The Analysis of Market Reaction
To Bank Indonesia Policy in Credit Sector

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Abstract— Credit policy implemented by Bank Indonesia is included in the published information (public information) that affect the prices of securities of all companies listed on the stock market. Bank Indonesia policy is said to contain information in case of changes in stock prices. The purpose of this research was to analyzing the market reaction to Bank Indonesia policy, which is seen from Abnormal stock Return, include CAR, AAR and CAAR. Analysis tools used in this research include descriptive analysis, normality testing and hypothesis testing. The results of this research show there are 10 companies which have positively significant to Bank Indonesia's credit policy. While the other 3 companies have negatively significant to Bank Indonesia's credit policy.

Keywords— Abnormal Return, BI Policy, Credit

I. INTRODUCTION

BANKING intermediation function has changed as a result of changes in the economic environment and financial market developments, mainly in developed countries, such as countries in the European Union (Bikker & Wesseling, 2003). The development of information technology, deregulation, liberalization, internationalization of a factor theories of financial intermediation becomes irrelevant to the business practices going on right now (Scholtens & Wensveen, 2003).

Koch (2000) states that the function of a bank as intermediary specializing in lending plays an important role for the movement of the overall economy and facilitate economic growth. Where the macroeconomic level banks were instrumental in setting monetary policy, while at the micro level of the economy banks are the main source of financing for entrepreneurs and individuals. Renniwaty (2012) explains that the credit quality is still dominating share of consumer credit. As for the credit growth for productive activities working capital and long-term nature of investment growth is lower than consumer credit. Besides, he also mentioned that bank intermediation is not optimal, both from the ability to raise funds and the quality of loans.

Finance Minister Agus Martowardojo confirmed that Indonesia's economy grew above the average of other countries, even though the government had to revise the growth target. When other countries difficult, the average economic growth was above 6 percent. It's a good achievement amid tough global situation. Besides relying on consumption, economic growth next year will be supported by investments in larger quantities. The high investment has reflected this year. From January to September 2012, investment grew 27 percent over the previous year.

The existence of the banking industry that are less healthy, not strong and inefficient is a need for a change, especially in managing credit. According to the Credit Bureau, the banking industry development policy in the future aimed at achieving a sound banking system, strong and efficient financial system in order to create stability which in turn will help drive the national economy sustainable. Starting from this, in order to boost economic growth through lending, Bank Indonesia since 2006, felt the need to support the banking intermediation function.

Bank Indonesia Regulation (2012) mentions that it can keep the economy productive and able to face the challenges of the financial sector in the future, the need for policies to strengthen the resilience of the financial sector to minimize the sources of vulnerabilities that may arise, including the growth of mortgage and KKB excessive. This policy is carried out by setting the amount of the Loan to Value (LTV) for mortgages and Down Payment (DP) for the motor vehicle credit.

The effect of Bank Indonesia policy imposed on banks abnormal stock return is one factor that makes the interest as a basis for this research. In the area of credit, Bank Indonesia made a policy to create a more robust banking sector, financial stability becomes healthier, and the work program of effective and efficient in interacting with customers. Increasing credit in the property (house) and motor vehicles as one reason for Bank Indonesia policy implementation in terms of credit.

The purpose of this research was to analyze the development of credit sector, the market reaction to Bank Indonesia policy, LQ-45 stock index and to analyze abnormal return as proof that it contains information that seen from the difference in price (return) shares.

Credit

The definition of credit was diverse. The meaning of the word "credit" comes from the Greek "credere" which means "trust" (to believe/to trust) or in Latin "creditum" which means belief in the truth. Based on Law No.10 of 1988 concerning amendments to the Act 7 of 1992 on Banking, which is a credit is "the provision of cash or the equivalent claims that, based on agreements between bank lending and other parties that requires the borrowers to repay their debts after a certain period of time with interest".

While credit terms have been defined in the Banking Act No. Principal. 10 of 1998 page 10, "the supply of money or credit is equivalent claims to it, based on an agreement between bank lending and other parties that requires the borrower to pay off debts after a certain period of time with interest". From the description above understanding, it can be deduced as follows:

a. There is a transfer of money (goods) that accrue to other parties, in the hope of making loans, banks will gain an additional principal value of the loan in the form of interest income for the bank.

b. Of the loan process that was based on a mutual agreement that both parties believe will comply with their respective obligations.

Contained in this credit agreement debt repayment and interest will be completed within a period of time mutually agreed. Types of Credit on Basic Purposes, consisting of:

a. Working Capital Loan (WCL)

Credit was used to finance working capital clients. WCL is usually short-term and long turnaround time adjusted with clients working capital.

1. WCL-Revolving

If the customer's business activities can take place in a sustainable manner over the long term and the bank just trust the ability and willingness of the customer, then the customer may be extended working capital facilities each period without having to apply for new credit.

2. WCL-Einmaleg

If the volume of business debtors extremely fluctuates from time to time and the bank's ability and willingness to trust less the debtor, then the bank provides only a one-time working capital turnover period.

b. Credit Investment (KI)

Credit is used for long-term procurement of capital goods for business customers.

c. Consumer Loan

Credit is used in the context of the procurement of goods or services for consumption purposes, and not as capital goods in the customer's business activities.

Bank Indonesia Policy

Bank regulation and supervision aimed at optimizing the Indonesian banking functions as:

1. Institutions of public trust in relation to a body collector and distributor of funds;

2. Implementing monetary policy;

3. Institutions that played a role in assisting economic growth and equity in order to create a sound banking system, both the banking system as a whole or individually, and be able to maintain the interest of the community well, develop naturally and benefit the national economy.

To achieve these objectives by applying the approach taken:

1. Policy provides flexibility tried (deregulation);

2. Prudential policy bank (prudential banking), and

3. Bank supervision that encourages banks to implement internal regulations consistently made themselves (self-regulatory banking) in carrying out its operations with reference to the precautionary principle.

The regulation and supervision by the Bank include the following powers:

1. Authority to give permission (right to license)

The authority to establish licensing procedures and the establishment of a bank. Coverage includes BI licensing by licensing and revocation bank, granting the opening, closing and transfer of bank offices, granting approval of the ownership and stewardship of the bank, giving the bank permission to carry out certain business activities.

2. The authority to regulate (right to regulate)

The authority to establish regulations concerning aspects of the business and banking activities in order to create a healthy bank that is able to meet the public wants banking services.

3. Authority to supervise (right to control)

The authority to supervise banks through direct supervision (on-site supervision) and indirect supervision (off-site supervision). Direct supervision can be a general inspection and special inspection, which aims to get a picture of the financial condition of the bank and to monitor the bank's compliance with applicable regulations and to determine whether there are practices that do not harm the healthy survival of a bank. Indirect supervision is oversight through monitoring tool such as periodical reports submitted bank examination report and other information. In practice, when necessary BI to conduct examination of banks, including other parties include the parent company, subsidiaries, related parties, and the debtor bank affiliated parties. BI may assign another party on behalf of BI carry out inspection tasks.

The authority to impose sanctions (right to impose sanction) Authority to impose sanctions in accordance with the statutory provisions of the bank if the bank is less or not comply. This action contains elements of coaching that banks operate in accordance with sound banking principles. Risk management applied to Bank Indonesia as the Central Bank of the Republic of Indonesia is a step that must be done to save the financial system stability in Indonesia. Banking is a

container and the proper tools to keep the economy and state finances in order to stay healthy.

According Sawir (2005) LDR to determine the ability of the bank to repay its liabilities to its customers who had invested their funds by pulling back credits given to the debtor. Analysis of liquidity is intended to measure how much the bank's ability to pay its debts and pay back the depositors and to fulfill the demand of the proposed loan without any delay.

Market Reaction

Event study is an observation of the movement of stock prices in the stock market to see if there are abnormal returns obtained shareholder result of a particular event (Peterson, 1989 in Suryawijaya and families & Setiawan, 1998). Observation is usually done by looking at the behavior of stock returns around the events observed. While Jogiyanto (2003) states that an event study study study the market reaction to an event (event) whose information is published as an announcement.

The purpose event study mentioned by Kritzman (1994) was to measure the relationship between an event that affects securities and the return of the securities. Besides event study can also be used to measure the economic impact of an event on firm value (Mackinlay, 1997). Lamasigi (2002) concluded that the event study was developed to analyze the market reaction to an event that the information published. These events include economic events and noneconomic events to determine if there is abnormal return obtained shareholders. In addition, the event study can also be used to test the information content of an event or announcement. If an event or announcement contains information on the market will react when the announcement was received by the market. The market reaction is indicated by a change in price of the securities concerned. The reaction is usually measured by using the concept of abnormal return.

In determining the market reaction, necessary to have a variable that can help measure the information content derived from a company's stock price changes. From the data in each event period abnormal return can be calculated Cummulative Abnormal Return (CAR), Average Abnormal Return (AAR), and Cummulative Average Abnormal Return (CAAR). According to R. Andi Sularso (2003), Cummulative Abnormal Return (CAR) is the accumulation value of the abnormal return, while the Average Abnormal Return (AAR) is the average value of the abnormal return. Meanwhile, Cummulative Average Abnormal Return (CAAR) is accumulated the average value of the abnormal return.

LQ-45 Index

Stock price index is an indicator of the stock price movement or reflection. Index is one of the guidelines for investors to invest in the stock market, especially the stock. The research highlights the companies whose shares are actively traded, with stock index LQ-45 may be the basis benchmark stock index (Silvano, 2004). LQ-45 Index is an index that saw the company's liquidity where there are 45 companies selected were seen routinely every 2 times a year.

LQ-45 index liquid containing 45 companies that trade volume seen from www.kontan.co.id.

LQ-45 index consists of 45 companies with liquidity high, selected through several selection criteria. In addition to an assessment of liquidity, the selection of these issuers also considers market capitalization. Since its launch in February 1997 the primary measure of liquidity is the transaction value of transactions in the regular market (www.bi.go.id). In accordance with market developments and to further refine the criteria of liquidity, since the review in January 2005, the number of trading days and the frequency of transactions included as a measure of liquidity. So the criteria of an issuer to be included in the calculation of LQ-45 is considering the following factors:

1. It has been listed on the Stock Exchange at least 3 months
2. Transaction activity in the regular market value, volume and frequency of transactions
3. The number of trading days in the regular market
4. Market capitalization at the specified time period

Besides considering the criteria of liquidity and market capitalization above, will be seen also the financial condition and growth prospects of the company. Indonesia Stock Exchange regularly monitor the performance of issuers included in the index calculation LQ-45. Every three months to evaluate the movement of the shares sequence. Replacement stocks will be conducted every six months, at the beginning of February and August.

II. METHODOLOGY

To investigate the influence of Bank Indonesia policy towards banks abnormal stock returns, then testing the individual return policy before and after BI is applied, with the following steps:

1. Determining *Abnormal Return* (AR)

Abnormal return is the difference between the actual return and the return expectations. To determine the abnormal return of each stock during the period of observation by using the following formula: (Manurung, 1997).

$$AR = R_{it} - E(R_{it})$$

Description:
AR_{it} = Abnormal Return stock i in period t
R_{it} = Return on an individual stock i in period t
$E(R_{it})$ = Expected rate return on the stock i in period t

As for determining the rate of return of each stock using the following formula: (Manurung, 1997).

$$R_{it} = Ln \frac{P_t}{P_{t-1}}$$

Description:
R_{it} = Return on stock i in period t
P_t = Stock price i in period t
P_{t-1} = Stock price i in period t-1

For determining the expected rate of return on stocks (expected return) used market adjusted model. Return expectations represented by the return of LQ45 market indices, obtained through the following steps (Jogiyanto, 2000: 428):

$$E(R_{it}) = Rm_t$$

Description:
$E(R_{it})$ = Expected stock return of firm i period t
Rm_t = Market return at time t

2. Determine *Cummulative Abnormal Return* (CAR)

Cummulative Abnormal Return (CAR) is the accumulation of the abnormal stock return all periods. To determine the daily CAR each stock during the event period can use the formulation:

$$CAR = \sum_{t-10}^{t+10} = AR$$

Description:
CAR = Cummulative Abnormal Return
AR = Abnormal Return

3. Determine *Average Abnormal Return* (AAR)

Average Abnormal Return (AAR) is the average abnormal stock returns. To determine AAR shares daily during the event period can use the formulation:

$$AAR = 1/n \sum_{t=1}^{n} AR(it)$$

Description:
AAR = Average Abnormal Return
AR (it) = Return the stock i in period t

4. Determine *Cummulative Average Abnormal Return* (CAAR)

Cummulative Average Abnormal Return (CAAR) is an accumulation of the average abnormal stock returns. To determine CAAR portfolio during the event period can use the formulation:

$$CAAR = \sum_{t-10}^{t+10} = AAR(it)$$

Description:
CAAR = Cummulative Average Abnormal Return
AAR (it) = Average Abnormal Return stock i in period t.

Data analysis tools used in this research include descriptive analysis, normality testing, and hypothesis testing.

III. RESULT AND DISCUSSION

In descriptive statistics will be explained about the data examined in this research. The data examined in this research in the form of data abnormal return. Abnormal return is obtained from the difference between actual returns with return expectations.

The statistics show the minimum, maximum, mean, and standard deviation of the company's shares on the LQ-45 were sampled. Table 1 shows that the statistical minimum amount of

shares owned -0.175727 BMRI, while the maximum statistic of 0.0854961 shares owned BDMN. The lowest standard deviation value of shares owned 0.0097856273 BMRI, while the standard deviation of the highest-value 0.370399171 shares owned ELTY.

Abnormal stock returns vary each period. This causes movement of CAR, AAR and CAAR also changing. that the movement takes place CAR fluctuate in each period. It had declined drastically in the H-6, but moved up to H+9.

While AAR stable movement takes place around the number 0. On the other hand CAAR movement declined, especially after the H-6 where the peak is at a period where the value of H+8 CAAR touched the lowest score of less than -0.05. Shares incorporated in the sample are shares of companies with mortgage-related sectors and motor vehicle credit, namely:

1. Property and real estate

The property is a residential building which over time increased credit demand from the community, so it can be rated that could be the effect of the application of credit policy of Bank Indonesia. The company's shares are included in property and real estate sector are as follows:
  a. ASRI (Alam Sutera, Tbk)
  b. ELTY (PT Bakrieland Development, Tbk)
  c. KIJA (Jababeka Industrial Estate, Tbk)
  d. LPKR (PT Lippo Karawaci)

The Abnormal Return sector property and real estate tends to fluctuate, but when Bank Indonesia policy came into effect (H+1 to H+10) AR graph tends to increase with the effect arising from the implementation of the policy of Bank Indonesia.

2. Banking

Banking may be the assessment/variables and to be an influence of the credit policy of Bank Indonesia as a place to serve customers in and out and give credit, especially mortgages and motor vehicle credit. The shares of companies included in the banking sector are as follows:
  a. BBCA (PT Bank Central Asia, Tbk)
  b. BDMN (PT Bank Danamon Tbk)
  c. BMRI (PT Bank Mandiri, PT)
  d. BBNI (PT Bank Negara Indonesia, Tbk)
  e. BBRI (PT Bank Rakyat Indonesia Tbk)

The Abnormal Return banking sector stocks tend to fluctuate, but when Bank Indonesia policy came into effect (H+1 to H+10) stable AR chart.

3. Transportation, Toll Roads, Automotive & Components

Transport, toll roads, the automotive and components sector is also a stock that may be the effect of the credit policy of Bank Indonesia, particularly the Motor Vehicle Credit, as it relates directly to the transport, roads and vehicles.

The company's shares are included in the transport sector, highways, autos and parts are as follows:

a. TRAM (PT Trada Maritime Tbk)
b. JSMR (PT Jasa Marga Tbk)
c. ASII (PT Astra International, Tbk)
d. GJTL (PT Gajah Tunggal Tbk)

TABLE 1:
HYPOTHESIS TESTING

	Std	t-count	Hypothesis
ASRI	,02329988	-1,321	Accepted
ASII	,01809955	,233	Rejected
BBCA	,01283733	-,033	Accepted
BDMN	,02619432	,668	Rejected
BMRI	,00978563	-,030	Accepted
BBNI	,01291205	-,181	Accepted
BBRI	,02018902	,788	Rejected
ELTY	,03703992	-2,181	Accepted
KIJA	,01723916	-1,855	Accepted
LPKR	,01579920	-,433	Accepted
GJTL	,01656219	-1,555	Accepted
JSMR	,02014850	,038	Accepted
TRAM	,01713089	,040	Accepted

Source: Processing of SPSS (2013)

The Abnormal Return sector transportation, toll roads, the automotive and components tend to fluctuate, but when Bank Indonesia policy came into effect (H+1 to H+10) AR graphs tend to slightly increase, despite the negative sentiment due to the influence of the arising from the application of Bank Indonesia policy.

Hypothesis testing performed in this research is the t test. To determine the value of t table specified significant level of 5% (95% confidence interval) with degrees of freedom df = (nk) where n is the number of observations and k is the number of variables including the constant. Basic test decision is as follows:

If t count < 0.05, H0 is accepted
If t count > 0.05, H0 is rejected

In the t test, t value table can be seen in the table coefficients column sig or significance in the processing of the SPSS program. The value of the standard deviation, t-count and the results of hypothesis testing of each of the sampled stocks, can be seen in Table 1.

Table 1 above shows the results of testing the hypothesis of 13 stocks of companies that were sampled where most significant (hypothesis accepted) to Bank Indonesia. Only 3 shares of companies that had no significant effect (hypothesis is rejected), namely ASII, BDMN and BBRI.

IV. CONCLUSION

Credit policy implemented by Bank Indonesia is included in the published information that affect the prices of securities of all companies listed on the stock market. Bank Indonesia policy is said to contain information in case of changes in stock prices. Changes in stock prices as a result of investor reaction was measured using the abnormal return. Investor reaction that caused the stock price change is what meant by the market reaction.

Through the abnormal return calculation, the results showed a significant effect of the adoption of the policy of Bank Indonesia, where the stokes of 13 companies associated with the Mortgages and Motor Vehicle Credit, 10 of stocks had positive effect on BI policy, which means that there is significant information content of Bank Indonesia policy. While the three other stocks that ASII, BDMN and BBRI lack of positive influence, which means that it doesn't contains significant information on that 3 stocks.

LQ-45 Index as well as the basis for determining a benchmark in setting and see the reaction of the market price changes (returns) shares through the information content is seen abnormal return. LQ-45 stock index is an index that measures 45 stocks actively traded companies and are regularly assessed periodically every 6 months.

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