



Research Article

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The Relation of Company Risk, Liquidity, Leverage, Capital Adequacy and Earning Management: Evidence from Indonesia Banking Companies

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Abstract

The aim of this study is to analyze the effect of Company Risk, Liquidity, Leverage and Capital Adequacy Ratio on Earning Management and whether Capital Adequacy Ratio moderates the relation between Company Risk, Liquidity and Leverage and Earning Management of Banking Companies listed in Indonesia Stock Exchange during 2014-2018. Sampling techniques uses purposive sampling based on determined criteria and data analysis is performed by multiple regression analysis using E-Views 11.0 version. The result shows that in partial, Company Risk positively, Liquidity and Capital Adequacy negatively affects significantly on Earning Management, while Leverage does not and in the other side Capital Adequacy Ratio only moderates the relation between Liquidity and Earning Management. All variables simultaneously affect weakly on Earning Management. This research implies that due to weakly impact result, banking management must reobserve the role of Company Risk, Liquidity, Leverage and Capital Adequacy Ratio in executing Earning Management.

Keywords: company risk, liquidity, leverage, capital adequacy ratio, earning management

1. Introduction

Earnings management (E-Mag) is the choice of a manager in selecting and determining accounting policies, or a real action that affects the company's profits to achieve multiple objectives in making financial report (Scott, 2015) and the philosophy of E-Mag is taking advantage of the methods and principles of flexible accounting standards (Moghaddam & Abbaspour, 2017). In general, earnings management can be defined as manager intervention in the process of making financial statements

that provides information to external parties.

In the other side, company's earning is one of reason for investor to make investment decision and majority investor does not like the company with fluctuation earning because it represents the existence of high risk. In tax perspectives, earning fluctuation becomes another problem in fulfilling tax rules because the rule complexity made company must avoid tax case to concentrate only in their main business. For management themselves it is about reward. E-Mag has strategic role in firm's management.

Technically, there are many factors affects E-Mag, but 4 following factors encountered inconsistent result in previous studies that is Company's risk proxied by non-performing loan (NPL), Liquidity proxied by Loan to Deposit Ratio (LDR), Leverage (LEV) and Capital Adequacy proxied by Capital Adequacy Ratio (CAR)

The existence of research gap on NPL came from Friscilia and Lukman (2015) found that NPL has no effect on E-Mag, but opposite result appears on work by Kamil and Herawati (2016). While inconsistent result in the direction effect of LDR found on studies by Moghaddam & Abbaspour (2017), Sadeghi & Zareie (2015), and Mulyana, et al (2018) stated that LDR has a positive and significant effect, while Chuong (2018) declares negative effect on E-Mag. Inconsistency about the direction effect of LEV found on studies by Moghaddam & Abbaspour (2017), Sadeghi & Zaereie (2015) concluded that LEV has a significant positive effect on E-Mag, but opposite direction appears on study by Dang, et al (2017) and Chuong (2018). While Agnemas et al (2017), Yullyandra et al (2019), Domenico and Iftekhar (2013), Sadeghi and Zareie (2015), Abdul Karim & Narges (2017) states that CAR has significant negative effect but Maryani and Silvi (2020), Sallhuteru & Wattimena (2015), Tahayyuniyah (2017) states that CAR has no effect on E-Mag. Meanwhile, bank operates in business with rigid rules, for instance banks must have a minimum amount of CAR for cover the risk of their operational activity, therefore CAR has a potential in strengthening or weakening the relation of observe variables on E-Mag. Based on the important role of Earning Management and the existence of inconsistency result of NPL, LDR, LEV and CAR in previous studies, also the possibility of CAR becomes moderates variable, this research is conducted with the title The Relation of Company Risk, Liquidity, Leverage, Capital Adequacy and Earnings Management (Evidence from Indonesia Banking Companies).

2. Theoretical Review and Hypotheses Development

2.1 The Grand Theory: The Agency, Stakeholder and Positive Accounting Theory

Agency theory explains the existence of agency problem and how to resolve as consequences of shareholder (principal) absence in running their own business and appointing third parties (agent/management) (Berk *et al.*, 2011) to presence. Hence, the main task of the agent is to make shareholder more prosperous, one of which appears in company's earning. Management explores all firms' resources to produce high performance in achieving earning included executing Earning Management. Meanwhile, F. Edward Freeman, stakeholder theory's originator starting explained that stake holder " is any group or individual who can affect or is affected by the achievement of the organization objectives", therefore taking into account all parties with interest in the company un-avoided in all management actions, included managing the company's earning. On the other hand, Positive Accounting Theory describes the accountant's behavior road map, promotes by Watts & Zimmerman in 1986, based on Fama's hypotheses titled Efficient Market Hypothesis (EMH). Further, Watts & Zimmerman explains the capital market will react when abnormal return appears in firm's financial report, whether caused by nature or accountant intervention. Accounting practices employed by accountant driven by bonus plan, debt covenant and political cost (Indracahya, 2017). Earning Management is one form of accounting practice.

2.2 Literature supports Dependent Variable

Earnings management (E-Mag) is the choice of a manager in selecting and determining accounting policies, or a real action that affects the company's profits to achieve multiple objectives in making financial report (Scott, 2015). Technically is made by taking advantage of the methods and principles of flexible accounting standards (Moghaddam & Abbaspour (2017). In general, earnings management can be defined as manager intervention in the process of making financial statements that provides information to external parties. There are some models to measure E-Mag, one of other is Jones Model as the popular one which calculated E-Mag with the formula as follows:

$$TAC_{it} = E_{it} - OCF_{it}$$

Where,

TAC_{it} = Total Accruals i in year t

E_{it} = Operational Profit Company i in year t

OCF_{it} = Cash flow from Operation company i in year t

Then specify non-discretionary accruals for the α_1 , α_2 , α_3 parameters with the following equations:

$$\frac{TAC_{it}}{A_{it-1}} = \alpha_1 \frac{1}{A_{it-1}} + \alpha_2 \frac{\Delta REV_{it}}{A_{it-1}} + \varepsilon_{it}$$

Where,

TA_{it} = Total Accrual Company i in year t

A_{it-1} = book value of total company assets i in year t

ΔREV_{it} = Change of Company sales revenue between t and t-1

E_{it} = Error

α_1 , α_2 , α_3 = Estimated company's value i

After calculating the α_1 , α_2 , α_3 parameters, it can be determined non-discretionary accrual values with the following equation:

$$NDA_{it} = \alpha_1 \frac{1}{A_{it-1}} + \alpha_2 \frac{\Delta REV_{it}}{A_{it-1}}$$

Where,

NDA_{it} = non-discretionary accruals company i in year t

ΔREV_{it} = change of Company sales revenue between t and t-1

The calculation of discretionary accrual values by using this following equation:

$$DAC_{it} = \frac{TAC_{it}}{A_{it-1}} - NDA_{it}$$

2.3 Literature supports Independent Variables

2.3.1 Company Risk

The risk of banking companies could be seen from the risk of bad credit faced by banks due to failure of counterpart to fulfill liabilities (Bank Indonesia, 2011). One of the measurements of credit risk is the value of non-performing loan (NPL) ratio which could be calculated by dividing the affected loan by the total loan (Kingu et al,2015). Bank Indonesia determines the sound ratio of non-performing loan (NPL) is $\leq 5\%$ (regulation of Bank Indonesia, 2012).

$$NPL = \frac{\text{Non Performing Loans}}{\text{Total Loans}} \times 100 \%$$

The relation between Company Risk proxied by NPL described by Krisna (2008) where high NPL will decrease bank's income, other that will increase the credit back up cost, in turn decrease bank's capital and finally will drive management executing E-Mag. Dang et al (2018) states that bank with high NPL tends perform E-Mag. **Company Risk effects Earning Management (H1)**

2.3.2 Liquidity

Liquidity relates with firm's ability to meet short-term obligation (Subramanyam, 2014) calculated as the proportion of current asset to current liability (Brigham & Houston, 2010). In bank's operation the liquidity could be measured by Loan to Deposit Ratio (LDR) as follows:

$$LDR = \frac{\text{total credit}}{\text{total third party funds}}$$

According to Bank Indonesia Regulation (2015), the minimum limit for this ratio is 80%, while the maximum limit of LDR ratio is 92%. High LDR portrays bank's liquidity in riskier condition, while the lower LDR describes as inability bank in credit distribution that made bank lost opportunity to make profit (Winarso and Salim, 2017). On the other hand, high LDR causes low liquidity and need external financing, in turn drives to execute E-Mag, so that credit risk lower and income reported higher and finally creditor's trust could be attained. **Liquidity affects Earning Management (H²)**

2.3.3 Leverage

Leverage refers to debt financing in the corporate capital structure (Subramanyam, 2014; Widiatmoko & Mayangsari, 2016). Leverage can be calculated using several ratios, one of which is debt to equity ratio which is a percentage between total debt to total assets (Kashmir, 2010) as follows:

$$\text{debt to equity ratio} = \frac{\text{total debts}}{\text{equity}} \times 100\%$$

High Leverage (DER) has the potential to increase bank risk and capital requirements so that managers are more likely to do earnings management through the use of accruals to increase interest rates income and provide the possibility of funding through shareholders (Gombolaa, et al., 2016). Companies with a high level of leverage due to the total amount of debt to total capital will suffer a high risk that the companies are threatened not to meet their obligations. **Leverage affects Earning Management (H³)**

2.3.4 Capital Adequacy Ratio (CAR)

In banking business, capital refers an investment by shareholder that must be always stays in banking finance and no obligation to use it (Idroes and Sugiarto, 2006). Banks must maintain a minimum amount of capital regulated by the central bank as a banking regulator to cover the risks of their own operational activities The capital adequacy ratio is the provision of minimum capital that must be maintained by each bank in a certain proportion of total assets weighted by risk (ATMR) at 8% minimum (Bank Indonesia, 2013). Capital Adequacy is the result of the basic capital with total risk-weighted assets (Zedan and Daas, 2017).

$$CAR = \frac{\text{initial capital (main)+capital supplement (sub)}}{\text{weighted assets by risks}}$$

Banks with lower CAR indicated as bad performance therefore tends to manage earning as result of studies by Kartika Sari & Astuti (2015), Gombola, et al (2016). **Capital Adequacy affects Earning Management (H⁴)**.

On the other hand, Company Risk, Liquidity and Leverage affects directly to Capital Adequacy Ratio, besides CAR is a measure of bank financial health that is CAR also explored as moderating variables of Company Risk, Liquidity and Leverage in relation with E-Mag. **CAR moderates the relation between Company Risk and Earning Management (H⁵)**. **CAR moderates the relation between Liquidity and Earning Management (H⁶)** and **CAR moderates the relation between Leverage and Earning Management (H⁷)**

2.4 Conceptual Framework and Hypotheses

Based on the discussion in literature review and hypotheses development, the relation between

Company Risk, Liquidity, Leverage, Capital Adequacy and Earning Management shows on Figure 01.

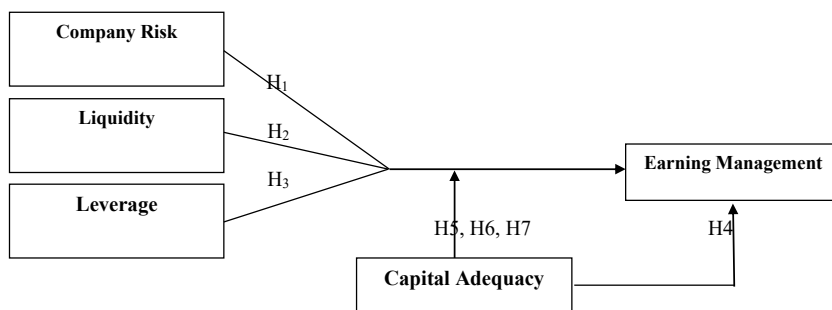


Figure 01. Conceptual Framework

3. Methodology

3.1 Research Design and Subject

This research is a causality study aimed at testing the hypothesis about the effect of company's risk, leverage, liquidity, capital adequacy as an independent variable on earnings management as a dependent variable and capital adequacy as a moderation variable. The subject of the study is banking companies listed in Indonesia Stock Exchange during 2014 to 2018 and sampling technique used purposive sampling while data collected through IDX website and library research.

3.2 Analysis Method

The study implicates panel data, hence regression used in analysis which supported by 11.0 version E-views thru 5 steps as follows: a) Descriptive Statistic Analysis, b) model estimation, c) model selection, d) classical Assumption Test and e) hypotheses test, comprises : Determination Coefficient Analysis (R²), Statistical F Test, t-Test and multiple linear regression analysis.

4. Result and Discussion

4.1 Descriptive Statistic Analysis

Table 1. Descriptive Statistic Test Result

	EMAG	NPL	LDR	LEV	CAR
Mean	-0.000736	3.019458	84.54865	8.125610	20.67394
Median	-0.000645	2.605893	86.61426	6.084224	19.08304
Maximum	0.006914	15.82105	146.3757	56.49693	66.42836
Minimum	-0.006586	0.000000	42.12239	0.622413	8.021778
Std. Dev.	0.001437	2.243124	13.65273	6.667645	7.260275
Skewness	-0.062244	2.454910	-0.281813	2.834892	2.567069
Kurtosis	10.49436	13.08889	5.398342	16.84398	13.58741
Jarque-Bera	479.8791	1075.327	51.84550	1911.644	1182.617
Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	-0.150798	618.9888	17332.47	1665.750	4238.158
Sum Sq. Dev.	0.000421	1026.447	38024.99	9069.328	10753.17
Observations	205	205	205	205	205

Source: 11.0 Version E-Views Output, 2020

Non-Performing Loan (NPL). The NPL minimum value of 0% was owned by PT. Bank National Nobu in 2014 and 2015 and the maximum of 15.82% was on PT. Bank of India Indonesia in 2016 while the average value was 3.02% and a standard deviation of 2.24%. By average value of 3.02%, Indonesia banking companies complies with the rule about minimum NPL of $\leq 5\%$.

Liquidity (LDR). The LDR minimum value of 42.12% was PT. Bank Mitraniaga in 2017 and the maximum of 146.37% on behalf of PT. Bank Woori Saudara Indonesia 1906 in 2018, while the average value is 84.54% with a standard deviation of 13.65%. The allowed range of LDR is between 80% up to 92%, that is by average LDR of 84.54 %, Indonesia banking companies complies with the rule about LDR requirement.

Leverage (LEV). The LEV has minimum value of 0.06 % owned by Bank INA Perdana in 2017 and the maximum value of 0.56% on behalf of PT. The Regional Development Bank (BPD) of Banten in 2015, while the average value is 8% and the deviation standard of 0.07%.

Capital Adequacy (CAR). The CAR minimum value of 8.02% obtained by PT. Bank Pembangunan Banten in 2015, and the maximum value of 66.46% owned by PT. Bank Ina Perdana in 2017, while the average value is 20.67% and the deviation standard of 7.26%. CAR minimum must be maintained is 8%, therefore by average value of 20.67% Indonesia banking companies complies with the rule about CAR requirement.

4.2 Panel Data Regression Model Formulation

The regression model in E-views formulates through 2 steps that is model estimation and model selection.

4.2.1 Panel Data Regression Model Estimation

In model estimation, E-views offers 3 estimation models consisted of Common Effect, Fixed Effect and Random Effect regression model as stated on table 2, 3, 4 and the best model must be chosen through selection model step.

Table 2. Common Effect Model Estimation

Dependent Variable: EMAG
Method: Panel Least Squares
Date: 11/01/20 Time: 17:04
Sample: 2014 2018
Periods included: 5
Cross-sections included: 41
Total panel (balanced) observations: 205

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.004717	0.002004	2.353480	0.0196
NPL	0.000175	0.000123	1.418686	0.1576
LDR	-7.80E-05	2.56E-05	-3.043767	0.0027
LEV	5.37E-05	3.71E-05	1.447393	0.1494
CAR	-0.000199	8.88E-05	-2.244323	0.0259
CAR*NPL	2.37E-06	5.28E-06	0.447969	0.6547
CAR*LDR	2.50E-06	1.17E-06	2.147924	0.0329
CAR*LEV	-1.28E-06	2.28E-06	-0.561441	0.5751
Root MSE	0.001271	R-squared		0.214764
Mean dependent var	-0.000736	Adjusted R-squared		0.186863
S.D. dependent var	0.001437	S.E. of regression		0.001296
Akaike info criterion	-10.42057	Sum squared resid		0.000331
Schwarz criterion	-10.29089	Log likelihood		1076.108
Hannan-Quinn criter.	-10.36812	F-statistic		7.697161
Durbin-Watson stat	1.477279	Prob(F-statistic)		0.000000

Source: 11.0 Version E-Views Output, 2020

Table 3. Fixed Effect Model Estimation

Dependent Variable: EMAG
Method: Panel Least Squares
Date: 11/01/20 Time: 17:07
Sample: 2014 2018
Periods included: 5
Cross-sections included: 41
Total panel (balanced) observations: 205

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.004745	0.003006	1.578175	0.1165
NPL	0.000223	0.000151	1.479053	0.1411
LDR	-8.04E-05	3.75E-05	-2.142288	0.0337
LEV	5.70E-05	4.65E-05	1.226102	0.2220
CAR	-0.000191	0.000114	-1.678595	0.0952
CAR*NPL	2.80E-06	6.59E-06	0.424634	0.6717
CAR*LDR	2.32E-06	1.52E-06	1.529499	0.1282
CAR*LEV	-4.18E-07	3.89E-06	-0.107490	0.9145
Effects Specification				
Cross-section fixed (dummy variables)				
Root MSE	0.001106	R-squared	0.405243	
Mean dependent var	-0.000736	Adjusted R-squared	0.227195	
S.D. dependent var	0.001437	S.E. of regression	0.001264	
Akaike info criterion	-10.30816	Sum squared resid	0.000251	
Schwarz criterion	-9.530087	Log likelihood	1104.586	
Hannan-Quinn criter.	-9.993447	F-statistic	2.276032	
Durbin-Watson stat	1.971315	Prob(F-statistic)	0.000084	

Source: 11.0 Version E-Views Output, 2020

Table 4. Random Effect Model Estimation

Dependent Variable: EMAG
Method: Panel EGLS (Cross-section random effects)
Date: 11/01/20 Time: 17:09
Sample: 2014 2018
Periods included: 5
Cross-sections included: 41
Total panel (balanced) observations: 205
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.004718	0.002102	2.244416	0.0259
NPL	0.000185	0.000126	1.462767	0.1451
LDR	-7.85E-05	2.68E-05	-2.931624	0.0038
LEV	5.46E-05	3.80E-05	1.438715	0.1518
CAR	-0.000198	9.19E-05	-2.153716	0.0325
CAR*NPL	2.39E-06	5.45E-06	0.438922	0.6612
CAR*LDR	2.49E-06	1.21E-06	2.062244	0.0405
CAR*LEV	-1.23E-06	2.40E-06	-0.513370	0.6083
Effects Specification				
			S.D.	Rho
Cross-section random			0.000363	0.0762
Idiosyncratic random			0.001264	0.9238

Weighted Statistics			
Root MSE	0.001226	R-squared	0.212655
Mean dependent var	-0.000619	Adjusted R-squared	0.184679
S.D. dependent var	0.001385	S.E. of regression	0.001251
Sum squared resid	0.000308	F-statistic	7.601153
Durbin-Watson stat	1.588093	Prob(F-statistic)	0.000000
Unweighted Statistics			
R-squared	0.214397	Mean dependent var	-0.000736
Sum squared resid	0.000331	Durbin-Watson stat	1.478218

Source: 11.0 Version E-Views Output, 2020

4.2.2 Panel Data Regression Model Selection

In selection model, there is 3 tests in selecting the models namely the Chow, the Hausman and the Lagrange Multiplier test.

Chow Test elect model by comparing common and fixed effect model for testing the hypotheses as follows:

H₀: Common Effect Model

H₁: Fixed Effect Model

With condition H₀ will be rejected if P-value < α (α = 5%) and accepted if P-value > 0.05 and vice versa and the result shows that the value of Cross section F probability of 0.1634 > 0.05, that is Common Effect Model selected as seen on part of test result on Table 5.

Table 5. Chow Test Result

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.257035	(40,157)	0.1634
Cross-section Chi-square	56.955454	40	0.0399

Source: 11.0 Version E-Views Output, 2020

Selection model in Hausman Test done by comparing Fixed Effect and Random Effect Model and testing the hypotheses as follows:

H₀: Random Effect Model

H₁: Fixed Effect Model

Under condition if P-value < 0,05, H₀ rejected and if P-value > 0,05, H₀ accepted. The result appears that Cross Section prob 0.0882 > 0.05, therefore Random Effect Model selected seen on Table 6.

Table 6. Hausman Test Result

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.030664	7	0.8822

Source: 11.0 Version E-Views Output, 2020

Meanwhile Lagrange Multiplier Test selects models by comparing Common Effect and Random Effect Model for preferable model and testing the hypotheses as follows:

Ho: Common Effect Model

H1: Random Effect Model

Under condition if P-value < 0,05, Ho rejected and if P-value > 0,05, Ho accepted. The result of Hausman Test shown that the probability of Chi Square value is 0.3877 > 0.05, therefore Common Effect selected as appears on Table 7.

Table 7. Lagrange Multiplier Test Result

Lagrange Multiplier Tests for Random Effects
Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	0.746226 (0.3877)	9.323087 (0.0023)	10.06931 (0.0015)
Honda	0.863844 (0.1938)	3.053373 (0.0011)	2.769891 (0.0028)
King-Wu	0.863844 (0.1938)	3.053373 (0.0011)	3.171736 (0.0008)
Standardized Honda	1.310357 (0.0950)	3.801141 (0.0001)	-1.598922 (0.9451)
Standardized King-Wu	1.310357 (0.0950)	3.801141 (0.0001)	0.625345 (0.2659)
Gourieroux, et al.*	--	--	10.06931 (0.0024)

Source: 11.0 Version E-Views Output, 2020

The following table 8 summarizes the result of selection model.

Table 8. Selection Model Result

The Test Type	Comparing Model	Cross Section Probability	Model Selected
Chow	Common Effect Vs Fixed Effect	0.1634	Common Effect
Hausman	Fixed Effect Vs Random Effect	0.0882	Random Effect
Lagrange Multiplier	Common Effect Vs Random Effect	0.3877	Common Effect Model

Source: Processed Data, 2020

Based on the above table, the model selected is Common Effect Model.

4.3 Classical Assumption Test

The minimum test must be run to meet the assumption of BLUE (Best Linear Unbiased Estimation) is Multicollinearity, Heteroscedasticity and Autocorrelation test (Ekananda, M, 2016).

4.3.1 Multicollinearity Test

Multicollinearity test aims to find the existence of the correlation between independent variables, BLUE assumption needs no multicollinearity. The result shown on Table 9.

Table 9. Multicollinearity Test Result

	NPL	LDR	LEV	CAR
NPL	1	0.09129652	0.13127050	-0.0887940
LDR	0.09129652	1	0.1980116	-0.1369011
LEV	0.13127050	0.1980116	1	-0.3447355
CAR	-0.0887940	0.1369011	-0.3447355	1

Source: 11.0 Version E-Views Output, 2020

All of correlation coefficient between NP, LDR, LEV and CAR < 0.80 as seen on Table 4.9, concluded that there is no multicollinearity problem.

4.3.2 Heteroscedasticity Test

E-views model estimation of Common Effect and Fixed effect are potential experiences heteroscedasticity problem. To resolve this, the preferable model is found by comparing the model selected with and without weight. The following tables shows Common Effect Model without (table 2) and with weight (table 10).

Table 10. Weighted Common Effect Model

Dependent Variable: EMAG
Method: Panel EGLS (Cross-section weights)
Date: 11/01/20 Time: 17:06
Sample: 2014 2018
Periods included: 5
Cross-sections included: 41
Total panel (balanced) observations: 205
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.003397	0.001016	3.344607	0.0010
NPL	0.000167	7.37E-05	2.271094	0.0242
LDR	-6.10E-05	1.44E-05	-4.242391	0.0000
LEV	2.86E-05	2.39E-05	1.195965	0.2331
CAR	-0.000186	4.26E-05	-4.374756	0.0000
CAR*NPL	1.17E-06	3.12E-06	0.375505	0.7077
CAR*LDR	2.45E-06	6.35E-07	3.865543	0.0002
CAR*LEV	-1.05E-06	1.16E-06	-0.900336	0.3690
Weighted Statistics				
Root MSE	0.001211	R-squared	0.361095	
Mean dependent var	-0.001588	Adjusted R-squared	0.338393	
S.D. dependent var	0.002718	S.E. of regression	0.001235	
Sum squared resid	0.000301	F-statistic	15.90574	
Durbin-Watson stat	1.446828	Prob(F-statistic)	0.000000	
Unweighted Statistics				
R-squared	0.183056	Mean dependent var	-0.000736	
Sum squared resid	0.000344	Durbin-Watson stat	1.458758	

Source: 11.0 Version E-Views Output, 2020

The comparison of un-weighted and weighted Common Effect model seen on the following table 11.

Table 11. Unweighted and Weighted Common Effect Model Comparison

Parameter	Unweighted Common Effect	Weighted Common Effect
Statistic t probability	3 < 0.05	4 < 0.05
R- Squared	0.214764	0.361095
Statistic F probability	0.000000	0.000000

Source: Processed Data, 2020

Based on 3 parameters, the weighted Common Effect Model is preferable than unweighted, therefore the final model selected is weighted Common Effect model as represented on table 10.

4.3.3 Autocorrelation Test

The existence correlation between observation in the form of time series or cross section could be identified by autocorrelation test, and by condition the panel data is characterized by this form, therefore autocorrelation is ignored (Ekananda, M, 2016).

4.4 Hypotheses Test

Based on model selection formulation, the preferable model in Common Effect Model and further heteroscedasticity test concluded that the weighted is better than unweighted version, therefore the hypotheses test is referred on weighted Common Effect Model as stated on table 4.11.

4.4.1 The Determination Coefficient (Adjusted R²)

Table 4.11. states that the Adjusted R² value of 0,361095 means that all independent variables, Non-Performing Loan (NPL), Liquidity Ratio (LDR), Leverage (LEV), Capital Adequacy Ratio (CAR) and CAR moderates NPL.LDR, LEV are able to describe Earning Management (E-mag) amounting to 36,10%. The value of 36,10% explains that the effect of all independent variables on Earning Management is weak because < 0.50.

4.4.2 The F Statistics Test (simultaneously)

The F-value of 15.90574 with probability of 0,000000 < 0,05, indicates that all independent variables (NP, LDR, LEV and CAR) collectively affects Earning Management.

4.4.3 The t-test (partial)

Due to the t-statistics probability value less than 0.05, NPL, LDR, CAR has significant effects on Earning Management while Leverage has not, on the other hand CAR only moderates the relation between LDR and Earning Management.

4.4.4 Multiple linear regression analysis

The regression equation forms as follows

$$\text{Earning Management (Y)} = 0.003397 + 0.000167 (\text{Non-Performing Loan}) - 6.10\text{E-}05 (\text{Loan to Deposit Ratio}) + 2.86\text{E-}05 (\text{Leverage}) - 0.000186 (\text{Capital Adequacy Ratio}) + 1.17\text{E-}06 (\text{Capital Adequacy Ratio X Non-Performing Loan}) + 2.45\text{E-}06 (\text{Capital Adequacy Ratio X Loan to Deposit Ratio}) - 1.05\text{E-}06 (\text{Capital Adequacy Ratio X Leverage}) + \epsilon.$$

The explanation of above equation as follows:

The constant value of 0.003397 describes that Earning Management (E-Mag) will be 0.003397, when Non-Performing Loan (NPL), Loan to Deposit Ratio (LDR), Leverage (LEV), Capital Adequacy Ratio (CAR), CAR*NPL, CAR*LDR and CAR*LEV experiences no change.

NPL's coefficient is positive at 0.000167 means that any increase NPL by 1 unit will increase E-Mag by 0.000167 vice versa, given other independent variables constant.

LDR's coefficient is negative at $-6.10E-05$. This implies that any increase in LDR by 1 unit will decrease E-Mag $6.10E-05$ and vice versa given other independent variables is constant.

The value of regression's coefficient of LEV is at $+2.86E-05$. This means that any increase in LEV by 1 unit will increase E-Mag by $2.86E-05$, given other independent variables is assumed to be constant and vice versa.

The CAR's coefficient is at -0.000186 . This implies that given other independent variables assumed constant, any increase of CAR by 1 unit will decrease E-Mag by 0.000186 and vice versa.

The regression coefficient of CAR*NPL is at $+1.17E-06$. This implies that any increase in CAR*NPL by 1 unit will increase E-Mag by $1.17E-06$, given other independent variables assumed constant and vice versa.

The CAR*LDR coefficient is at $+2.45E-06$. This means that when other independent variables assumed constant, any increase of the CAR*LDR by 1 unit will increase E-Mag by $2.45E-06$ and vice versa.

The value of regression's coefficient of CAR*LEV is at $-1.05E-06$. This states that any increase in CAR*LEV by 1 unit will decrease E-Mag by $1.05E-06$, given other independent variables is constant and vice versa.

5. Discussion

The following table serves the hypotheses test result summary.

Table 12. Hypotheses Test Result Summary

No	Hypotheses	Result
1	Company Risk affects significantly on Earning Management	Accepted
2	Liquidity affects significantly on Earning Management	Accepted
3	Leverage affects significantly on Earning Management	Rejected
4	Capital Adequacy Ratio affects significantly on Earning Management	Accepted
5	Capital Adequacy Ratio moderates the relation between Company Risk and Earning Management	Rejected
6	Capital Adequacy Ratio moderates the relation between Liquidity and Earning Management	Accepted
7	Capital Adequacy Ratio moderates the relation between Leverage and Earning Management	Rejected

Source: Processed Data, 2020

5.1 The effect of Company Risk on Earning Management (E-Mag)

The statistical result shows that Company Risk proxied by NPL significantly effects on E-Mag. NPL describes the degree of loan that are not well performed which directly caused to the company's income/profit. Therefore NPL's variation will cause profit fluctuates what management must avoid by doing earning management to produce a good information for the investor. At least study by Kamil and Herawati (2016) in line with this result.

5.2 The Effect of Liquidity on Earnings Management

Statistical result explains that Liquidity proxied by Loan to Deposit Ratio (LDR) significantly effects on E-mag) in negative way. It means that there is an opposite behavior between LDR and E-mag, the

higher liquidity the less likely the company to conduct earnings management and vice versa. High liquidity describes the company being able to pay off short-term debt with its current assets so that management does not have to do earnings management to get loans from creditors. Otherwise, low liquidity will drive opposite pattern push management to execute E-Mag. This result in line with studies by Moghaddam & Abbaspour (2017), Sadeghi & Zareie (2015), and Mulyana, et al (2018).

5.3 *The Effect of Leverage on Earning Management*

The result shows that Leverage (LEV) does not significantly effects Earning Management (E-mag). Leverage indicates the risks faced by companies where the company uses debt to finance operational activities and asset purchases. Companies with high leverage tend to have great risks such as the emergence of interest and the large debt costs that companies must pay. However, this is different from the results of research where leverage with debt to equity ratio indicators has no effect on earnings management and it is also incompatible with the debt (equity) hypothesis in positive accounting theory which states that the larger the ratio of corporate debt to equity the more likely managers are to use accounting methods that can increase profits. The logical reason is because in conducting profit management, the management does not always consider Leverage or it is caused by another reasons.

5.4 *The effect of Capital Adequacy Ratio (CAR) on Earning Management (E-mag)*

The result shows that CAR significantly affects E-mag in negative way, it means that the impact of CAR on E-mag is in opposite pattern, when CAR increase in positive sign will affect E-mag in negative and vice versa. CAR is a ratio of capital that must be hold by a bank management as a minimum threshold for covering its risk (Idroes and Sugiarto,2006) usually arranged by central bank. According to Bank Indonesia (2013) The capital adequacy ratio is the provision of minimum capital that must be maintained by each bank in a certain proportion of total assets weighted by risk (ATMR) by 8%. Capital Adequacy's variable is the result of the basic capital with total risk-weighted assets (Zedan and Daas, 2017). The reason of CAR formed is for facing the bank risk, therefore CAR affects risk, affects E-mag caused E-mag is a strategy in managing earning variation or earning risk. This result in line with studies by Agnemas et al (2019), Yuliyandra et al (2019), Domenico and Iftekhar (2013), Abdolkarim and Narges (2017).

5.5 *Capital Adequacy Ratio (CAR) moderates the relation between Non-Performing Loan (NPL) and Earning Management*

Statistics result shows that CAR does not moderates the relation between NPL and E-Mag, it means CAR could not strengthen or weaken the relation between NPL and E-Mag.

5.6 *Capital Adequacy Ratio (CAR) moderates the relation between Loan to Deposit Ratio (LDR) and Earning Management (E-Mag).*

The result appears that CAR moderates the relation between LDR and E-Mag, it means CAR could strengthen or weaken the relation between LDR and E-Mag.

5.7 *Capital Adequacy Ratio (CAR) moderates the relation between Leverage (LEV) and Earning Management (E-Mag).*

Statistic result states that CAR does not moderate the relation between LEV and E-Mag, it means CAR could not strengthen or weaken the relation between LEV and E-Mag.

6. Conclusion and Suggestion

Simultaneously, all independent variables represented by NPL, LDR, LEV AND CAR weakly affect Earning Management, but from these variables partially, NPL, LDR and CAR significant effect on Earning Management, but LEV does not affect. Furthermore, CAR moderates the relation between LDR and Earning Management. This study implies that due to weakly impact, banking management must reobserve the role of Company Risk, Liquidity, Leverage and Capital Adequacy Ratio in executing Earning Management.

Considering that all independent variables, that is NPL, LDR, LEV, CAR weakly affect Earning Management, hence it is suggested to further researcher to re-observe the effect of these variables to Earning Management to find a better result about Earning Management determinant by replace with other variables.

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