020407

Source: Processed by Authors (2019)

Based on table 1, it can be known that the inflation variable (X1) has a probability of 0.0081 which means less than a significance value of 0.05 and a coefficient value of  $-1.39E + 10$  which confirm that the inflation has a significant and negative effect on bank credit distribution. The interest rate variable (X2) has a probability of 0.0070, which means less than a significance value of 0.05 and a coefficient value of  $-1.25E + 10$ . This means that the interest rate has a significant and negative effect on bank credit distribution. While the exchange rate has a probability of 0.0017 and a coefficient value of 14009572, it implies the exchange rate has a significant and negative effect on bank credit distribution.

In addition, we examine the T-test to understand the simultaneous effect on bank credit distribution. From table 1, it can be explained that the F-count is 3.603539 with a probability of 0.020407 and F-table is 2.56. Therefore, the calculated F-value of 3.603539 is greater than F-table 2.56, and the probability of 0.020407 is smaller than 0.05. It implies that the variable of inflation, interest rates, and exchange rates simultaneously influence the variable lending in the bank credit distribution.

### Inflation Rate and Bank Credit Distribution

The present study was designed to determine the effect of the relationship between the inflation rate and bank credit distribution. From the previous analysis, it found that inflation negatively affects lending in the bank credit distribution in ASEAN countries. This result indicates that the increase in inflation will lead to diminishing on credit growth and vice versa. When inflation occurs, the money supply in the community is very high. In controlling inflation, the central bank has a monetary policy instrument which is to tighten credit in order to control money supply in the community. This finding confirms the antecedent studies on inflation and bank credit distribution (Cheema & Naaem, 2019; Kholisudin; 2012; Ogwang et al., 2019) which stated that interest rates have a negative influence on credit demand because interest rates are sensitive to the demand for credit for the community, especially for the business world as a

driver of the real sector. For entrepreneurs, interest rates are a compulsory consideration for investing or business.

### **The Effect of Interest Rates on Bank Credit Distribution**

The second set of analyses examined the impact of interest rate and bank credit distribution. The finding showed that there is a negative effect on bank credit distribution in ASEAN countries. It implies that an increase in the interest rates will decline in bank credit distribution, and vice versa. The finding of this study is an agreement with prior studies by Koivu (2008); Haryati (2009); Madeira (2019). The fundamental reason is that interest rates play a role in determining the amount of savings and investment made in the economic sector. Changes in interest rates will have an impact on changes in the amount of savings and investment made by business actors. Business actors will invest only if the rate of return of capital obtained exceeds the applicable interest rate. This means that the lower the interest rate, the more investment is made by entrepreneurs and encourages high bank credit.

### **The Influence of Exchange Rates on Bank Credit Distribution**

The results of the analysis state that the exchange rate has a positive and significant effect on bank credit distribution in ASEAN countries for the period 2012-2018. These results are consistent with some previous scholars such as Tandris et al. (2014); Mckinnon et al. (2010); Kholisudin (2012) who remarked that a positive correlation between exchange rate and bank credit distribution. In more specific, the appreciating of exchange will lead to greater bank credit distribution. Tandris et al. (2014) revealed that that the exchange rate has a positive and significant effect on credit demand in banks. Increasing the exchange rate will cause the banking sector to provide credit. Vice versa, when the exchange rate has decreased, the distribution of credit in the banking sector has declined. According to Kholisudin (2012) that the exchange rate has a positive and significant effect on the demand for bank credit at commercial banks. The reason is that when the exchange rate is unstable, the central bank has a monetary policy instrument to reduce the benchmark interest rate so that credit interest rates can fall so that it attracts people to apply for credit.

### **CONCLUSION**

This study aims to analyze the effect of inflation, interest rates and exchange rates on lending in the banking sector in seven ASEAN countries during 2012-2018. Based on the results of the analysis, it can be concluded that the inflation and interest rate had a negative effect on bank credit distribution in seven ASEAN countries. Meanwhile, in terms of exchange rate variables, it has a positive and significant effect on bank loans in seven ASEAN countries. These results suggest that for policy makers in each ASEAN country should be able to consider a lending regulation. For example, the interest rate, the central bank in each ASEAN country is expected to be able to control its benchmark interest rate because the benchmark interest rate can affect bank interest rates or lending rates and strive to be stable over a long period of time so as not to reduce lending in the banking sector and not impact on other countries.

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