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Impact of Monetary Policy on Trade Credit and Bank Credit in an Emerging Market Economies: Empirical Evidence in the Indonesia Stock Exchange

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ABSTRACT

The global financial crisis of trigger Bank Indonesia to implement a monetary contraction policy by increasing the central bank's benchmark interest rate. This increase in interest rates will increase lending rates which burden creditors. Therefore creditors will shift loan from bank credit to trade credit. This study aims to analyze the effect of monetary policy on corporate credit in the form of bank credit and trade credit as an important source of financing for company profitability by using the simultaneous panel analysis method. The data used are annual data from 2015-2018 with a total cross-section of 109 companies listed on the Indonesia Stock Exchange. The results showed that the increase in interest rates as an indicator of monetary policy could increase lending on trade credit and reduce demand for lending on bank credit. This shows that the type of funding from trade credit has an important role as an alternative source of external financing when the Bank Indonesia implements a monetary contraction policy. The negative relationship between trade credit and bank credit proves that trade credit can be used instead of bank credit.

Keywords : Bank Credit, Monetary Policy, Simultaneous Panels, Trade Credit

I. INTRODUCTION

The global financial crisis that occurred in 2008-2009 has caused the economic activities of some countries to decline, especially in emerging market economies. The global finance crisis has spread to other countries through a variety of trade relations both bilateral and multilateral cooperation agreements, foreign investmen, etc. This spread usually has a strong impact on countries that have less volatile money markets condition compared to more stable country market conditions. Coulibaly et al. (2013) stated that the global financial crisis affects developing market economies through two channels, firstly decreasing demand for export goods and secondly declining financial conditions.

Indonesia as one of the countries include in the category of developing market economy and also as an exporter country experienced a decline in economic activity due to the global financial crisis. It can be seen from figure 1 that the number of exports declined in 2008-2009 which indicates that the level of consumption of goods exported from Indonesia decreased during the crisis. This decrease resulted in a decline in revenues of exporting companies. The decline in export demand also has an impact on increasing the company's storage costs due to increased unsold goods. These factors ultimately cause the company's financial condition to become unstable. Instability of financial conditions encourages companies to lend capital through bank loans. The Bank Indonesia benchmark rate as seen from Figure 1, increased to 9. 5% during the crisis, this was done by the central bank to reduce inflationary pressures. The increase in interest rates then causes companies to face operational obstacles in lending to banks because of the high cost of borrowing that must be returned by the company.

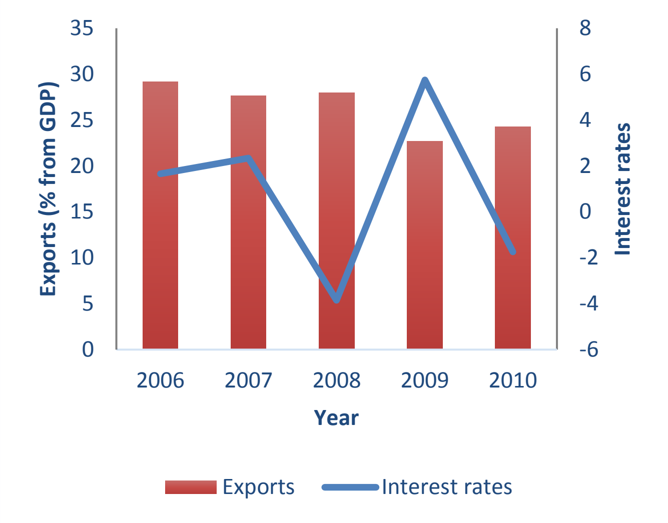


Figure 1: Percentage of interest rates and Indonesian exports in 2006- 2010

Monetary tightening policies which have caused a rise in interest rates and in turn, the cost of credit financing, has reduced credit demand which indicates that the level of investment is sluggish and this will have an impact on decreasing real output in the short term (Simorangkir and Adamanti, 2010). The results of a study conducted by Bernanke and Gertler (1995) found that changes in monetary policy can affect the quality of borrowers' credit through interest rate and trade balance which causes the company's investment opportunities, guarantees and net worth to decrease. Changes in monetary policy which reflected by interest rates indicate that this may hinder the mechanism of bank credit in Indonesia. This is also be expected the background of companies in Indonesia to look for alternative sources of financing in the short term.

Sources of funding other than bank are used by companies to address funding needs in carrying out operational activities. This shows that the source of financing of a company not only comes from formal financial institutions such as banks in the form of bank credit, but also comes from debt to lenders, which is called trade credit. Trade credit is a source of corporate debt originating from other companies in the form delay of payment for goods purchased by the company.

Bastos and Pindado (2013) stated that understanding the effect of the financial crisis on credit markets and especially trade credit is important for developing countries because two things, first, trade credit is an important financial source for companies so that they can make a strong contribution to developing countries through the injection of borrowed funds. Second, developing countries are vulnerable to external risk, hence the financial situation is more sensitive. It indicates that the trade credit and bank credit are two forms of financing sources that are vital for the company. Palancin-Sanchez et al. (2018) stated that research on the relationship between trade credit and bank credit is the main key in corporate financial research.

Fisman and Love (2003) stated that when financing sources in formal financial institutions are scarce, then trade credit can be used as a substitute for short-term financial resources, this implies that companies' access to trade credit must be easier in countries with markets underdeveloped finance. Constraints happened in accessing loans on bank credit make this type of lending to trade credit is becoming more attractive (Ahmed *et al.* 2014). In addition to the less developed countries, where access to formal lending institutions is limited, the role of trade credit is very important in funding company activities (Fisman, 2001). Important to identify how the relationship between trade credit and bank credit at company in Indonesia that can assist employers in making decisions related to financing sources are efficient for the company.

McGuinness and Hogan (2014) stated that companies have a significant role in terms of national output and employment for economic recovery and avoiding the increasing problem of recession. The changes occured in monetary policy which is under the control of the central bank, usually affect business and household expenditure decisions (Mohanty and Turner, 2008). The problem that often arises in relation to changes in monetary policy is a contraction that causes companies to experience limited access to financial resources in banks. The external financial sources are very important for the sustainability of the company so that the company makes a trade credit to compensate for the lending limitations to banks due to monetary contraction. This indicates that the trade credit and bank credit are vital two forms of financing sources for the company. Therefore in this study, we will analyze how does monetary policy affect the choice of credit companies listed on the Indonesia Stock Exchange and find out how far the relationship between financial resources used in financing the financial needs of the company.

II. METHODS AND MATERIAL

The type of data used in this study is secondary data in the form of panel data from 109 companies listed on the Indonesia Stock Exchange during 2015 to 2018. Data obtained from several sources such as Bank Indonesia and the Indonesia Stock Exchange. The method used was Two Stage Least Square with the simultaneous regression to find out how the impact of monetary policy on corporate credit choices.

The model used in this study was adopted from research conducted by Palancin- Sanchez et al. (2018) to analyze the role of monetary policy in the company's decision to use trade credit (TC) and bank credit (BC) and answer how the relationship between trade credit and bank credit. This was explained by the following structural equation:

$$TC_{it} = \alpha_0 + \alpha_1 BC_{it} + \alpha_2 SB7D_{it} + \alpha_3 EQUITY_{it} + \alpha_4 CASH_{it} + \alpha_5 INV_{it} + \varepsilon_{1it}$$

$$BC_{it} = \theta_0 + \theta_1 TC_{it} + \theta_2 SB7D_{it} + \theta_3 SBMK_{it} + \theta_4 INV_{it} + \theta_5 PROFIT_{it} + \varepsilon_{2it}$$

Where:

TC_{it} : accounts payable/total assets firm i year t

BC_{it} : bank credit/ total assets firm i year t

INV_{it} : inventory to total assets ratio of company i in year t

$CASH_{it}$: cash and cash equivalent to total assets ratio of company i in year t

$SB7D_{it}$: BI 7-day (Reverse) Repo Rate in year t

$SBMK_{it}$: the difference between the 7-day (Reverse) Repo Rate BI rate and the working capital loan rate

$PROFIT_{it}$: ratio between earnings before interest and tax to total assets of company i in year t

$EQUITY_{it}$: equity/ total assets of company i in year t

α_t and θ_t: coefficient of the variables

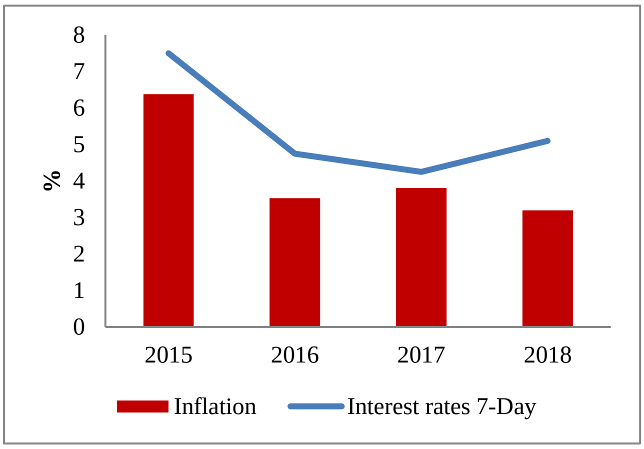
ε_{it} : error term

III.RESULTS AND DISCUSSION

The discussion in this study explains the results of the analysis related to the influence of monetary policy on corporate credit choices, the relationship of each credit used in 109 companies listed on the Indonesia Stock Exchange (IDX) in 2015 to 2018.

A. Development in Monetary Policy

Monetary policy in this study is illustrated by using a direct instrument, the 7-day interest rate. Monetary policy by setting the rate of interest can be directly affects the amount of domestic credit that can be channel by the banks, which in turn affects the amount of money in circulation. The 7-day interest rate instrument is expected to be able to influence the interbank money market (PUAB). The high interest rates on loans will affect the amount of credit extended, hence affect the money supply.



Source: Bank Indonesia (2019, processed)

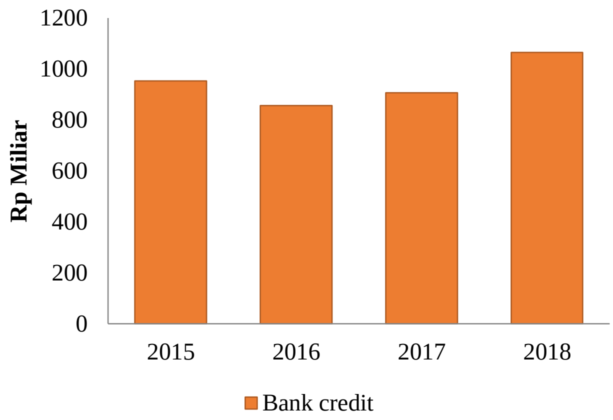
Figure 2 : Average movement of 7 Day interest rate and inflation rate 2015-2018

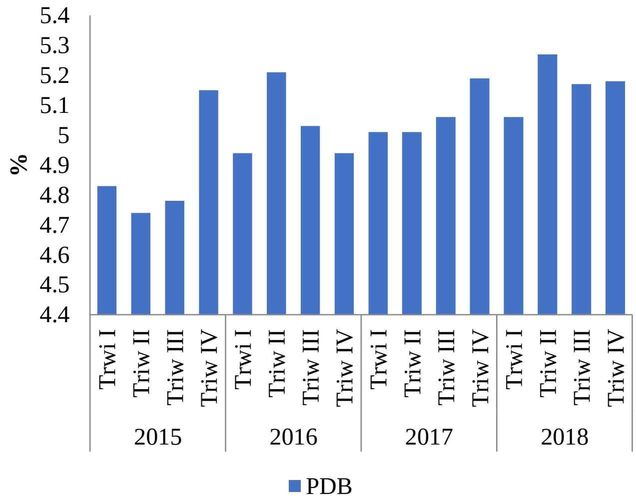
The framework used to implement monetary policy is the Inflation Targeting Framework (ITF) with the operational target used is interest rates. Based on Figure 2 can be seen that since 2015 the average Indonesia's inflation rate is relatively lower compared to interest rates. This finding then boost Bank Indonesia to lower the interest rates in 2016. The decline in interest rates is also expected to encourage bank lending as well as support the growth of sustainable economy until 2017. In 2018, Bank Indonesia decided to raise interest rates to strengthen the efforts to reduce the current account deficit to a safe limit. This increase is also as a form of anticipation for the increase in global interest rates that can cause weak attractiveness of domestic financial assets.

B. Development in Bank Credit and Trade Credit

Based on Figure 3, there was a decline in average lending on bank credit in 2015 to 2016, this was caused by slowing economic growth at the beginning of the first quarter of 2016 compared to the fourth quarter of 2015.

Based on Figure 3 it can be seen that in the IV quarter of 2016 (yoy) the rate of economic growth decreased by 4. 94% compared to the IV quarter of 2015 which was 5. 15%. This resulted the company to hold down on business expansion and investment in line with slowing economic growth even though interest rates in 2016 declined to 4. 75%, far lower than 2015's 7. 5%. Along with the increase in economic growth during 2017 which is in the range (5-5. 17)% followed by the gradually declining 7-Day interest rate to 4. 25% in 2017 then encourages credit loans to banks to increase and continue to grow until 2018.

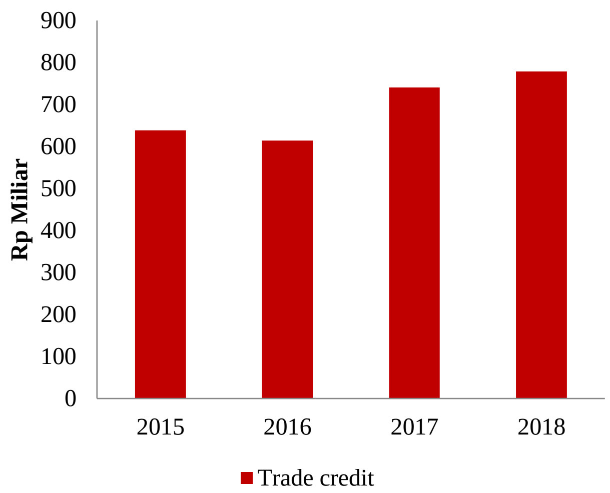


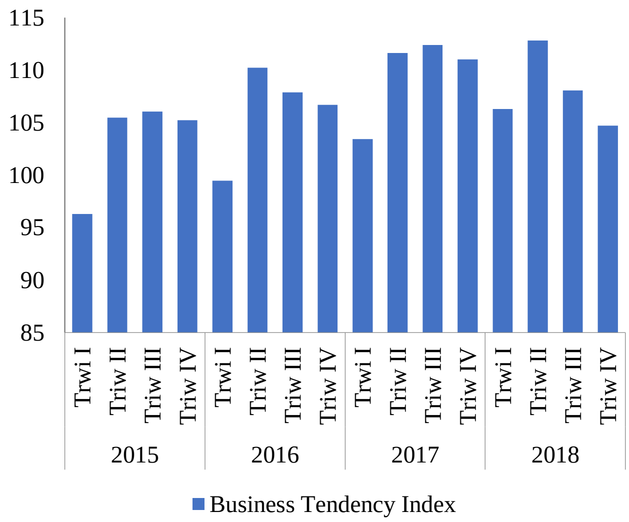


Source: Bank Indonesia (2019, processed)

Figure 3 : Average movement of bank credit and percentage economist growth in 2015-2018

Based on Figure 4, trade credit has decreased from 2015 to 2016. This decline is by a decrease in business optimisme about the economic outlook. This is reflected in the value of the business tendency index (ITB) in the first quarter of 2016 which was 99. 46 smaller than the previous quarter of 105. 22. The decline in ITB was influenced by economic conditions in early 2016 which slowed its economic growth so investors tended to wait for economic improvement. The trade credit in 2017 to 2018 increased in line with the increase in ITB whose index value is greater than 100 which indicates that the prospect of business conditions continues to improve. Increased businesses optimism encourages companies to continue to expand by increasing the amount of capital through the increase of trade credit.





Source: Indonesia Stock Exchange and Statistics Indonesia (2019, processed)

Figure 4: Trade credit movement and Business Tendency Index (ITB) in 2015-2018

C. The Impact of Monetary Policy on Trade Credit and bank Credit

Based on Table 1 the estimation results show that monetary policy has a positive and significant effect on trade credit. An increase in interest rates causes lending on trade credit to also increase. This result is in line with research from Fraser (2009) that alternative sources are used by companies to fund the financial needs of trade credit during the monetary contraction period during 2005-2008. Additionally, another alternative that can be done by companies during a monetary contraction according to McGuinness and Hogan (2014) to manage working capital to be more efficient is to postpone payment of input goods purchases to suppliers. This indicates that companies must increase the amount of lending on trade credit. Nilsen (2002) explains that during a monetary contraction not only do small companies increase the use of trade credit but large companies that have access to a weak capital market also increase their dependence on trade credit.

TABLE I

THE ESTIMATION RESULTS ON THE INFLUENCE OF MONETARY POLICY AND THE RELATIONSHIP BETWEEN TRADE CREDIT AND BANK CREDIT

Variabel	TC	BC
TC		-0. 428048*
BC	-1. 306644***	
SB7D	0. 001036**	-0. 000155
SBMK		0. 001417
EQUITY	-0. 417319***	
CASH	-0. 068500**	
INV	0. 099137	0. 148711*
PROFIT		-0. 56999***
R-squared	0. 956398	0. 975340
Prob (F-statistic)	0. 0000	0. 0000

Note: ** * Significant at 1% level

* * Significant at the 5% level

* Significant at the 10% level

Source: Results of processing using EVIEWS 9

The research from Kashyap and Stein (2000) found that monetary policy can affect the supply of credit through bank liquidity. Therefore, resulted in limited access to bank credit. Petersen and Rajan (1997) found that companies use more trade credit when credit from financial institutions is limited, this result is also confirmed by other researchers namely Garcia-Appendini and Montoriol-Garriga (2013) who find that companies that have high levels of liquidity will provide trade credit loans to other companies that have limited access to bank credit. This indicates that when there is a monetary contraction, namely an increase in interest rates, trade credit lending will increase. Fisman (2001) states that in developing countries where lenders from formal financial institutions are generally limited, causes trade credit to play an even more significant role in funding corporate activities.

Meanwhile, the estimation results also show that monetary policy measured using the interest rate of Bank Indonesia (BI) has a non-significant negative effect on bank credit. Oliner and Rudebusch (1995) stated that basically the actions of monetary authorities can influence consumption and investment through changes in interest rates. This result is in line with the findings of Jimenez et al. (2014) who found that when interest rates decline, banks will provide larger credit loans to all companies.

Holtemoller (2002) explained the presence of imperfect information and transaction costs causes a company's external financing to be more expensive than internal financing. The company has an important role in the credit market because it can influence the decision whether company expenses are financed with internally such as company profits or externally such as increasing the credit. The credit market is characterized by the existence of financial intermediaries namely banks that contribute in providing efficient financial sources. The contraction in monetary policy resulted in an increase in financing, especially loans to banks due to an increase in interest rates. Therefore, the demand for loans from banks has decreased due to high loan repayments along with high interest rates.

D. Relationship between Trade Credit and Bank Credit

Based on the estimation results in Table 1 which shows the relationship between trade credit and bank credit shows a negative and significant relationship. This indicates that there is a substitution relationship between bank credit and trade credit. This result is in line with the research from Casey and O'toole (2014) that there are restrictions from banks on applying for loans by companies where the application is rejected or receives less than 75% of the loan proposal submitted by the company so the company tends to use informal loans or loans from other companies.

Carbo-Valverde et al. (2016) using company-level data in Spain found that companies that were experiencing credit constraints during the crisis period had a dependency on trade credit but not on bank credit, and vice versa. McGuinness and Hogan (2014) found that companies in Ireland during the 2008-2011 crisis period received more trade credit from suppliers. This indicates that at the time of monetary contraction, trade credit has an important role in financing the financial needs of the company.

The empirical results in Table 1 also show that there is a significant negative effect between cash and trade credit. This result is in line with research from Yang (2011) and McGuinness and Hogan (2014) that cash has a negative effect on trade credit and bank credit. Cash is a form of internal financial resources as corporate cash reserves, when if there are limitations or a problem faced by the company, the company can use cash without having debt, this indicates the company's debt to other companies as well as to banks are low.

Net capital (equity) has a negative effect on both trade credit and bank credit. Equity is a source of funding for companies called the net worth obtained through the sale of company shares. A great equity of a company shows that company's health in financial management performance is good. The better financial performance means that financial needs are not deficient indicating that company loans will decrease both in trade credit and bank credit. Gaud et al. (2007) found that the operational performance and financial condition of a company influence the selection of loan policies from both debt and equity.

Inventory has positive effect on bank credit. Bougheas et al. (2008) stated that basically companies will face uncertainty in the level of demand for goods or services so that the goods and services available must be stored. Fisman (2001) described in his research that if there's volatility in demand resulting stocks are stacked above the limit then this will increase the cost of inventory storage. Therefore the company will increase lending on bank credit in order to meet the shortfall of capital needed to finance the high costs of inventory storage.

On the other hand, profit negatively affect loans to banks, this indicates that the more profit generated by the company, the need for capital can be covered by internal funds. The findings of Palacin-Sanchez et al. (2018) is also in line with this study where profit has a negative effect on bank credit. The greater profit also reflects that companies tend to avoid the problem of financing in carrying out company operations. Hence, lending to banks decreases.

IV.CONCLUSION

The interest rates as a measure of monetary policy has a positive and significant effect on trade credit. This shows that the type of funding from trade credit has an important role as an alternative source for bank credit. While the effect of monetary policy on bank credit has a negative but not significant. The relationship between demand for trade credit with bank credit is negative, which indicates that the two external financing sources are substitution. Suggestions for further research are expected to be able to classify types of companies that are classified as large and small so they can compare how the influence of monetary policy for small and large companies is the same or not. Classifying companies to small and large companies are also expected to eliminate heterogeneity.

V. ACKNOWLEDGEMENTS

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