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The Effect of Capital Adequacy and Credit Risk on Profitability with Good Corporate Governance as Moderating Variable

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Abstract--*This study aims to obtain empirical evidence about the effect of capital adequacy and credit risk on profitability and examine the role of good corporate governance in moderating the effect of capital adequacy and credit risk on profitability. This study uses non-probability sampling methods and purposive sampling techniques. The data used are secondary data obtained from annual reports of banking companies listed on the Indonesia Stock Exchange and included in the Corporate Governance Perception Index assessment in the 2011-2019 period. Data analysis techniques using moderated regression analysis tests. The results of the analysis show that capital adequacy has a positive effect on profitability, credit risk has a negative effect on profitability, good corporate governance has no effect on profitability.*

Keywords—*profitability; CAR; NPL; GCG.*

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I. INTRODUCTION

The tight competition of banks in the era of globalization shows how important banking is as a financial institution in the economy of Indonesia. Banks take an important role to support national development in terms of improving the standards of living of the people. Banks as intermediary institutions that rely on public trust, need to maintain the performance or soundness of banks to be more competitive and able to compete. Analysis and evaluation of bank performance can identify the inherent strengths and weaknesses in the financial position of the bank. Bank performance evaluation is important for all direct and indirect stakeholders such as: bank managers, borrowers, depositors, investors, and regulators [1]. Bank performance is reflected in financial statements of each bank or general banking financial statements issued by Bank Indonesia. The financial statements are general in nature and can be seen by various parties who need them, both external and internal parties, while the general banking reports issued by Bank Indonesia are used to assess the state of the banking system in Indonesia as a whole and become a source of indicators of economic conditions [2]. Keep in mind that the better the bank's performance, the more it will affect the public's trust is shown by the increasing number of prospective customers who are interested in investing their capital or using the bank's services [3].

One indicator used to assess bank performance is by looking at the profitability of the bank. Profitability is very important for banks in maintaining long-term business continuity. Profitability is often used to measure the efficiency of the use of capital in banks and is often intended as a banking capability with all capital in which it aims to generate profits. If the bank's financial system runs efficiently, it will appear in the increase in profits generated by the bank. Based on Indonesian banking statistics, the net profit of commercial banks in the 2011-2019 period is fluctuated and tended to be unstable in an increase. The lowest net profit was obtained in 2011 which was 75.077 billion rupiah and the highest net profit in 2019 was 156.487 billion rupiah. One of the bank ' s profitability can be measured by using the ratio of net interest margin (NIM), especially in the effort to generate interest income. NIM is an important ratio in banking, that is for the bank management and for the investor, given that most of the bank's income is obtained from its main activity in channeling funds in the form of credit to the public. Indonesian banking statistics show that the overall NIM ratio from 2011-2019 experienced fluctuations. In 2011-2014 the NIM ratio decreased, while in 2015-2016 it increased and then declined again in 2017 to 2019. On average the NIM from 2011-2019 was seen to be above five percent (5%). Looking at the development of NIMs until 2019, shows that high NIMs are good for the company. This is because the greater the NIM that is obtained from the difference (spread) between the loan interest rate and the deposit interest rate, the bank's income will certainly increase. The difference between loan interest that is greater than the deposit rate is what then becomes the bank's income. The greater the difference, the greater the bank's income.

Based on Bank Indonesia Regulation No. 6/10 / PBI / 2004 Concerning the Rating System for Commercial Banks, for a good NIM standard ratio for a bank that is above five percent (5%). To be able to achieve NIM values that meet the criteria for assessing net interest margins are very high (above 5%) in accordance with these regulations, it is appropriate for banks to need to know in detail and be clear about what factors can affect the net interest income so they can implement the right strategy in achieving it. Factors that can affect these include capital adequacy and credit risk. Previous research on the effect of capital adequacy and credit risk on profitability produced inconsistent findings. The inconsistency of the results of previous studies led to this study adding good corporate governance (GCG) as a moderating variable.

II. LITERATURE REVIEW

The theory of the firm consists of a number of economic theories that explain and predict the nature of a company or corporation including its existence, behavior, structure and relationship with the market. The company is a "black box" that is operated in such a way as to meet the relevant marginal conditions with respect to inputs and outputs, maxim maximizing profits, or more precisely, the present value [4]. The company is an organization that combines and manages all of its resources in order to generate profits for the company. In the long run, the existence of this company will not only benefit the owner / shareholder, but will also bring benefits to the wider community and government through a process called the flow of economic activity (The Circular Flow of Economic Activity).

Capital structure is a permanent financing consisting of long-term debt, preferred shares, and shareholder capital [5]. The capital structure can also be interpreted as funding sourced from long-term debt and own capital with the aim of financing the company. Companies must take the most optimal capital decisions so that between debt and equity is really a combination that can produce profits or returns that ultimately maximize the value of the company.

The trade off theory is a capital structure theory which states that companies exchange tax benefits from debt financing with problems caused by potential bankruptcy [6]. This theory is called a trade off because optimal capital structure occurs when there is a balance between the costs of financial distress and agency costs and the benefits of using a debt (tax-shield). The theory of balance (trade off theory) is a balance of benefits and sacrifices that arise as a result of the use of debt. If the benefits generated are greater, the portion of the debt can be added. Based on this theory, companies try to maintain a targeted capital structure with the aim of maximizing market value.

Agency theory is a theory describing the relationship between company managers (agents) and company owners (principals) who have different interests. Principals as capital backers give trust to the agent to manage the assets that have been determined and the agent has the obligation to report information relating to the company to the principal. An agency relationship is a contract in

which one or more people (principals) involve another person (agent) to perform several services on behalf of the principal which involves the delegation of some decision-making authority to the agent [4]. The agent is believed to act in accordance with the interests of the principal if the agent and the principal have the same goal to maximize the value of the company, but in reality it is not uncommon for interests and opinions to differ between agents and principals in achieving company goals. This will lead to the involvement of the interests of each party rather than the main goal of the company's interests. The focus of agency theory, namely on the determination of efficient contracts that affects the relationship between agents and principals.

The theoretical capital decision based on trade off theory assumes that the company seeks to maintain the targeted capital structure with the aim of maximizing market value. The optimal capital structure can be found by balancing the benefits of using debt with the cost of bankruptcy and the cost of capital [7]. Trade off theory emphasizes the composition of debt and equity must be balanced (appropriate) to be able to determine the optimal capital adequacy. If the company has more debt composition, the impact on the profits obtained is small due to the incurring interest costs, and if the company has a debt that is too small, it is also not good because the company has no obligation on interest costs that can impact on the company's lack of motivation to produce higher profits. . So in relation to the effect of capital adequacy on profitability, it can be explained through trade of theory, in order to achieve maximum profitability, companies need to pay attention to capital adequacy. Adequacy of capital capital is obtained through a balanced proportion between the use of own capital and debt in financing company activities. Capital adequacy in this study is proxied by Capital Adequacy Ratio (CAR) and profitability is proxied by Net Interest Margin (NIM). CAR shows how far all bank assets that contain risks (credit, investments, securities, bills at other banks) are financed from the bank's own capital funds, in addition to obtaining funds from outside bank sources such as public funds, loans and others. The higher the capital adequacy of the bank, the greater the credit that can be distributed, so that the possibility of bank profitability through net interest income will increase. The results of research conducted by [13] [14] [15] [16] stated that CAR had a positive and significant effect on NIM.

H1: Capital adequacy has a positive effect on profitability

The abstinence theory states that in the world of banking, loans provided by banks to the public will naturally generate interest income which will affect the profitability of banks. If the bank is not optimal in channeling funds in the form of credit, the interest income that should be received is reduced [8]. One reason banks are not optimal in lending is because of inherent risks. Credit risk in this study is proxied by a Non Performing Loan (NPL) ratio because the NPL ratio can be used to measure the extent to which existing problem loans can be met with productive assets owned by a bank. Bank Indonesia has set a standard NPL ratio that is a maximum of five percent (5%), exceeding five percent (5%), it will have an impact on assessing the soundness of banks, which means that banks are not good in managing them credit. The lower NPL will cause net interest income to increase. NPLs have a negative effect on banking performance where if NPLs are high then banking performance will decline and vice versa. This result is in accordance with research by [17] [18] [19] [14] which states that NPL has a negative effect on NIM.

H2: Credit risk has a negative effect on profitability

Agency theory explains the relationship between company managers (agents) and company owners (principals) who have different interests. The agent is believed to act in accordance with the interests of the principal if the agent and the principal have the same goal to maximize the value of the company. Corporate governance is needed to unify differences of interests between managers and shareholders. Agency theory is the basis for the implementation of corporate governance as a mechanism of supervision and control [9]. Good Corporate Governance (GCG) is a process or mechanism to achieve business success and corporate accountability in order to increase added value for stakeholders in the long run. The application of GCG aims to increase public confidence and is able to improve the image of banks which in turn will create a healthy business climate and encourage performance improvement. The implementation of GCG principles in managing a company reflects that the company has been well managed and transparent. Company performance can be determined from the extent of its seriousness in implementing CG. Companies listed in the ranking rank are proven to have implemented CG well and directly raised the value of their shares [10]. The better CG is owned by a company; it is expected that the better performance of a company by looking at the resulting profitability. Related to the relationship between GCG and financial performance, it is said that investors will make greater investments for companies that have good governance than companies that have a bad predicate on corporate governance [11]. The statement was supported by the results of research by Hedratni et al., (2019) and Hediono & Prasetyaningsih (2019) which showed GCG had a positive effect on financial performance.

H3: Good Corporate Governance has a positive effect on profitability

The careful selection of funding sources needs to be considered by a bank. This study uses GCG as a moderating variable. GCG is one of the most important internal control mechanisms of institutional problems in reducing one of the effects of agency relationships [12]. Companies that implement GCG practices in general can increase their company capital more easily and in the long run will be more profitable and competitive than companies that have poor corporate governance. The better the application of GCG principles in a company, the better the performance of a company is expected because the GCG will provide added value amidst increasingly competitive business competition. The implementation of GCG will support the company to produce good financial performance.

H4: Good corporate governance moderates the effect of capital adequacy on profitability

The implementation of GCG practices includes oversight of the manager (agent) or bank manager in the hope that it can provide benefits to the owners (principals) of the company and can produce good company performance as indicated by increased bank profitability. The better the GCG applied by a company, the better the performance of a company is expected. The inherent risks in bank activities can be controlled and minimized by applying GCG practices as a form of supervision from bank management, so that the risks that can be controlled and minimized will benefit the owner and improve banking performance.

H5: Good Corporate Governance moderates the effects of credit risk on profitability

III. DATA COLLECTION

This study uses the dependent variable, the independent variable, and the moderation variable. The dependent variable is profitability proxied by Net Interest Margin (NIM). The independent variable consists of capital adequacy proxied by Capital Adequacy Ratio (CAR) and credit risk proxied by Non-Performing Loans (NPL). Then the moderating variable is Good Corporate Governance (GCG).

The data in this study are quantitative data sourced from secondary data. The data used are in the form of CAR, NPL, and NIM data contained in annual banking company reports published on the Indonesia Stock Exchange (BEI) in 2011-2019 and GCG data originating from the 2011 Corporate Governance Perception Index (CGPI) assessment report 2019. The population in this study are all banking companies listed on the Indonesia Stock Exchange in the period 2011-2019. The sampling method used is the nonprobability sampling method with a purposive sampling technique. The criteria used in sample selection are: Banking companies listed on the IDX and included in the CGPI assessment in the period 2011-2019. This research sample uses panel data or pooled data which is a combination of time series data and cross-sections. The data collection method used is a nonparticipant observation method, which is an observation made without involving oneself and only as an independent observer.

The data analysis technique used is Moderated Regression Analysis (MRA) using the Statistical Product and Service Solution (SPSS) program. This study uses two equation models, the first equation model is the multiple linear regression analysis model that is used to test the direct effect of independent variables on the dependent variable. Whereas the second equation model, the MRA model, is used to test whether moderating variables strengthen or weaken the direct relationship between the independent variable and the dependent variable.

IV. DATA ANALYSIS

Based on the results of the normality test, shows that the coefficient value of Asymp. Sig. (2-tailed) is greater than 0.05. These results indicate the first and second equation regression models have normal distribution. Based on the results of the autocorrelation test shows the first and second equation equation regression models do not contain symptoms of autocorrelation. Based on the results of the heteroscedasticity test, it can be seen that the significance value of each independent variable in the first and second equation regression models is greater than 0.05. These results indicate that the first and second equation regression models do not contain symptoms of heteroscedasticity. The multicollinearity test in this study was only carried out for multiple linear regression analysis, the results of the multicollinearity test showed that the regression model did not contain symptoms of multicollinearity.

The equation model in multiple linear regression analysis (the first equation model) shows the value of the coefficient of determination (Adjusted R Square) of 0.393. This means that 39.3 percent (39.3%) of the variance of profitability is influenced by capital adequacy, credit risk, and GCG, while 60.7 percent (60.7%) is influenced by other factors outside the research model. Then the results of the F test calculation show a significance of less than 0.05 ($0.000 \leq 0.005$) which means the model is said to be able to predict observations.

Capital adequacy has a positive effect on profitability, so H1 is accepted. This result can be seen from the significance value of 0,000 smaller than $\alpha = 0.05$ and the regression coefficient value of 0.220. This result means that the higher the capital adequacy proxied by CAR, the higher the profitability proxied by NIM. When the capital adequacy ratio increases, the company can carry out lending activities well so that with a high capital adequacy will also be followed by the amount of loan disbursement funds, this will certainly also increase profitability as indicated by the increasing net interest income received by banks.

Credit risk negatively affects profitability, so H2 is accepted. This result can be seen from the significance value of 0.009 smaller than $\alpha = 0.05$ and the regression coefficient value of -0.231. This negative effect means that the higher the credit risk that is proxied by the NPL, the lower the profitability (NIM). The more non-performing loans received by banks, the bank's interest income will decrease. This is due to the tendency of debtors to fail or not be able to pay interest and principal loan obligations, so that the net interest income of banks decreases.

GCG has no effect on profitability, so H3 is rejected. This result can be seen from the significance value of 0.840 greater than $\alpha = 0.05$ and the regression coefficient value of 0.007. This means that GCG has no effect on profitability.

To determine the ability of GCG to moderate the effect of capital adequacy and credit risk on profitability, the MRA test was used. Based on the MRA test (second equation model), it is known that the coefficient of determination (Adjusted R Square) of 0.504 means that 50.4 percent (50.4%) of the variance of profitability is influenced by capital adequacy, credit risk, and GCG, while 49.6 percent (49.6%) is influenced by other factors outside the research model. Adjusted R square in the MRA test showed an increase in the adjusted R square value in the multiple linear regression analysis test. This means that before there is an interaction variable, the adjusted R square value (0.393) is lower and after the interaction variable the adjusted R square value (0.504) increases. The results of the F test calculation show a significance of less than 0.05 ($0.000 \leq 0.05$).

Based on the Multiple Linear Regression Analysis Table, the direct effect of GCG moderation variables on profitability ($\beta 3$) has a significance of 0.840 (not significant) with a coefficient value of 0.007 and based on the Moderated Regression Analysis Table the interaction variable between capital adequacy with GCG on profitability ($\beta 4$) has a significance of 0,000 (significant) with a regression coefficient of 0.597. This means that GCG is pure moderator because $\beta 3$ is insignificant and $\beta 4$ is significant, sothe fourth hypothesis (H4) is accepted. The analysis shows the coefficient of direct influence of capital adequacy on profitability is positive and the coefficient of interaction of capital adequacy and GCG on profitability is positive, it can be interpreted that GCG strengthens the positive influence of capital adequacy on profitability.

Based on the Multiple Linear Regression Analysis Table, the direct effect of GCG moderation variables on profitability (β3) has a significance of 0.840 (not significant) with a coefficient value of 0.007 and based on the Moderated Regression Analysis Table the interaction variable between credit risk and GCG on profitability (β5) has significance of 0.027 (significant) with a regression coefficient of 0.307. This means that GCG is pure moderator because β3 is insignificant and β4 is significant, so the fifth hypothesis (H5) is accepted. The analysis shows the coefficient of the direct influence of credit risk on profitability is negative and the coefficient of interaction between credit risk and GCG on profitability is positive.

V. ANALYSIS RESULTS

Table 1. Multiple Linear Regression Analysis Test Result

Model	***Unstandardized Coefficients***		***Standardized Coefficients***		
	B	***Std. Error***	**Beta**	**t**	**Sig.**
(Constant)	2,889	2,774		1,041	0,302
CAR (X_1)	0,220	0,044	0,562	5.001	0,000
NPL (X_2)	-0,231	0,085	-0,272	-2,715	0,009
GCG (X_3)	0,007	0,035	0,023	0,203	0,840
R Square		0,422			
Adjusted R Square		0,393			
F		14,380			
Significant of F		0,000			

Source: analysis results, 2020

Table 2. Moderated Regression Analysis Test Results

Model	***Unstandardized Coefficients***		***Standardized Coefficients***		
	B	***Std. Error***	**Beta**	**t**	**Sig.**
(Constant)	5,500	0,162		34,027	0,000
CAR (X_1)	0,572	0,114	0,524	5,027	0,000
NPL (X_2)	-0,049	0,137	-0,045	-0,359	0,721
GCG (X_3)	0,111	0,113	0,101	0,980	0,331
CAR*GCG (X_1X_3)	0,597	0,154	0,396	3,863	0,000
NPL*GCG (X_2X_3)	0,307	0,135	0,311	2,274	0,027
R Square		0,544			
Adjusted R Square		0,504			
F		13,598			
Significant of F		0,000			

Source: analysis results, 2020

VI. STUDY RESULTS, SUMMARY AND CONTRIBUTION

Based on the results of the study it can be concluded that capital adequacy has a positive effect on profitability. This shows that if the capital adequacy is higher, it will increase bank profitability. Credit risk negatively affects profitability. This shows that if the credit risk experienced by banks increases, it will result in decreased bank profitability. GCG has no effect on profitability. This is likely due to the average sample banking that already has a GCG index score that is in a very reliable level so that the data distribution is not too fluctuating and does not affect the ups and downs of profitability. GCG moderates the effect of capital adequacy on profitability. These results indicate that the higher the value of capital adequacy, it will cause profitability to increase, especially when banks have high GCG index scores. GCG moderate the effect of credit risk on profitability. This result shows that the higher credit risk faced by banks causes profitability to decline and that profitability can increase when banks have a high GCG index score.

This research is limited to banking companies included in the CGPI ranking as a research space. Further researchers are advised to examine the same thing but in other sectors and measuring GCG as a moderating variable can use the GCG component with factor analysis to find out which factors best represent GCG in the company to be sampled. In addition, further researchers are also advised to use other variables as moderating, in addition to GCG.

Based on the research results it is known that GCG has a positive impact on the relationship of capital adequacy and credit risk on profitability, so it is expected that banks will implement GCG optimally and effectively to increase trust and provide added value, and to focus also evaluate indicators related to risks might arise like credit risk, considering credit risk is a major risk in banking activities.

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