

**THE ANALYSIS OF MARKET DISCIPLINE IN INDONESIA'S BANKING
INDUSTRY**

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ABSTRACT

The purpose of this research was to analyze the effect market disciplines in Indonesia's Banking Industry on specific variables, including Capital Adequacy Ratio (CAR), Return on Asset (ROA), Non-Performing Loan (NPL), Loan to Deposit Ratio (LDR), Foreign Owner (FO), Total Asset (TA), and Disclosure Index (DI). The data used in this study was annual data on 2016 taken from Financial Services Authority and Bank Indonesia. This study used regression cross section analysis with the help of a computer program, Stata version 14.2, as the main software to process the research data.

The results showed that some of the independent variables (LDR, TA, DI) are significantly affected the change in the Capital Adequacy Ratio. While the other independent variable (ROA, NPL, FO) doesn't have any effect on CAR. Therefore the analysis for this variable was being done descriptively. In other words, it can be concluded that not all the independent variable are have effect on CAR. Therefore, Loan to Deposit Ratio (LDR), Total Asset (TA), and Disclosure Index (DI)¹ has affected by the CAR variable on Market Discipline in Indonesia's Banking Industry.

Keyword: NPL, CAR, ROA, LDR, Disclosure Index

INTRODUCTION

The failure of a company, especially the one engaging in banking sector can be seen and measured. Among those measurements, financial performance can be utilized by analyzing its financial statements. Analysis of financial statements is a significantly important tool for obtaining information related to the company's financial position and the results achieved on its connection with the selection of the company's strategy to be applied. By analyzing a company's financial statements, the director can have knowledge of the state and financial developments of the company as well as the accomplished and targeted results. In addition, by conducting financial analysis, the company's weaknesses and potential failures can be identified. By understanding the possibility of any occurring financial difficulties as early as possible, management can anticipate by taking necessary steps. However, other information related to macro variables becomes also very important and needs to be taken into account.

In the last two decades before the global crisis that hit all business sectors, several developed and developing countries experienced a crisis in the banking sector. To avoid such a crisis, regulators need a way to determine a wise move for the banking sector. The usual standard recommendations for facing the crisis is to tighten controls and regulations. In addition to supervision carried out by the banking authorities, an alternative means of solution is offered by increasing trust in the mechanism of market discipline to provide control of the banking system. Market discipline is defined as the level of general public awareness and community as banking customers towards the conditions being faced by the banks directly related to savings and investment customers. Information about the condition of the banking industry becomes a signal for investors in various ways, one of them is through the disclosure of financial information published. The availability of this information is summarized in the form of disclosure index (DI). In general, disclosure index in this study consists of 36 items representing the disclosure of credit risk, market risk, liquidity risk, operational risk, legal risk, reputation risk, strategic risk and compliance risk.

This study also utilizes several variables that describe the performance of the bank's CAR, NPL, and ROA. It is apparent that on average, banks in BUKU 1 have the highest CAR followed by BUKU 2, 4 and 1. To sum up, BUKU 1 banks indicates banks with the greatest capital strength compared to other

BUKU groups. The highest profitability performance shown by the BUKU 4 group is followed sequentially by the BUKU 3, 2 and 1 groups indicating that the average BUKU 1 ROA is minus. The data demonstrate that the capital strength possessed by the BUKU 1 group is not matched by good profitability performance. Furthermore, the best credit performance is shown by the BUKU 3 group followed by the BUKU 2, 4 and 1 indicating that credit management was well-conducted by the BUKU 3 group. The relatively high credit risk is in the BUKU 1 group.

Table 1.1 Information Disclosure and Banking Industry Performance Based on BUKU group

BUKU	Rerata DI	Rerata CAR (%)	Rerata NPL (%)	Rerata ROA (%)
1	30	22,5	3,1	(2,1)
2	32	22,3	1,9	1,9
3	33	19,5	1,7	1,5
4	36	20,7	2,4	2,6

Source : OJK

Through exposure to the availability of financial information and performance of bank, it descriptively informs relatively diverse conditions. BUKU 4 group with the most complete information disclosure is successful in presenting expected profitability performance compared to other BUKU groups. BUKU 1 group presents the smallest relative disclosure of information despite managing to show the greatest capital strength among the other BUKU groups.

Based on the background and above problems, the author determines the title of thesis of **"The Analysis of Market Discipline in Indonesia's Banking Industry"**. Proxies for factors that affect the CAR in this study are LDR, NPLs, ROA, Disclosure Index, Total Assets and Foreign owner. This study utilizes the cross-section data in 2016.

LITERATURE REVIEW

Capital Adequacy Ratio (CAR)

Manullang (2002) stated that the capital ratios that are commonly used to measure the health of the banks is the Capital Adequacy Ratio (CAR). The amount of CAR is measured by the ratio between own capital and Risk Weighted Assets (RWA). In accordance with SE BI No. 26/5/BPPP dated May 29, 1993 the amount of CAR that must be achieved by a bank is at least 8% since the end of 1995. However, due to the deteriorating condition of the national banking system marked by the number of liquidated banks, since October 1998 the CAR was classified in 3 groups. Bank classifications since 1998 are grouped in: (1) Healthy banks with classification of A, if they have CAR of more than 4%, (2) Banks take over or in restructuring by IBRA (Bank Restructuring Agency) with classification of B, if the bank has CAR of between -25% up to <of 4%, (3) Frozen Operation Bank (BBO) with classification of C, if they have CAR of less than -25%. Thus, bank with classification of C is liquidated. Mathematically CAR can be formulated as follows:

Own capital is the total capital originating from the company (bank) which consists of paid-up capital, non-divided profits and reserves formed by the bank. RWA is the sum of RWA assets and balance sheet assets of administrative assets. ATMR balance sheet assets are obtained by transferring the nominal value of the asset with the risk weight. RWA for administrative assets is obtained by transferring its nominal value to the risk weighting of administrative assets (Manullang, 2002). The more liquid, the risk assets are zero and the more illiquid the risk is 100, ranging from 0 - 100%.

Return On Asset (ROA)

Return on assets (ROA) is utilized to measure the effectiveness of the company in generating profits by exploiting assets / assets owned. This ratio becomes the most important ratio in the profitability obtained by comparing the earnings before interest tax (EBIT) to total assets. EBIT is net income before interest and tax, total assets are total assets of the company from the beginning of the year and the end of the year. Greater value of ROA indicates better performance, due to higher return rate (Robbert Ang 1997).

The total assets commonly applied to measure the ROA of a bank are the amount of productive assets consisting of the placement of securities (such as Bank Indonesia Certificates, Money Market Securities, placements in other company shares, placements in Call Money or Money Market) and placement in the form of credit (consumptive and productive credit to individuals and institutions or companies).

Non Performing Loan (NPL)

Higher NPL affects higher loan interest to have the potential to reduce interest income and CAR. NPL is a ratio to measure a bank's ability to disprove the risk of failure of credit repayments by debtors (Komang Darmawan, 2004). NPL reflects credit risk, by which the smaller the NPL, the smaller the credit risk is borne by the bank. Banks in providing credit must analyze the ability of the debtor to repay its obligations. After credit is granted, banks must monitor the use of credit and the ability and compliance of the debtor in fulfilling its obligations.

The bank conducts reviews, evaluations, and bindings of collateral to minimize credit risk (Masyhud Ali, 2004). Previous study (Bahtiar Usman 2003) was conducted to investigate the effect of NPL for bank performance examining the effect of NPL on CAR. The study demonstrated that NPL did not have a significant effect on CAR so further research was needed.

Loan to Deposit Ratio (LDR)

Loan to Deposit Ratio (LDR) reflects the ability of banks to channel third party funds on credit or a type of credit, and if it is not channeled, idle money will arise which will result in low opportunity costs and changes in earnings. LDR becomes a ratio that measures the ability of banks to fulfill financial obligations to be fulfilled immediately. The obligation is in the form of call money which must be fulfilled when there is a clearing obligation, where the fulfillment is carried out from the current assets owned by the company. The liquidity ratio as utilized in companies generally applies to banks. However, the difference in banking liquidity is not measured by Acid Test Ratio or Current Ratio. However, there are special measures to determine bank liquidity in accordance with Bank Indonesia regulations. The liquidity ratio commonly used in the banking world is the Loan to Deposit Ratio (LDR). The magnitude of the LDR follows the development of

Indonesia's economic conditions, and since the end of 2001, banks were considered healthy if the LDR was between 80% and 110% (Masyhud Ali, 2004).

Foreign Owner (FO)

According to Law Number 25 of 2007 article 1 point 6, foreign ownership is foreign individuals, foreign business entities, and foreign governments that invest in the territory of the Republic of Indonesia. Thus, foreign ownership is the ownership of the company by foreign investors.

Total Asset (TO)

Total Asset is a ratio used to measure the turnover of all assets owned by a company, and the number of sales obtained from each rupiah of assets (Kasmir, 2010). According to (Lukman 2011), Total Asset presents the level of efficiency of the overall utilization of company assets in generating certain sales volumes. Thus, it is concluded that Total Assets is about how companies efficiently utilize all assets owned by the company by creating sales to generate profits. Sales is the revenue from the sale of products such as the delivery of goods or the provision of services provided (Irham Fahmi, 2012). Assets are resources controlled by a company with the aim of generating profits.

Disclosure Index (DI)

According to Siegel and Shim (1994) in (Jurniarti and Frency, 2003), disclosure is information provided as an attachment to financial statements in the form of footnotes or additional information. Information as an attachment referred to in the financial statements provides a more complete explanation of the financial position and results of the company's operations. In addition, Suwardjono (2005) defines disclosure is the presentation of other relevant information contained in the basic financial statement.

Hypotheses

H1: It is suspected that there is a significant effect of ROA on CAR

H2: It is suspected that there is a positive effect on LDR on CAR

H3: There is a significantly negative effect of NPL on CAR

H4: There is a significantly positive effect of TA on CAR

H5: There is a significantly negative effect of FO on CAR

H6: There is a significantly positive effect of DI on CAR

RESEARCH METHODOLOGY

This study utilizes a quantitative descriptive approach to emphasize the form of calculations in formulation and to focus on testing the hypothesis. The place that became the object of this research was INDONESIAN BANKING with observation time from 2016. Approximately 38 BANKS were chosen as research objects based on existing data. The type of data in this study is secondary data, in the time of research of 2016. Secondary data is data obtained or collected and put together by previous studies or published by various other agencies. The data is processed by using a tool that can reveal the answers and the desired results to reveal the problem in the study. This study used regression cross section analysis with the help of a computer program, Stata version 14.2, as the main software to process the research data.. The data to be used in this study are data on bank or financial institutions and capital markets that are listed on the Indonesia Stock Exchange.

According to Nasir (1999), operational definitions are presented to variables by giving meaning or specifying activities or by providing operations needed to measure these variables:

CAR / CAPITAL ADEQUACY RATIO (Dependent variable)

It is a changeably variable or factor if there is a change in the independent variable; in other words, this variable is influenced by the independent variable. In this study the dependent variable is CAR throughout Bank Indonesia in units of percent.

Independent Variables (Independent Variables)

It is a variable or factors that become input where its existence can influence the dependent variable. In this study, the independent variables consist of:

- a. ROA / RETURN ON ASSETS (X_1): to measure the effectiveness of the company in units of percent.

- b. NPL / NON-PERFORMING LOAN (X_2): to measure a bank's ability in units of percent.
- c. LDR / LOAN TO DEPOSIT RATIO (X_3): to channel third party funds on credit or a type of credit in units of percent.
- d. DISCLOSURE INDEX / DI (X_4): as an attachment to financial statements in the form of footnotes or additional information in units of percent.
- e. FOREIGN OWNERSHIP / FO (X_5): to describe the level of capital of financial institutions owned by foreign companies in the form of percent.
- f. TOTAL ASSET / TA (X_6): to describe the size of financial institutions in the form of percent.

The following formulas are the main models that will be tested in this study (Hamid & Jonah 2017):

$$CAR_{i,j,t} = a_0 + b_1ROA_{i,j,t} + b_2NPL_{i,j,t} + b_3Total\ Asset_{i,j,t} + b_4Disclosure\ Index_{i,j,t} + b_5ForeignOwnership_{i,j,t} + b_6LDR_{i,j,t}$$

Wherein:

CAR = Capital Adequacy Ratio

ROA = Return on Asset

NPL = Non-Performing Loan

LDR = Loan to Deposit Ratio

Total Asset = Total Asset Size

Disclosure Index = Index of disclosure of financial information

Ownership = Ownership

b (1 ... n) = Regression coefficient of each independent variable

RESULT AND DISCUSSION

Result of Regression

There are several factors that influence CAR on market discipline in the Indonesian banking sector including: ROA, LDR, NPL, LTA, FO, and DI presented separately by using regression cross section. The results are as follows:

CAR (Capital Adequacy Ratio)	Coefficient	P> t
ROA (Return on Asset)	-0.038	0.927
NPL (Non Performing Loan)	-0.115	0.543
FO (Foreign Owner)	-0.004	0.839
LLDR (Log Loan to Deposit Ratio)	-0.129**	0.058
LTA (Log Total Asset)	-0.012**	0.035
LDI (Log Disclosure Index)	0.202**	0.035

*Standard errors in parentheses and *** p<0.01, ** p<0.05, * p<0.1

Based on the results of STATA14, the cross-section regression is taken as follows:

F Test

The results of the F Test are applied to simultaneously see the independent variables affecting the dependent variable. Based on the results of the f test, it is known that the significant value is smaller than the alpha of 5% or 0.05.

Partial Test (t Test)

The results of the t test are employed to measure the individual influence of an independent variable on the dependent variable. The results of the t test presented in the table above, indicating that:

- The significant value of the ROA variable (X_1) is 0.927. This value is greater than the required alpha of 5% or 0.05. Thus, H_0 is accepted and H_a is rejected. In conclusion, ROA partially has significantly

positive effect on CAR for every 1% increase in ROA will reduce CAR by -0,0387909.

- b. The significant value of the NPL variable (X_2) is 0.543, which is greater than the required alpha of 5% or 0.05. Therefore, H_0 is accepted and H_a is rejected, concluding that NPL partially has no significantly negative effect on CAR, for every 1% increase in NPL will decrease CAR by -0.1158902.
- c. The significant value of the FO variable (X_3) is 0.839, which is greater than the required alpha of 5% or 0.05. Thus, H_0 is accepted and H_a is rejected, summarizing that FO partially has no significantly negative effect on CAR, for every 1% increase in FO will decrease CAR by -0.0043064.
- d. The significant value of the LLDR (X_4) variable is 0.058, which is greater than the required alpha of 5% or 0.05. Thus, H_a is accepted and H_0 is rejected, concluding that LLDR partially has a significant positive effect on CAR, for every 1% increase in LLDR will reduce CAR by -0.1290483.
- e. Significant value of the variable LTA (X_5) is 0.035, which is greater than the required alpha of 5% or 0.05. Thus, H_a is accepted and H_0 is rejected, concluding that LTA partially has a significantly positive effect on CAR, for every 1% increase in LTA will decrease CAR by -0.0126816.
- f. The significant value of the LDI variable (X_6) is 0.035, which is greater than the required alpha of 5% or 0.05. Thus, H_a is accepted and H_0 is rejected, concluding that LDI partially has a significantly positive effect on CAR, for every 1% increase in LDI will increase CAR by 0.2027922.

Economic Analysis

The Indonesian economy in 2016 remained strong amid the unstable global economic conditions with. These developments were influenced by the dominant structure of domestic demand sustaining adequate policy responses. The combination of these two things in turn can influence the risk of the impact of unstable world economic growth, low global commodity prices, and the uncertainty of world financial markets that remain high.

Indonesia's economic growth in 2016 increased from 4.9% in 2015 to 5.0%, bolstered by sustained economic stability characterized by low inflation, a declining current account deficit, a controlled rupiah exchange rate, and financial system stability with low systemic risk.

Overall, the economic dynamics of 2016 indicated positive progress in the Indonesian economy. Economic stability maintained as a consistency of policies, was previously pursued as a strong foundation for the ongoing process of adjusting the domestic economy and encouraging economic growth in Indonesia in an increasing trajectory.

The achievement of Indonesia's 2016 economic growth is different from the growth performance of several under-developed countries. In addition, structural policy synergies are also increasingly solid. This policy synergy can support the process of economic recovery and strengthen medium-term economic resilience.

Policies made by the Government, Bank Indonesia, and the OJK as well as the role of large domestic demand can direct Indonesia's economy in 2016 to remain stable. The combination of these two factors can minimize the risks that arise from less favorable global conditions. The economic structure of around 60%, is sustained by private consumption, which is able to minimize the impact of the external sector performance that has not been strong. The role of largely private consumption is also inseparable from fiscal, monetary and macro prudential policies, as well as the positive impact of controlled economic and financial system stability.

The financial system conditions in 2016 remained stable, supported by high liquidity and bank capital, as well as improved performance in the bond market and capital market. However, Financial System Stability (SSK) in 2016 faced challenges, especially in the form of increased credit risk. The slowdown in corporate performance affected by the decline in global commodity demand and prices, as well as the lack of strong domestic economic growth have encouraged corporations to carry out internal consolidation and delay business expansion. This condition led to an increase in credit risk and lowered the performance of bank intermediation in 2016. Increased credit risk encouraged banks to be more careful in lending new loans and prioritizing internal consolidation rather than credit expansion.

Loan to Deposit Ratio (LDR) reflects the ability of banks to channel third party funds of credit, and if it is not channeled, idle money will arise resulting in low opportunity costs and changes in earnings. LDR is a ratio to measure the ability of banks to immediately fulfill financial obligations. The obligation is in the form of call money that must be fulfilled when there is a clearing obligation, where the fulfillment is carried out from the current assets owned by the company. The liquidity ratio used in companies is generally applied to banks. However, the difference in banking liquidity is not measured by Acid Test Ratio or Current Ratio, but there are special measures to determine bank liquidity in accordance with Bank Indonesia regulations. The liquidity ratio commonly used in the banking world is mainly measured by the Loan to Deposit Ratio (LDR) referring to the development of Indonesia's economic conditions. Since the end of 2001 banks were considered healthy if the LDR was between 80% and 110% (Masyhud Ali, 2004).

Sugiyanto (2002) in his research shows that the LDR is a financial ratio to predict the bankruptcy of national banks in Indonesia (which was proxied through CAR) one year earlier. The results of his research are supported by previous study (Haryati 2001) indicating that the LDR is able to distinguish CAR from bankrupt and healthy banks. In contrast, Widjanarko (2005) delivered the negative effect of LDR on CAR. LDR is a measure of liquidity calculating the amount of funds placed in the form of loans collected by banks (especially public funds). Higher LDR indicates riskier conditions of bank liquidity; contrastingly, lower LDR indicates the lack of effectiveness of banks in lending. Since higher LDR decreases CAR (the threatened liquidity condition); thus, LDR has a negative effect on the CAR.

The purpose of Bank Indonesia financial statements is to show management achievement or management accountability for the use of financial resources in achieving and maintaining the stability of IDR value, including information about the financial impact of Bank Indonesia's policies on financial position and Bank Indonesia's surplus / deficit.

Total Asset is a ratio to measure the turnover of all assets owned by a company and sales obtained from each IDR of assets (Kasmir, 2010). According to Lukman (2011), Total Asset shows the level of efficiency of the overall use of company assets in generating certain sales volumes. Thus, it is concluded that

Total Assets indicate company ability to utilize all assets owned by the company by creating sales to generate profits.

According to Siegel and Shim (1994) in (Jurniarti and Frency, 2003), disclosure contains information provided as an attachment to financial statements in the form of footnotes or additional information. Information as an attachment referred to the financial statements with more complete explanation of the financial position and results of the company's operations. In addition, Suwardjono (2005) defines disclosure as the presentation of other relevant information as the basic financial statement.

The company provides disclosure to the public, through annual reports and financial reports that have been regulated by the Financial Services Authority Regulation Number 6/POJK.03/2015 concerning Transparency and Publication of Bank Reports to create market discipline following the development of international standards, as it is necessary to make improvements to the provisions regarding transparency and publication of bank reports.

The regulation states that publication reports that must be compiled and published by banks include Monthly Publication Reports, Quarterly Publication Reports, Annual Publication Reports, and other Publication Reports. The completeness and truth of the items in the mandatory reporting is the responsibility of the Board of Directors and Board of Commissioners of the Bank. Entities with the obligation to apply accountability to the public must pay attention to issues related to information or disclosure. The obligation to implement public accountability gives a consequence by providing capital to companies by stockholders and creditors, especially for companies whose shares are listed on the stock exchange. In this case, the company must know the concept of disclosing information.

The reason for the increasing importance of disclosure in the future is revealed by Wolk et al. 1(991) in (Subroto, 2003), as the business environment grows increasingly complex, and capital markets are able to absorb and reflect new information in stock prices quickly. According to Khomsyah (2003), the expression of financial statements is useful to provide a guide, a facility for investors and users in making economic decisions. Thus, investors can get optimal benefits from the investment they make.

CONCLUSION

Conclusion

Based on the result of data analysis and finding presented in the previous chapters, the author withdraws the following conclusion:

1. Variables that have an influence on CAR on market discipline in the Indonesian banking sector are the Loan to Deposit Ratio (LDR), Total Asset Size (TA), and Index of financial information disclosure (DI). LDR has a positive and significant effect on the Capital Adequacy Ratio (CAR), which means the higher the LDR ratio, the higher the CAR ratio and vice versa. Meanwhile, Total Assets (TA) has a positive and significant effect on CAR, which means that higher TA ratio, will be followed by a higher CAR ratio and vice versa. Furthermore, the Disclosure Index (DI) has a positive and significant influence on CAR, which means a higher DI ratio will lead to a higher CAR ratio and vice versa.
2. Meanwhile, the above variables have been shown to have an effect on CAR for the market discipline in the Indonesian banking sector. Return on Assets (ROA) does not have a significant effect on CAR, which means that higher or lower ROA will not affect the CAR ratio. In addition, Non-Performing Loans (NPL) do not have a significant effect on CAR, which also means that the ratio will not affect the NPL ratio. Foreign Owner (FO) does not have a significant effect on CAR, which also means that the ratio will not affect the CAR ratio.

Suggestions

After conducting research and discussion, as well as formulating conclusion from the result of the research, the author provides several suggestions as input and consideration which will be useful for concerned parties. With the findings of variables affecting CAR, such as: LDR, TA and DI, it will be useful to evaluate management systems and improve decision-making capabilities in market discipline as follows:

1. Guidance to foresee trends before deciding to increase / decrease the Loan to Deposit Ratio (LDR), with records showing the bank to meet the minimum requirements of Bank Indonesia.

2. Disclosure index which is very important to provide useful guidelines for investors and users in directing and planning the economic decisions. Therefore, it is advised that banks should provide more info to assist investors or users in understanding their financial plans.
3. Policies for the banking industry to succeed in implementing any policy, and to discipline within it. The formulation of policy / new regulation in the future is also expected to keep the banking industry remains healthy, strong, and ready to face new challenges.
4. in further research better understand how to improve bank performance in the *FINTECH* era. so that the results obtained are expected to be more maximal.

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