

Earning Management, Risk Profile and Efficient Operation in the Prediction Model of Banking : Eviden from Indonesia

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ABSTRACT

This study aims to test the Earning management, Risk Profile, Opertration Efficiency on bankruptcy prediction model of the bank in Indonesia, with Sample of 240 data of banking financial statements go public of 41 banks consisting of 31 non-bankrupt banks and 10 bankrupt banks in 2008-2015 . Research methodology measures Earning management, NPL, ROA, CAR, NIM moderation uses 185 item analysis content inquiries from 5 GCG principles based on Asean corporate governance scorecard index from Asean capital market forum (ACMF 2014), include variable size control, growth, leverage, tested the sensitivity of Linear Dermometer model. Result of research of Earning Management, ROA, CAR, NIM moderation good corporate governance, risk profile can to predict bank insolvency have positive significant effect. While NPL, Size and Leverage have no contribution to bank insolvency prediction. Sensitivity test results compare among others Linear Discriminant Model (MDL) with Logistic Regression Model 70.80% validation. The best discriminant model result is 88.60% obtained from cross-validated grouped cases correctly classified.

Keywords : Earning Management, Risk Profile, Operational Efficiency, Good corporate Gover

I. INTRODUCTION

The emergence of corporate governance since the introduction of separation between ownership and management of the company Rebbeca (2012). Causes the asymmetry of information between the two parties. The beneficiary in this case is the management (agent). Knowing the ins and outs of the company compared to the principal. The existence of information asymmetry, hence required effective corporate governance to reduce the occurrence of information asymmetry by increasing monitoring of actions taken by management reduce risk. The implementation of corporate governance enhances supervision of management to encourage effective decision-making, preventing opportunistic action. Corporate interests. to reduce information asymmetry between management, shareholders, and creditors.

Principles of accounting based on normative theory lead to a conflict of interest among the users of the accounting report on the rejection of accounting principles Scott (2013). Profit management in the banking industry is expected to contribute to the development of positive accounting theory in Indonesia. Watt and Zimmerman (1986) companies always try to minimize the cost of contracts made. Akerlof (1970) in overcoming adverse selection symptoms of signaling actions on the part of the agent addressed to the principal. Popper Taryadi (1991), proof of earnings management to make publishing financial statements. Trueman and Titman (1988) provide a rationale for earnings management (income smoothing) earnings management action lowers corporate bondholders against corporate business risks. Beatty et al (2011) that the closed bank industry (non-open bank industry) is less interested in earnings management because it has the same motivation ROA

is made as a benchmark by banks in Indonesia, to measure the soundness of banks.

Etty Murwaningsari (2015) Discretionary arises from managerial opportunism and value relevance. Discretionary values arise either functional mispricing or information asymmetry. Manager in conveying information through accrual discretionary as well as market price of accruals. Management uses its policy to improve the relevance of earnings value. Whereas Financial Accounting in general the application of conservative accounting principles is relatively preferred by the owners of the company (stakeholders). Due to the pressure of management in practice many companies take advantage of the services of liberal accountants.

According to Law No. 7 of 1992 and Bank Indonesia Regulation Number 13/1 / PBI / 2011, the definition of a bank is a business entity that collects funds from the public in order to improve the standard of living of many people. While Commercial Bank is a bank that can provide services in banking traffic. Indonesian banking in conducting its business is based on economic democracy by using the principle of prudence with the aim for the implementation of national development in order to improve the distribution of people's income and economic growth towards the improvement of people's welfare.

II. FRAMEWORK FOR THINKING AND HYPOTHESES DEVELOPMENT

1. Theory of Financial Intermediation

Santomero and Allen (1977) The traditional theory of intermediation is based on transaction costs and asymmetric information. The intermediation theory seeks to reconcile it with institutional behavior in the capital market. Leland and Pyle (2012) state that intermediary institutions provide information signals by investing their wealth in the form of certain assets. Diamond believes that the intermediary institution

can outgrow the issue of asymmetric information as oversight. Intermediation in fact the role of the institution of intermediation such as bank and insurance can be developed and developed in many countries. The real difference between theory and reality for this arises within the scope of risk management.

2. Theory of Asset and Liability Management

Stigum (1990) defines the asset and liability management or ALM management as follows: ALM) a coordinated and consistently coordinated and coordinated process of banking operation and supervision of the operations affecting the banking operations, whether from within to obtain strategic and policy decisions that include capital. From these restrictions it can be concluded that ALM in banking is meant to assist management in constraints to take opportunities (opportunities). In the banking industry is very necessary to follow the development of the modern business world, because market changes will change the pattern of banking industry management system. This can not be separated from the existence of the banking industry that substantially drives other business sectors. national payment system.

3. Asymmetry Information Theory

Akerlof (1987) states that there is a significant difference in information gap between management and outsider investors. This opinion is very contrary to the theory that the information received by market participants is assumed to be the same as the information on the management of the company. In general, managers have limited knowledge of the stock market and interest rates in the future, but on the other hand, they generally know more about the company's prospects than investors or even investment analysts. This allows the emergence of asymmetric information.

1). Health Bank

Level at health of banks is basically assessed by qualitative approaches to various aspects that affect

the condition and development of a bank with approaches include: capital aspect; aspect of earning productivity; (RGEK BASEL III) and in the execution of quantified components, each aspect shall be weighted according to the requirements of the management, the aspect of rentabilization and liquidity aspect or formulated into: Risk profile, Good Corporate Governance, capital, assets quality, management, earnings and liquidity the magnitude of influence on the health of the bank, premises credit system with a value of 0 up to value 100. Predicate health is divided into 4 (four) health categories of banks, namely: (i) healthy banks; (ii) the bank is reasonably healthy; (iii) less healthy banks; and (iv) unhealthy banks.

2).The Definition of Commonly Used World Bankruptcy

According to Standart and Poors, Hadad and Wimboh (2003) defines the default as follows an exception occurs when an interest payment is missed on the date is made within the grace period While the definition of bangkrutpcy according to the international Swaps And Derivatives Association.

3. Financial Difficulties And Bankruptcy In Indonesia

The failure in Indonesia refers to Regulation No. 1 of 1998 on the amendment to the Bankruptcy Law, which states;

1. The debtor does not repay the debt has matured which can not be collected, declared bankrupt by Court decision. Whether on solicitation or at the request of the furniture.

2. The request for financial difficulties is so severe that the bank is unable to run its operations properly. While financial difficulties (financial distress) is a financial difficulty or liquidity that may be the beginning of the pail.

2.3 Hypothesis

Referring to the formulation of the problem, literature review and frame of thought, The research hypothesis is formulated as follows:

H1 : Earning Management positively affects the probability of bank insolvency predictions.

H2 : Risk Profile has a positive effect on the probability of bank insolvency prediction

H3 : Operational Efeciensy positively affects the probability of bank insolvency prediction.

H4 : Moderation Good corporate governance to the probability of bank insolvency precision.

H5 : Comparison of sensitivity test on linear discriminant model with logistic regression model.

III. RESEARCH METHOD

3.1.Population and Sample Research

The population in the study of 182 banking companies, consisting of non-bankrupt banks amounted to 120, while bank bankrupt a number of 62 banks in Indonesia. The samples used in this study were chosen by purposive sampling method, the banks used in this study were national public banks, government-owned and private international state go public, financial statements of 41 banks, consisting of 31 non-bankrupt banks and as many as 10 banks that have been bankrupt.

The research uses the following criteria:

1. The Bank is included in the category of public go-go banks that are still operating in 2008 until 2015 special non-bankrupt banks.

2. Bankrupt bank until the end of the bank does not operate.

3. The Bank has issued its financial statements for the period ended December 31 and according to the respective country's regulations.

3.2 Data Analysis Techniques

The information used in this study is mostly secondary data taken from the anual report of bank financial statements in Indonesia obtained from

International Financial Statistic (IFS), and data obtained through www.bankscope.co.id each country that go public listed on stock exchange, data collected from 2008 to 2015 non bankrupt banks. While bankrupt bank until the end is set not operate. Data analysis in this research use method of discriminant analysis and Logistic regression.

3.2.1. Linear Discriminant Model

Linear discriminant model is a method of data analysis. The dependent variable is category data (non-metric, nominal or ordinal which is qualitative). The general model of discriminant analysis with regard to the linear combination is formed as follows:

$$Z = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n \dots \dots \dots (3.1)$$

Where :
 Z: The discriminant score
 β_i : The discriminant coefficient or weight of the independent variable
 X_i : Independent variable Johnson and Wichern (1982: 470), the purpose of discriminant analysis is to illustrate the characteristics of an observation of various known populations, both graphically and algebraically by forming discriminant functions. Effect of Earning Management, Risk profile, Operational Efficiency with moderator of corporate governance on prediction model of bank insolvency. With control variables: Size leverage, and growth. Ratios are clarified on the general model of discriminant analysis with linear combinations of the following planning forms:

$$Z = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n \dots \dots + e_i \dots \dots \dots (3.2)$$

Where :
 Z = Discriminant score
 B_i = The discriminant coefficient or weight of the independent variable
 X_i = Independent variable
 E_i = Error

So the discriminant model in this research is:

$$\log \left(\frac{p}{1-p} \right) = \ln \left(\frac{p}{1-p} \right) = \alpha_0 + \beta_1 \text{EARNING} + \beta_2 \text{NPL} + \beta_3 \text{ROA} + \beta_4 \text{CAR} + \beta_5 \text{NIM} + \beta_6 \text{GCG} * \text{EARNING} + \beta_7 \text{GCG} * \text{NPL} + \beta_8 \text{GCG} * \text{CAR} + \beta_9 \text{GCG} * \text{NIM} + \beta_{10} \text{SIZE} + \beta_{11} \text{GROWTH} + \beta_{12} \text{LEVERAGE} + \text{et.} \dots \dots \dots (3.3)$$

Where :

$\log \left(\frac{p}{1-p} \right) = \ln \left(\frac{p}{1-p} \right)$: Logit (log odds) Log napier probability
 α_0 : Constants,
 EARNING : Cfo discretionary cash flow: Total asset i in year t
 Discretionary Cost: DISEXPit / Ait-1 i in year t
 RISK PROFILE: NPL: Total bad credit i: Totak credit in year t
 ROA: Net profit to Total Asset i in year t
 OPERATIONAL: CAR: Capital i: ATMR year t
 NIM Net interest income i: Average Active year t
 GCG: The Asean corporate governance scorecard index
 SIZE : Total assets: total sales i in year t
 LEVERAGE : Leverage Total debt / total assets
 GROWTH : Growth $\frac{EAT_t - EAT_{t-1}}{EAT_{t-1}}$
 E_{it} : Error, Residual Error of i year t

3.2.2 Logistic Regression Method

Logistic regression model is a special form of regression analysis with dependent variable variable is a category and variable independent variable is a category, continuous, or a combination of both. In practice, logistic regression does not require normal multivariate assumptions or covariance variance matrices as well as discriminant analysis Hosmer and Lemeshow, (1989). The purpose of using logistic regression method is basically the same as linear discriminant method.

Logistic regression model with p predictor variable is:

$$\pi(x) = \frac{\exp(\hat{\beta}_0 + \hat{\beta}_1 x_1 + \dots + \hat{\beta}_p x_p)}{1 + \exp(\hat{\beta}_0 + \hat{\beta}_1 x_1 + \dots + \hat{\beta}_p x_p)} \dots \dots \dots (3.4)$$

$\pi(x)$ is the probability of occurrence $Y = 1$. The function is a non function so it is necessary to do a logit transformation to obtain a linear function in order to see the relationship between the dependent variable with the independent variable.

By performing a logit transform from, we get a simpler equation that is: $\pi(x)$, obtained a simpler equation that is:

$$g(\hat{x}) = \ln \frac{\pi}{1-\pi} = \hat{\beta}_0 + \hat{\beta}_1 x_1 + \dots + \hat{\beta}_p x_p \dots (3.5)$$

So the discriminant model in this research is :

$$\log(p/1-p) = \ln(p/1-p) = \alpha_0 + \beta_1 \text{EARNING} + \beta_2 \text{NPL} + \beta_3 \text{ROA} + \beta_4 \text{CAR} + \beta_5 \text{NIM} + \beta_6 \text{GCG} * \text{EARNING} + \beta_7 \text{GCG} * \text{NPL} + \beta_8 \text{GCG} * \text{CAR} + \beta_9 \text{GCG} * \text{NIM} + \beta_{10} \text{SIZE} + \beta_{11} \text{GROWTH} + \beta_{12} \text{LEVERAGE} + \dots \dots \dots (3.6)$$

Where :

- $\log(p/1-p) = \ln(p/1-p)$: Logit (log odds) Logapitmanapier probability
- α_0 : Constants
- EARNING : Cfo discretionary cash flow: Total asset i in year t
- Discretionary Cost : $\text{DISEXPit} / \text{Ait-1}$ i in year t
- RISK PROFILE: NPL : Total bad credit i: Total credit in year t
- ROA : Net profit to Total Asset i in year t
- OPERATIONAL : CAR : Capital i: ATMR year t
- NIM Net interest income i: Average Active year t
- GCG : The Asean corporate governance scorecard index
- SIZE : Total assets: total sales i in year t
- LEVERAGE : Leverage Total debt / total assets
- GROWTH : $\text{Growth EATt} - \text{EATt-1} / \text{EATt-1}$
- Eit : Error, Residual Error of i year t

In logistic regression, the conditions that need to be considered from the logistic regression results are: Goodness-of-fit is to test or assess the overall fit model of the data. Some test statistics are given to assess this. Testing the accuracy of the model also used Hosmer and Lemeshow's goodness-of-fit Test. Hosmer and Lemeshow's goodness-of-fit tests test the null hypothesis that empirical data match or will fit the model (there is no difference between the model and the data so that the model can be said fit). If the value of Hosmer and Lemeshow's goodness-of-fit statistical test is equal to or less than 0.05, then the null hypothesis is rejected which means there is a significant difference between the model and the observed value. If the value of Hosmer and Lemeshow's goodness-of-fit test statistic.

IV. RESULT AND DISCUSSION

4.1 Description of Research Objects

This research is done by research object of bank financial report in Indonesia Influence of Earning Management, Risk Profile and Operational Efficiency on bankruptcy prediction model of bank with moderation of Good Corporate Governance. Earning management with discretionary cash flow and total assets, risk profile measured NPL and ROA. While Operational Efeciency measured the level of CAR and NIM. During the period of 2008 - 2015. Types of secondary data financial statements of banking companies go public from the Indonesia Stock Exchange (BEI). Sample of financial statements of 41 banks, consisting of 31 non-bankrupt banks. bank bankrupt 10 banks go public. The criteria in the study use as follows:

1. The Bank is categorized as a bank in Indonesia which is still in operation, and the bank is bankrupt. Banking companies go public in Indonesia Stock Exchange (BEI). the period of 8 consecutive years from 2008 to 2015.

2. The Bank has issued its financial statements for the period ended 31 December and complies with regulations.

3. The required financial report data is available from IFR International Financial Statistic and www.bankscope.co.id and www.bi.co.id from Bank Indonesia.

This research performs descriptive statistical analysis to know the distribution of data. The results of descriptive statistical analysis of the study are presented:

Table 4.1 Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
EARNING MANAGEMENT	265	-,83	7,03	,2224	,69979
GCG	265	,02	,99	,7473	,17079
NPL	265	,00	,99	,3561	,29602
ROA	265	-,04	,96	,2657	,35980
CAR	265	,00	,99	,3401	,33095
NIM	265	,02	1,00	,7999	,21573
SIZE	265	,01	,99	,3743	,29249
GROWTH	265	,00	8,34	,5087	,59053
LEVERAGE	265	,00	,97	,6031	,33181
STATUS BANK	264	,00	1,00	,9091	,28803
GCG*EARNING	265	-,79	6,01	,1621	,55078
GCG*NPL	265	,00	,82	,2743	,24638
GCG*ROA	265	-,03	,83	,2050	,28354
GCG*CAR	265	,00	,97	,2579	,26845
GCG*NIM	265	,00	,93	,5989	,21422
Valid N (listwise)	264				

*This table presents descriptive statistics, aims to provide a description of the central tendency condition, for the dispersion of data used and estimates the independent variables including Earning Management, risk profile Operational Efficiency with Good Corporate Governance modifiers, Size control, leverage and growth variables. Variable: Earning Management, Risk, Profile and Operational Efficiency, Size, Growth, Leverage, GCG * EARNING, GCG * NPL, GCG * ROA, GCG * CAR, GCG * NIM.*

Source: Data processed SPSS 24

Descriptive statistical test results in table 4.1, can be explained based on the variables. The researcher aims to provide an overview of the data used in mengetimasi research model as follows:

1. Earning Management in this study is measured by cash flow divided by Total Asset, The result gives an illustration that reporting based on discreniery accoual and cash bank ratio can have relatively small amount of liability.

2. ROA (Return on Asset), this ratio measures the company's ability to generate profits based on certain asset levels. The results of this study are consistent with the findings of Hejazi et al. (2014) which states that ROA affects firm performance, but the results of

this study do not support Francis et al's findings. (2014) that income smoothing as measured by net profit with total assets (ROA) significantly positively affects the bank insolvency predictions.

3. Risk Profile of NPL statistical descriptive test results in table 4.1 shows the minimum risk profile profile indicates the existence of bank companies that are able to overcome the risk of lending to third parties.

4. Operational of firm size in this research is projected using logarithm (total assets divided by total sale) This shows that company size is seen from asset. Size increases then the company reflects the ability to manage by getting a high profit, then investors will invest so that the size of the company increases.

5. Growth of company growth measured EAT-EAT-1 divided by EAT-1 The result of descriptive statistic test in table 4.3 shows the minimum growth value indicates company that is able to generate company growth from year to year so that investor will invest their capital.

6. Leverage of working capital derived from debt measured total liabilities divided by total assets. Descriptive statistical test results in Table 4.1 shows the minimum value of leverage indicates there are also companies that are able to generate profits in operating companies generate profits operate capital from debt obtained earn return.

7. Good Corporate Governance is measured by Corporate Governance Scorecard Index of disclosures based on five principles and concepts. Measured by categorization, 1 if disclosure and vice versa if no disclosure with value 0, by reference (Lue et al., 2013) and Asean capital market forum ACMF 2014 Asean corporate governance scorecard. This means the existence of good corporate governance, applying the 5 principles of: 1). The basic right of shareholders, that the company pays dividends in a fair and timely manner and is approved by the general meeting of the holder (AGMS). Treat the same against, 2). Shareholder, 3). Role of stakeholders, 4). Confirmation and transparency, 5). Responsibilities of the board of directors and commissioners. Impact on public trust to

invest capital back into the bank means that GCG can strengthen the bank does not go bankrupt.

4.2 Discussion Analysis of Linear Discriminant Methods

Linear Discriminant Method to differentiate banks that go bankrupt, and banks that are not bankrupt. Probability groups means is one way of eliminating variables that do not have good discriminant skills, using simultaneous procedures, using IBM SPSS Statistics 24 software.

4.2.1 Testing Dicriminan model Test Of Equality Of Group Means

Testing the discriminant model is used Test of equality of group means to see univariate differences between groups of banks. Results of significance levels of independent sub-variables. The output of the results of the Table of Equality of Group Means Table 4.2 from Statistic Wilk's Lamda is significant: Earning Management, GCG, Risk Profile, Leverage and GCG Moderation * Earning, GCG * NPL, GCG * ROA, GCG * CAR, GCG * NIM.

Variable method in the analysis in stages, starting statistics F count the highest is as follows:
 1. The first stage, the number F arithmetic indicator variable earning management is the highest, reaching 53.876 and moderating GCG * Earning 46.753 in the first and second stage is selected.
 2. The third stage of GCG Moderation * CAR, the number F calculated indicator of moderation variable Good Corporate Governance is Corporate Governance Scorecard Index is the highest, reaches 10,514, and other variables.

Overall GCG moderation test results on bankruptcy prediction models strengthen. In result of hypothesis test resulted in significant output <0,05 Test of Tests of Equality of Group Means estimation of discriminant model. Is earning management, CAR, ROA, Leverage, overall moderating strengthening is GCG * Earning, GCG * NPL, GCG * ROA, GCG * CAR, GCG * NIM has pvalue> 0,05 means that bankruptcy category is not significantly different from not bankrupt. There are 9 variables that differ significantly between groups.

1. The result of processing the value of the variable p, of this output there is 62.7% of p significantly different. Because ≥ 50%, then discriminant analysis can be done.
2. The assumption of average difference between groups is met because more than 50% percent of the total variables are analyzed.
3. The three non-significant variables, NPL, Growth, Size of non-escaped variables will be excluded from the list of variables to be included in the discriminant analysis.

From table 4.2 it appears that the Risk profile NPL, and Operation CAR has the greatest significance value of table 4.2 it appears that the variable Ernaing management and good corporate governance has the greatest value Wilks Lambda has a considerable degree of influence with moderator in the future whether the bank entered the bank group bankrupt or not bankrupt.

Can distinguish between groups of bankrupt banks and not bankrupt. Test of Equality of Group Means results in Table 4.2 as follows.

Table 4.2 Tests of Equality of Group Means

$$\ln(p/1-p) = \alpha_0 + \beta_1 \text{EARNING} + \beta_2 \text{NPL} + \beta_3 \text{ROA} + \beta_4 \text{CAR} + \beta_5 \text{NIM} + \beta_6 \text{GCG} * \text{EARNING} + \beta_7 \text{GCG} * \text{NPL} + \beta_8 \text{GCG} * \text{CAR} + \beta_9 \text{GCG} * \text{NIM} + \beta_{10} \text{SIZE} + \beta_{11} \text{GROWTH} + \beta_{12} \text{LEVERAGE} + \text{et}$$

Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
EARNING MANAGEMENT	,829	53,876	1	262	,000
GCG	,986	3,675	1	262	,056
NPL	,990	2,713	1	262	,101
ROA	,977	6,047	1	262	,015
CAR	,960	10,883	1	262	,001
NIM	,988	3,297	1	262	,071
SIZE	,993	1,936	1	262	,165
GROWTH	1,000	,064	1	262	,800
LEVERAGE	,938	17,241	1	262	,000
GCG*EARNING	,849	46,753	1	262	,000
GCG*NPL	,986	3,614	1	262	,058
GCG*ROA	,978	5,820	1	262	,017
GCG*CAR	,961	10,514	1	262	,001
GCG*NIM	,977	6,247	1	262	,013

***) Significance at level 1%, **) Significance at level 5%, *) Significance at level 10%

Description: Table 4.13 presents Test of Tests of Equality of Group Means estimation of discriminant model. Estimation is done by using panel data analysis and pooled time series dependent variable is probability bank status of bankruptcy, free variable of earning management, risk profile of operational efficiency with moderator of good corporate governance, variable of size control, leverage and growth and. Variable: Earning Management, Risk, Profile and Operational Efficiency, Size, Growth, Leverage, GCG * EARNING, GCG * NPL, GCG * ROA, GCG * CAR, GCG * NIM.

Source: Processed data, SPSS output 24

4.2.2 Dedicated or Removed Entered or Removed Model

Testing the discriminant model used Entered or Removed Variables to form a discriminant function. With the output of the variable significance level of the sub-variables independent of the output of Earning Management, Risk Profile, modersai GCG * NPL, GCG * ROA, GCG * CAR, GCG * NIM. This treatment is performed by IBM SPSS Statistics 24 software. The overall test results of these six indicators show significant numbers well below 0.05. the results of this analysis are shown in Table 4.3 Entered and Removed variables on statistical results.

1. Variable earning management has the greatest significance value that is 53.876-9 (0.00) between the bankruptcy group and not bankrupt, this indicates that the variable earning management as one indicator has a degree of influence large enough to distinguish the bank in the future whether in the group bankruptcy bank or otherwise.
2. Variable ROA has the greatest significance value that is 36.292E-13 (0.00) between the bankruptcy group and not bankrupt, this indicates that ROA and CAR as one indicator has a degree of influence large enough to distinguish the bank in the future whether entering the group bankruptcy bank or otherwise.
3. Leverage control variables have the greatest significance value of 27.214- E Sig (0.00) among the bankruptcy group and not bankrupt, this indicates that the variable as one of the control indicators, has a considerable degree of influence in distinguishing the bank in the future whether entering on bank group bankrupt or otherwise.
4. GCG Variables * Earning management has the greatest significance value of 262,000 Sig (0.00) among the bankrupt group and not bankrupt, this indicates that the variable earning management as one indicator has a degree of influence large enough to distinguish

the bank in the future whether entering on bank group bankrupt or otherwise.

Table 4.3 Variables Entered/Removed^{a,b,c,d}

Step	Entered	Wilks' Lambda							
		Statistic	df1	df2	df3	Exact F			
						Statistic	df1	df2	Sig.
1	EARNING MANAGEMENT	,829	1	1	262,000	53,876	1	262,000	,000
2	ROA	,782	2	1	262,000	36,292	2	261,000	,000
3	CAR	,732	3	1	262,000	31,684	3	260,000	,000
4	LEVERAGE	,712	4	1	262,000	26,214	4	259,000	,000
5	GCG*EARNING	,697	5	1	262,000	22,422	5	258,000	,000

At each step, the variable that minimizes the overall Wilks' Lambda is entered.

a. Maximum number of steps is 28.

b. Maximum significance of F to enter is .05.

c. Minimum significance of F to remove is .10.

d. F level, tolerance, or VIF insufficient for further computation.

Source: Processed data, SPSS output 24

Based on the result from the process of Entered or Removed Variables table 4.3 with three iterations, six significant variables are differentiated between bankrupt group and not bankrupt because the significance value is smaller than 0.05. With the smaller residual error rate declared by Wilk's Lambda for Discriminant Scores from Function 1 for Analysis 1 with the 0.829 level selected for inclusion in the discriminant function. Summary of Canonical Discriminant value of eigenvalue shows the presence or absence of multicollinearity among independent variables. Multicollinearity will occur when the value of the eigen value is close to 0 (zero). Based on the result of data processing, the root value of the characteristic close to zero is 0.435. This condition can be interpreted that the discriminant function obtained is not good because of the multicollinearity among the free variables.

Based on the result of stepwise method with one-time interaction, one significant variable was obtained. Distinguish the bankrupt group and not bankrupt, because its significance value is less than 0.05. With an even smaller residual error level expressed by Wilk's Lambda with a level of 0.697 and chi square 93.638 with a significant level of 000 after one such variable was selected for inclusion in the discriminant function.

4.2.3. Testing Matrix Structure Analysis

The matrix structure consists of 14 (fourteen) subvariables which are first analyzed with their respective coefficients. Variables marked "a" at the top indicate that the variable is not used or does not meet the entry requirements of the discriminant model. The matrix structure shows that the loadirtg of each variables is as follows: for Earning management 0,688, GCG * Earning of 0.641, Leverage of 0.389, GCG * CAR of 0.341, CAR of 0.309, and ROA of 0.230 can be interpreted as a measure of financial health the dominant bank distinguishes the bankrupt bank group and is not bankrupt. Analysis of matrix structure in table 4.4 can be seen that in the matrix structure there are 5 (five) variables consisting of 14 sub units of variables in the analysis with each coefficient. Variables marked "a" at the top indicate that the variable is not used or does not meet the entry requirements of the discriminant model.

Table 4.4 describes or describes the structure matrix of research variables from the result of discriminant matrix structure as follows:
Tabel 4.4 Structure Matrix

Structure Matrix	Function 1
EARNING MANAGEMENT	-.688
GCG*EARNING	-.641
LEVERAGE	.389
GCG*CAR ^a	.341
CAR	.309
GCG*ROA ^a	.251
ROA	.230
GCG ^a	.159
GCG*NIM ^a	.143
SIZE ^a	-.093
NPL ^a	-.050
NIM ^a	.044
GCG*NPL ^a	-.021
GROWTH ^a	-.003

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions
Variables ordered by absolute size of correlation within function.
a. This variable not used in the analysis.
Source: Processed data, SPSS output 24

Assessing the importance of discriminant variables and the meaning of discriminant functions is done by looking at standardized cononical discriminant function (managementizecon-prplication discriminant) results of management shows that the earning management coefficient has the highest, this indicates that the variable of Earning Management is the most

important discriminant variable relative form the discriminant function of the table 4.4 it appears that the variables that do not have an "a" exponent value are significant variables. able to distinguish the status of the bank "xx" whether categorized as a bankrupt bank or otherwise as a bank that is not bankrupt.

Table 4.5 Standardized Canonical Discriminant Function Coefficients

	Function 1
EARNING MANAGEMENT	-2,546
ROA	.510
CAR	.386
LEVERAGE	.318
GCG*EARNING	1,735

Source: Processed data, SPSS output 24

Table 4.5 shows the result of standardized conical discriminant function conferencing data variable subvariabel statistically significant results at 5% alpha level with Wilk's lamda value small enough the smaller the value the greater the probability of the null hypothesis is rejected (no population difference means) according to linear discriminant method indicators or variables that are able to distinguish bankrupt bank or not bankrupt is variable Earning management, ROA, CAR, Leverage Moderating GCG * Earning Based on the analysis results can be determined that the reflected profitabilitas ratio can be able to distinguish bank status. Analysis of cononical discriminant function coefficients with linear discriminant method. Analyzed by the method of classifying future observations into one classification is statistically significant. As shown table 4.6 as follows:

Table 4.6 Canonical Discriminant Function Coefficients

	Function 1
EARNING MANAGEMENT	-3,985
ROA	1,430
CAR	1,187
LEVERAGE	.986
GCG*EARNING	3,409
(Constant)	-1,049

Unstandardized coefficients

Source: Processed data, SPSS output 24

4.2.4. Discriminant Analysis Results

Based on table 4.6 Canonical Discriminant Function Coefficients can be determined that the discriminant function equation, so the discriminant model in this study are:

$$\text{Discriminant (D)} = -1.049 + -3.985\text{Earning} + 1.430\text{ROA} + 1.187\text{CAR} + 0.986\text{Leverage} + 3.409\text{GCG} * \text{Earning}.$$

The result of the linear discriminant method there is little difference in interpreting the result kofiesien discriminant equation of value and the negative and positive sign of each kofiesien, has a meaning associated with the dummy of numbers in the dependent variable. If the negative coefficient (-) has the sense that the kofiesien variable has an effect on the smaller categorical number, so in this study, the bank that experienced bankruptcy is marked 0 (0) and the bank that can survive is given a value of one (1) ROA has positive tilapia (1.430ROA) and (1.187 CAR) it can be interpreted that CAR variable positively influence to bank probability not bankrupt. This can be interpreted if there are bank conditions in running its activities day to day, then the bank has ROA and CAR business so that banks can survive operations.

Significant test of the discriminant function used multivariate test of significance, because the discriminant variable to differentiate the bank group for all variables simultaneously used multivariate test. Wilk's Lamda test with Chi-square statistic. The value of Wilk's Lamda 0.697 or equal to Chi-square 93,638 and the result of significant value at 0.000 it can be explained that the discriminant is statistically significant which means the value of discriminant means score for both bankrupt and non-bankrupt cluster groups differ significantly.

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	,697	93,638	5	,000

Source: Processed data, SPSS output 24

With the result of significance value smaller than alpha (0,05), so it can be said that there is average difference between group: 0 and group: 1 with assumption of average difference between groups met. In addition, it can also be seen from the results of the Test of Equality of Group Means table of significant differences between groups at each free variable. Although statistically the differences between the two groups are significant, but for the practical purposes are different both groups of banks. To test how big and different between the two groups of banks can be seen from the value of Square Cononical Correlation (CR2) to measure the variation between the two groups of banks that can be explained by the variable how strong the discriminant function.

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	,435 ^a	100,0	100,0	,550

a. First 1 canonical discriminant functions were used in the analysis.

Source: Processed data, SPSS output 24

Based on Table 4.8 Eigenvalues shows that the magnitude of cononical correlation is 0,550. So the magnitude of CR2 is equal to (0,550 x 0,550) = 0.3025, so it can be concluded that 30.25% variation between group bankrupt bank and not bankrupt can be explained by linear discriminant model that is by correlation Earning management and GCG, described from the discriminant model formed. Grouping of banks is based on classification values. If the classification value is less than 0 (zero), then the bank is predicted to be in bankruptcy classification, and if greater than 0 (zero) is predicted to non-bankruptcy classification. The performance of the model formed, measured by the accuracy of the classification results. In more detail the output Table 4.9 provides the results of data analysis of bank financial statements as

many as 240 valid banks, consisting of 219 non-bankrupt banks and 21 bankrupt banks.

Result of classification result test in table 4.9

Table 4.9 Classification Results ^{a,c}					
Classification	% Count	Status Bank	Predicted Group Membership		Total
			Bank bankrupt	Bank not bankrupt	
Original	Count	.00	17	7	24
		1.00	21	219	240
		Ungrouped cases	1	56	57
	%	.00	70,8	29,2	100,0
		1.00	8,8	91,3	100,0
Ungrouped cases		1,8	98,2	100,0	
Cross-validated ^b	Count	.00	17	7	24
		1.00	23	217	240
		Ungrouped cases	1	56	57
	%	.00	70,8	29,2	100,0
		1.00	9,6	90,4	100,0
Ungrouped cases		1,8	98,2	100,0	

a. 89.4% of original grouped cases correctly classified.
 b. Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.
 c. 88.6% of cross-validated grouped cases correctly classified.

Source: Processed data, SPSS output 24

Grouping of banks is determined based on the classification value, the output value of classification value smaller than 0 (zero) is predicted into non-bankrupt classification. Models are formed, the results of the complete classification of output table 4.9 provides the results of analysis and bank financial statements as many as 240 banks are not bankrupt and pailid valid.

Describes the crosstabulation between the initial model and the discriminant model classification. The output results are 219 non bankrupt banks and 21 bankrupt banks. The result of cross validated bank is bankrupt in prediction 70,80% from bank financial report bankruptcy. In the bankrupt group then predicted to enter in the non-bankrupt group 219 and bankrupt bankruptcy bank 21 data, from 240 bank financial statements. Overall, the discriminant model formed has a fairly high validation rate of 88.60% of cross-validated grouped cases correctly classified The calculation results show the accuracy of the discriminant model is strong enough.

The purpose of modeling future observation clarification into one of the bank groups. Table 4.9 clearly illustrates that the classification that has been

performed shows good model accuracy, 89.40% of original grouped cases true classified bank not bankrupt whereas bank bankruptcy 88,60% of cross-validated grouped cases correctly classified is clarified correctly from data used to form the model. While using leave one cross validation can be said from 240 non-bankrupt banks that can be clarified correctly as much as 240 (100%) of 219 non-bankrupt banks and 21 bankrupt banks are classified correctly by 100%. The classification of the observations is essentially the cut-off value and the bank will be classified as a bankrupt bank whose discriminant score is less than the cut-off value.

4.2.5. Testing Results of Discriminant Hypothesis

Referring to the result of testing of discriminant function as shown in table 4.2 and table 4.3 where the magnitude of Wilk's Lamda equal to the value of Wilk's Lamda 0.697 is equal to Chi-square 93,638 and the result of significant value at 0.000 it indicates that the first hypothesis states that the determinant of Earning Management, Risk Profile and Operation Efficiency with moderation Good corporate governance able to distinguish bank behavior that enter in group probability bank bankrupt or bank not bankrupt. Then the hypothesis can be accepted, clarifying the bank in the future to enter in one of the two bank status groups of 70.80% This result illustrates that the model is good enough to be used as a prediction model of bank status in the future. So the model is able to differentiate as a bankruptcy bank signal, so the hypothesis can be accepted and statistically significant. The results of empirical studies show that the closer the bankruptcy level of bankruptcy bankruptcy classification is not lower. Empirical studies were conducted by previous researchers, among others by: Beaver (1966), Altaman (1968, Haddad (2004), Prayitno (2012) proved.

4.3. Analysis of Logistic Regression

4.7.1 Sensitivity analysis of corporate governance moderation on the bankruptcy prediction model.

Measures the first sensitivity of corporate governance as a moderating variable. In general, sensitivity testing both with the ratios of the bank financial statements produced consistent. The results can be summarized in Table 4.10 indicates that corporate governance reinforces the probability of a bank experiencing bankruptcy. The Sensitivity Analysis of the discriminant model test conducted to see with moderate corporate governance does impact on the results of the Linear discriminant model and the Logistic Regression Model for banking bankruptcy predictions. Sensitivity test results, can be given an explanation as follows: First Table 4.10 can be given an explanation as follows: First, this sensitivity test finds consistent proof on the Model. Here are the results of Sensitivity test of linear discriminant model and logistic regression model.

Table 4.10
Sensitivity Test of Linear Discriminant Model and Logistic Regression Model
 $\log (p/1-p) = \ln (p/1-p) = \alpha_0 + \beta_1 \text{EARNING} + \beta_2 \text{NPL} + \beta_3 \text{ROA} + \beta_4 \text{CAR} + \beta_5 \text{NIM} + \beta_6 \text{GCG} * \text{EARNING} + \beta_7 \text{GCG} * \text{NPL} + \beta_8 \text{GCG} * \text{CAR} + \beta_9 \text{GCG} * \text{NIM} + \beta_{10} \text{SIZE} + \beta_{11} \text{GROWTH} + + \beta_{11} \text{LEVERAGE} + \text{et.}$

Variable Dependent 0 : Bakrupt 1 : No Bakrupt	Ecspectation	Model Diskriminan Linier (MDL)		Model Regression Logistic (MRL)	
		coeficient	Significance	coefisien	Significance
Variable Bebas:					
Constant	+/+	-1,049	0,000***)	-3,110	0,000***)
EARNING MANAGEMENT	+/+	53,876	,000***)	45,028	,000***)
GCG	+/+	3,675	,056*)	3,652	,056*)
NPL	-/-	2,713	,101	2,706	,100
ROA	+/+	6,047	,015**)	5,956	,015**)
CAR	+/+	10,883	,001***)	10,529	,001***)
NIM	+/+	3,297	,071*)	3,281	,070*)
SIZE	-/-	1,936	,165	1,937	,164
GROWTH	-/-	,064	,800	,065	,799
LEVERAGE	+/+	17,241	,000***)	16,300	,000***)
GCG*EARNING	+/+	46,753	,000***)	39,976	,000***)
GCG*NPL	+/+	3,614	,058*)	3,592	,058*)
GCG*ROA	+/+	5,820	,017**)	5,737	,017**)
GCG*CAR	+/+	10,514	,001***)	10,186	,001***)
GCG*NIM	+/+	6,247	,013**)	6,148	,013**)
F-Test Sign	+/+	93,638	0,000***)	90,530	,000***)
N		264		264	

***) Significance at level 1%, **) Significance at Level 5%, *) Significance at Level 10%
 Description: Table 4.10 Sensitivity presents an estimated discriminant model. Estimation is done by using pooled time series data analysis of dependent variable is probability status of bank having bankruptcy, free variable include Earning, risk profile Operation Efficiency with moderation of Good corporate governance. Variable control size, growth and leverage.

Source: Processed data, SPSS output 24

4.3. Final Summary of Hypothesis Testing

Results Overview of hypothesis testing results This study tested the Earning Management, Risk Profile and Operation Efficency with moderation of Good Corporate Governance on banking bankruptcy prediction model, the results summarized from testing the hypothesis:

Table 4.11 Overview of hypothesis testing results of the discriminant model
 $\log (p/1-p) = \ln (p/1-p) = \alpha_0 + \beta_1 \text{EARNING} + \beta_2 \text{NPL} + \beta_3 \text{ROA} + \beta_4 \text{CAR} + \beta_5 \text{NIM} + \beta_6 \text{GCG} * \text{EARNING} + \beta_7 \text{GCG} * \text{NPL} + \beta_8 \text{GCG} * \text{CAR} + \beta_9 \text{GCG} * \text{NIM} + \beta_{10} \text{SIZE} + \beta_{11} \text{GROWTH} + \beta_{12} \text{LEVERAGE} + \text{et.}$

Dependent Variables Bankruptcy probability of bank			
Variable	Hypothesis	Espectations	Significance
Variable Independen			
Earning Management	H1	+	Received at significant 0%
NPL	H2	-	Not Received at significant
ROA	H3	+	Received at significant 5%
CAR	H4	+	Received at significant 0%
NIM	H5	+	Received at significant 10%
Good Corporate Governance Model			
GCG*Earning	H6	+	Received at significant 1%
GCG*NPL	H7	+	Received at significant 10%
GCG*ROA	H8	+	Received at significant 5%
GCG*CAR	H9	+	Received at significant 10%
GCG*NIM	H10	+	Received at significant 5%
Variabel Kontrol			
Size		-	Not Received at significant
Growth		-	Not Received at significant
Leverage		+	Received at significant 10%

***) Significance at level 1%, **) Significance at Level 5%, *) Significance at Level 10%
 Description: Table 4.11 presents the Results of the Discriminant Model hypothesis. Estimation is done by using pooled time series data analysis of dependent variable is probability status of bank having bankruptcy, independent variable including Earning management, risk profile, Operation Efficiency with moderator of Good Corporate Governance. Variable size, leverage and growth variable Variable (s): ERNAINING, GCG, NPL, ROA, CAR, NIM, SIZE, GROWTH, LEVERAGE, GCG * EARNING, GCG * NPL, GCG * ROA, GCG * CAR, GCG * NIM.
 Source: Processed data, SPSS output 24

V. CONCLUDE

Based on the results of testing and discussion as has been presented in the previous section, it can be drawn conclusions based on test results with SPSS 24 generated known that:

1. Based on discriminant test Earning management has a significant value of 0.000 which means failure to reject H¹. so it can be concluded that earning management has a significant influence on the bank insolvency prediction model. Thus accept Ha and reject H₀. Variable Earning Management can be for bank prediction of bank.
2. Based on discriminant test Risk profile with proportion of NPL has significant value equal to 0,101 which mean that H₂ is rejected, so it can be concluded that NPL have insignificant influence to predictive bank prediction model. Thus NPL is not significant so accept Ho and reject Ha.
3. Based on discriminant test of Risk Profile with proxy (ROA) has significant value equal to 0,015 which means that H_{2a} accepted, so it can be concluded that ROA has significant influence to bank bankruptcy prediction model. Thus ROA significant

so it can to predict bankruptcy bank, so the hypothesis ROA reject Ho and accept Ha.

4. Based on discriminant test Operational Efficiency with proxy (CAR) has significant value equal to 0.001 which means that H₃ accepted, so it can be concluded that CAR has significant influence to bank insolvency prediction model. Thus the CAR is significant so as to be able to predict bankruptcy of the bank, so the hypothesis rejects Ho and receives Ha.
5. Based on discriminant test of Operational Efficiency with proxy (NIM) has significant value equal to 0,071 which means that H_{3a} refuses, so it can be concluded that NIM has no significant influence to the bank insolvency prediction model. Thus the NIM is not significant so it can not to predict bankruptcy of the bank, so the hypothesis accepts Ho and rejects Ha.
6. Based on the discriminant test of Good Corporate Governance Modeling (GCG * Earning, GCG * NPL, GCG * ROA, GCG * CAR, GCG * NIM) the strengthening test results can predict the bankruptcy of the bank, meaning H₄ as moderation can be to predict bankruptcy of the bank. It has a significant value of (GCG * Earning 0,000), (GCG * NPL 0.058), (GCG * ROA 0.017), (GCG * CAR 0.001), and (GCG + NIM 0.013) strengthening test results can be predicted on the banking bankruptcy.
7. Control variables Leverage perengruh while significant, while Size and Growth does not affect the bank's prediction model of bankruptcy in Indonesia.

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