THE INFLUENCE OF RISK-BASED BANK RATING (RBBR) METHOD ON PROFITABILITY OF PRIVATE-OWNED BANKS IN INDONESIA

PENGARUH METODE RISK-BASED BANK RATING (RBBR) TERHADAP PROFITABILITAS BANK SWASTA DI INDONESIA

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Abstract: The banking sector plays an important role in supporting and increasing the economic rate in country. Bank with high level of soundness is a bank that can perform its functions well, therefore, optimal management of the banking sector can provide economic stability in a developed country and make developing countries ready to compete economically of both national and international level. This study is aimed to determine the influence of Risk-Based Bank Rating (RBBR) Method on Profitability of Private-Owned banks in Indonesia. In this study, population refers to the banks listed in Indonesia Stock Exchange, using purposive sampling technique and sample size of 6 Private-Owned Banks that have total assets more than 100 trillion in rupiahs. By using multiple regression analysis method, the result and conclusion show that Credit Risk, Market Risk, Liquidity Risk, Earnings and Capital simultaneously and significantly influence Profitability of 6 Private-Owned Banks in Indonesia. Furthermore, Market Risk and Earnings have significant and positive influences on Profitability. Credit Risk and Liquidity Risk have significant and negative influences on Profitability. Nevertheless, Capital has no significantly influence on Profitability. The banks' management must consider the importance of the risk management because those factors above have effect banks profitability.

Keywords*: risk-based bank rating, profitability*

Abstrak : Sektor perbankan memainkan peranan penting dalam mendukung dan meningkatkan tingkat ekonomi di sebuah negara.Bank dengan tingkat kesehatan yang tinggi adalah bank yang dapat melakukan fungsinya dengan baik, oleh karena itu, manajemen yang optimal dari sektor perbankan dapat memberikan stabilitas ekonomi di negara maju dan menjadikan negara berkembang siap untuk bersaing secara ekonomi di tingkat nasional dan internasional. Penelitian ini bertujuan untuk menentukan pengaruh metode Risk-Based Bank Rating (RBBR) terhadap profitabilitas bank swasta di Indonesia. Dalam penelitian ini, populasi mengacu kepada seluruh bank yang terdaftar di Bursa Efek Indonesia, menggunakan purposive sampling dan sampel dari 6 bank swasta yang memiliki jumlah aset lebih dari 100 milyar rupiah. Dengan menggunakan metode analisa regresi berganda, hasil dan kesimpulan menunjukkan bahwa resiko kredit, resiko pasar, resiko likuiditas, pendapatan dan modal berpengaruh secara simultan dan signifikan terhadap profitabilitas. Selanjutnya, resiko pasar dan pendapatan memiliki pengaruh yang positif dan signifikan terhadap profitabilitas. Resiko kredit dan resiko likuiditas memiliki pengaruh negatif dan signifikan terhadap profitabilitas. Namun, modal secara signifikan tidak memiliki pengaruh terhadap profitabilitas.Manajemen bank sebaiknya mempertimbangkan pentingnya manajemen resiko karena faktor-faktor diatas memiliki pengaruh pada profitabilitas bank.

Kata Kunci: risk-based bank rating, profitabilitas

INTRODUCTION

Research Background

Indonesian banks have experienced fluctuation. It began in 1983 when the several of deregulations were conducted by the government, banking business expanded rapidly between 1988 and 1996. Around July 1997, monetary crisis hit Indonesia as banking industry finally collapsed (Dendawijaya, 2009). As a result, national banking industries experienced severe performance issues, particularly in regards of the soundness of banks. Therefore, the government considers the need for changes to the existing banking laws the follows year.

Due to the importance of bank soundness system, Bank Indonesia as rule-maker overseeing this as the implementation of bank soundness rating in Bank Indonesia Regulation No. 13/1/PBI/2011 on the Rating of Commercial Bank Soundness. Each bank is required to conduct the self-assessment of bank soundness through Risk-Based Bank Rating (RBBR) approach by covering risk profile components, good corporate governance, earnings and capital (Bank Indonesia, 2011). Bank is divided into two main groups, the State-Owned Bank or BUMN and the Private-Owned Bank. According to *Otoritas Jasa Keuangan* (2017), there are 6 private banks that are in the top 10 banks in Indonesia which have largest assets in the end of 2016 those are BCA, CIMB Niaga, Panin Bank, Permata Bank, Maybank and Bank Danamon.

Furthermore, based on Otoritas Jasa Keuangan (2017), each bank has ROA which decreases or increases each year from 2007-2016. By obtaining ROA at a good value can describe how much profit of the company. From the 6 private-owned banks, the highest ROA is owned by BCA which was 4% in 2016, and the lowest ROA is owned by Bank Permata which was -4.9% in 2016. In the Banking Industry if the ROA value of a bank is very low or under the assessment standard of central bank, concludes the level profit is low. It will also have an impact on the overall activities of the bank and can be classified as an insufficient bank. In determining the banks soundness, Bank Indonesia is more concerned with assessment of the profit based on Return on Assets (ROA). It is because profitability value of a bank as measured by assets mostly comes from deposits of citizens (Dendawijaya, 2009:119). Moreover, this study examines more on the relationship of the bank's soundness level by using RBBR method and their influence on the level of profitability. Based on the background above, this research is to analyze *the influence of RBBR method on profitability of private-owned banks in Indonesia.*

Research Objectives

The objectives of this research are to identify the influence of:
1. RBBR Method to Private-Owned Banks profitability in the period of 2007-2016 simultaneously.
2. Credit Risk to Private-Owned Banks profitability in the period of 2007-2016 partially.
3. Market Risk to Private-Owned Banks profitability in the period of 2007-2016 partially.
4. Liquidity Risk to Private-Owned Banks profitability in the period of 2007-2016 partially.
5. Earnings to Private-Owned Banks profitability in the period of 2007-2016 partially.
6. Capital to Private-Owned Banks profitability in the period of 2007-2016 partially.

THEORETICAL REVIEW

Financial Management

Khan and Jain (2007:7) claimed that financial management provides a conceptual and analytical framework for financial decision making. The finance function covers both acquisitions of funds as well as their allocations. Thus apart from the issues involved in acquiring external funds, the main concern of financial management is the efficient and wise allocation of funds to various uses.

Bank

In Indonesian Acts No. 10 in 1998 about banking stated that bank is a company that collects funds from the citizens in a form of deposits and to redistribute the funds in forms of loan/credit or other forms of lending, and provide other financial services to improve the life of Indonesian people.

Banking Financial Statement

Luecke (2002:97) stated that financial statements are the essential documents of business. The income statement and the balance sheet are the basic reports that a firm constructs apply by company's management and

used for distribution to stockholders, regulatory bodies, and the public. Those are the primary sources of historical financial information about the firm (Lewellen, Halloran and Lanser, 2000:45).

Financial Ratio

Keown *et al*., (2005:72) stated that financial ratios help to identify financial strengths and weaknesses of a company. The ratios give two ways of making meaningful comparisons of a firm's financial data: (1) ratio across time can be examined to identify any trends; and (2) the firm's ratios can be compared with those of other firms.

Risk-Based Bank Rating Method

Bank Indonesia Regulation No. 13/1/PBI/2011 about the Assessment of Commercial Banks stated that it was done by several considerations of the global economic crisis, the international development standards and eliminates the potential for duplication in the bank sound assessment. Along with these changes, began in December 2011, banks use the new method known as Risk-Based Bank Rating method. RBBR method consists of risk profile that carried out 8 risks (credit risk, market risk, liquidity risk, operational risk, legal risk, strategic risk, compliance risk, and reputation risk), Good Corporate Governance (GCG), Earnings and Capital.

Profitability

Many regulators believe that ROA is the best measure of bank profitability (Hassan and Bashir, 2003).

Previous Research

Echekoba, Egbunike and Kasie (2014) studied about determinants of bank profitability in Nigeria using CAMEL rating model. This study showed that liquidity has a significant impact on banks profitability while capital adequacy, assets quality, management efficiency, earning did not.

Lartey, Antwi and Boadi (2013) studied the relationship between net interest margin (NIM) and return on assets (ROA) of listed banks in Ghana. This study showed there is a strong positive correlation between the NIM and ROA of the listed banks in Ghana.

Conceptual Framework

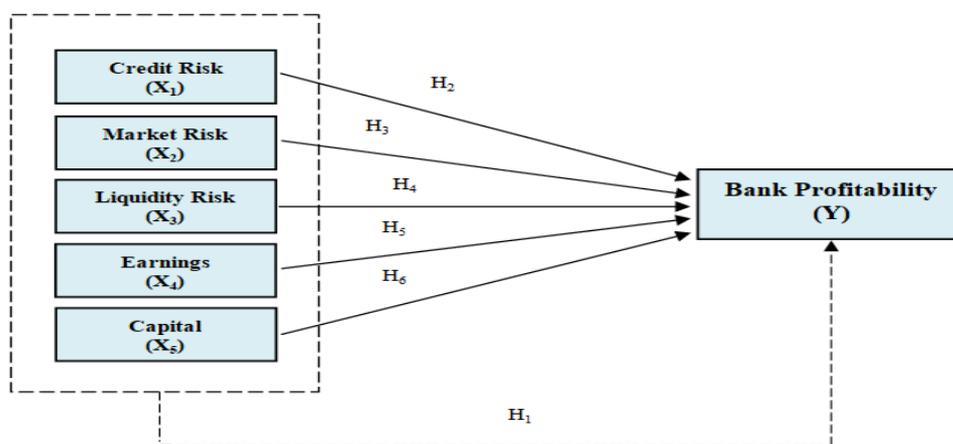The framework shows influence between variables. It shows the hypothesis proposed.

Figure 1. Conceptual Framework
Source: Theoretical Framework (2017)

Research Hypothesis

H_1: Risk-Based Bank Rating (RBBR) method is assumed to have influence on bank profitability simultaneously.
H_2: Credit risk is assumed to have influence on bank profitability partially.
H_3: Market risk is assumed to have influence on bank profitability partially.
H_4: Liquidity risk is assumed to have influence on bank profitability partially.
H_5: Earnings are assumed to have influence on bank profitability partially.
H_6: Capital is assumed to have influence on bank profitability partially.

RESEARCH METHODS

Type of Research

This research used quantitative research. Sugiyono (as cited in Teng and Simorangkir, 2018) stated that quantitative research is research in the form of numbers and analysis using statistics.

Place and Time of Research

This research was conducted on 6 private-owned banks which are listed in Indonesia Stock Exchange in the period of 2007 – 2016. The research was conducted in about 3 months from June to September 2017.

Population and Sample

The population in this research is all banks that are listed in Indonesia Stocks Exchange. This research used purposive sampling method. According to Hair *et al*., (2007), it involves selecting elements in the sample for a specific purpose. The sample of this research is 6 private-owned banks in Indonesia that fulfilled the criteria which are listed in Indonesia Stock Exchange and has total assets more than Rp.100 trillion in the end of 2016.

Data Collection Method

The data used in this research is secondary data which are taken from internet, books, and journals.

Operational Definition and Measurement of Research Variables

1. Credit risk is a risk that arises as an effect of customer/debtor failure in returning or paying back the loan. It is represented by Non-Performing Loans (NPL).

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

2. Market risk is a risk that arises because of market variable movement which are interest rate and exchange rates that may cause failure of the bank. It is represented by interest rate risk (IRR).

$$IRR = \frac{\text{Interest Income}}{\text{Interest Expense}} \times 100\%$$

3. Liquidity risk is the inability of a bank to meet the requirements of cash adequacy to fulfill its short-term obligations. It is represented by Loan to Deposit Ratio (LDR).

$$LDR = \frac{\text{Total Loans}}{\text{Third Parties Funds}} \times 100\%$$

4. Earnings are represented by Net Interest Margin (NIM). NIM is a measure of the difference between the interest income generated by banks or other financial institutions and the amount of interest paid out to the lenders, relative to the amount of their (interest-earning) asset.

$$\text{Net Interest Margin} = \frac{\text{Net Interest Income}}{\text{Average Earning Asset}} \times 100\%$$

5. Capital is represented by Capital Adequacy Ratio (CAR). This assessment indicates the bank capital adequacy to cover its risk and to anticipate a risk in the future.

$$CAR = \frac{\text{Total Capital}}{\text{Risk Weighted Assets}} \times 100\%$$

6. Profitability is the ability to make profit from all the business activities of an organization, company, firm, or an enterprise. It is represented by Return on Assets (ROA).

$$ROA = \frac{\text{Earnings before Income Tax}}{\text{Average Total Assets}} \times 100\%$$

Data Analysis Method

Multiple Linear Regression

This research used multiple linear regression method to analyze the influence of RBBR method on bank's profitability of 6 private-owned banks in 2007–2016. Multiple regression is a descriptive tool used to (1) develop a self-weighting estimating equation by which to predict values for a dependent variable from the value of independent variables, (2) control confounding variables to better evaluate the contribution of other variables,

or (3) test and explain a causal theory (Cooper and Schindler, 2001:767). The regression model that is used in this study is :

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$$

Description:

Y   = Profitability (ROA)
X_1 = Credit Risk (NPL)
X_2 = Market Risk (IRR)
X_3 = Liquidity Risk (LDR)
X_4 = Net Interest Margin (NIM)
X_5 = Capital (CAR)
α = Constant
$\beta_1, \beta_2, \beta_3, \beta_4$ = The regression coefficient of each variable
e   = Error

Testing of Classical Assumptions

Normality Test
The most fundamental assumption in multivariate analysis is normality, referring to the shape of the data distribution for an individual metric variable and its correspondence to the normal distribution, the benchmark for statistical method (Hair *et al*., 1998:70).

Multicollinearity Test
Multicollinearity occurs when any single independent variable is highly correlated with a set of other independent variables (Hair *et al*., 1998:143). To detect the presence or absence of multicollinearity in the regression model can be seen from the tolerance value or Variance Inflation Factor (VIF). The size of each independent variable indicates which one is explained by the other independent variables (Ghozali, 2013:105).

Heteroscedasticity Test
Models in which the errors do not all have the same variance are said to exhibit heteroscedasticity (Newbold, Boyd-Barrett and Van Den Bulck, 2002:508). Sulaiman (2004:88) said that scatter plot is the residuals against an independent variable. A model can be concluded not apparent of heteroscedasticity if the scatter plot does not form any pattern.

Autocorrelation Test
Hanke and Reitsch (1998:360) assumed autocorrelation appears cause the observed on time series are linked to each other. This problem emerges of the residual from on observation to another. Autocorrelation could be identified by computing the critical value of Durbin-Watson Statistic (d-test).

Coefficient of Correlation (R) and Coefficient of Determination (R^2) Test
Coefficient of determination is used to show the percentage of variability in Y that can be explained by regression equation (Newbold *et al*., 2002:387). Coefficient of Multiple Correlation is used to measure the strength of relationship between Y (dependent variable) and X (Independent variables) (Newbold *et al*., 2002:431).

Hypothesis Testing
In order to test the hypothesis, a statistical analysis such as F-Test and t-Test need to be calculated. The F-Test and t-Test will be useful in a situation when this study need to find out the relationship between dependent and independent variables. When F-Test and t-Test are given and compared to the F-Table and t-Table, the hypothesis can be examined.

RESULTS AND DISCUSSION

Multiple Linear Regression Analysis Result
Table 1. Multiple Linear Regression Result

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.560	.629		2.479	.017
	NPL	-.306	.091	-.346	-3.357	.002
	IRR	.005	.001	.391	3.954	.000
	LDR	-.016	.006	-.211	-2.566	.014
	NIM	.170	.040	.348	4.245	.000
	CAR	.027	.025	.079	1.102	.277

a. Dependent Variable: ROA

Source: SPSS Output (2017)

Based on table 1, the equation of multiple linear regression model in this research is shown as follow:

$$Y = 1.560 - 0.306X_1 + 0.005X_2 - 0.016X_3 + 0.170X_4 + 0.027X_5 + e$$

Classical Assumptions Test Result
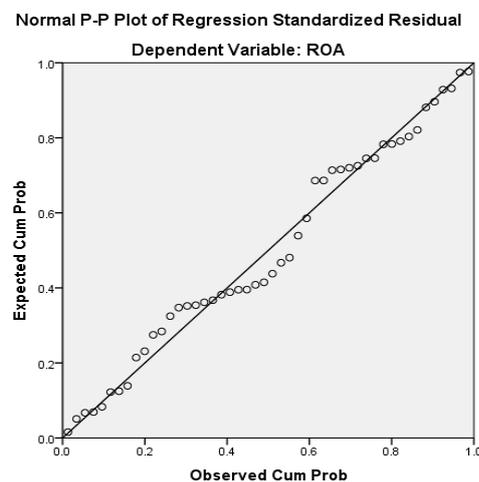
Normality Test Result

Figure 2. Normality Test Result
Source: SPSS Output (2017)

Figure 2 shows the data represented by the dots are spreading near and follow the direction of diagonal line. This proves that regression model of the influence of Credit Risk (X_1), Market Risk (X_2), Liquidity Risk (X_3), Earnings (X_4), and Capital (X_5) on Profitability (Y) fulfills the condition and passes the normality test.

Multicollinearity Test Result
Table 2. Multicollinearity Test Result

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	NPL	.413	2.422
	IRR	.449	2.229
	LDR	.648	1.544
	NIM	.653	1.530
	CAR	.856	1.169

Source: SPSS Output (2017)

Table 2 shows the result of tolerance value and Variance Inflation Factor (VIF) of X_1, X_2, X_3, X_4, and X_5. Since all the tolerance values are more than 0.2 and the VIF value is less than 10, the model concluded to be free from multicollinearity.
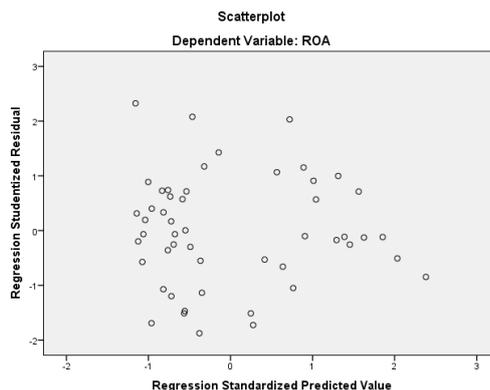
Heteroscedasticity Test Result

Figure 3. Heteroscedasticity Test Result
Source: SPSS Output (2017)

Figure 3 shows that the pattern of the dots is spreading and do not have clear pattern, and the dots are spreading above and below 0 (zero) in the Y and this is proved that the model is free from heteroscedasticity.

Autocorrelation Test Result
Table 3. Durbin Watson Table

Durbin-Watson
1.465

Source: SPSS Output (2017)

The output of SPSS shows the value of DW is 1.465. The dL value is 1.317 and dU value is 1.773. Considering the Durbin-Watson value from SPSS output is 1.465 means this model is located in the area between dL and dU. To conclude there is inconclusive in this model. It can not be concluded whether it has autocorrelation or not.

Coefficient of Correlation (R) and Coefficient of Determination (R^2) Result
Table 4. Coefficient of Correlation (R) and Coefficient of Determination (R^2) Result

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.903[a]	.815	.793	.455526	1.465

a. Predictors: (Constant), CAR, LDR, NIM, IRR, NPL
b. Dependent Variable: ROA

Source: SPSS Output (2017)

The interpretation of coefficient correlation (R) that shown on table 4 which is 0.903 means the five independent variables and the dependent variable have a positive relationship. The value from result of analysis determination (R^2) is 0.815 may indicate that the contribution of the effect of Credit Risk (X_1), Market Risk (X_2), Liquidity Risk (X_3), Earnings (X_4) and Capital (X_5) on Profitability (Y) is 81.5% while the remaining 18.5% is affected by other variables that are not examined in this study.

Hypothesis Testing

Simultaneous Test (F-Test) Result
Table 5. F-Test Result

ANOVA[a]						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	38.502	5	7.700	37.110	.000[b]
	Residual	8.715	42	.208		
	Total	47.217	47			

a. Dependent Variable: ROA
b. Predictors: (Constant), CAR, LDR, NIM, IRR, NPL

Source: SPSS Output (2017)

The significant value is less than 0.05, this means the confidence of this prediction is above 95% and probability of this prediction error is below 5% which is 0.000. The value of F-Table in this model is 2.44. It

means the F-Count value is more than the F-Table value (37.110 > 2.44). So H_1 is accepted that the independent variables significantly affect the dependent variable simultaneously.

Partial Test (t-Test) Result
Table 6. F-Test Result

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.560	.629		2.479	.017
	NPL	-.306	.091	-.346	-3.357	.002
	IRR	.005	.001	.391	3.954	.000
	LDR	-.016	.006	-.211	-2.566	.014
	NIM	.170	.040	.348	4.245	.000
	CAR	.027	.025	.079	1.102	.277

a. Dependent Variable: ROA

Source: SPSS Output (2017)

By using the level of significant 0.05 and Degree of Freedom (dF) of 48 which is 2.018, the explanation of table 6 which is t-Test results are as follows:

1. t-Count for credit risk measured by NPL (X_1) is -3.357 > t-Table = 2.018 and the level of significant is less than 0.05 which is 0.002. The result can be used to declare that credit risk (X_1) has a negative influence on profitability (ROA) (Y) partially.
2. t-Count for market risk measured by IRR (X_2) is 3.954 > t-Table = 2.018 and the level of significant is < 0.05 which is 0.000. It means that market risk (X_2) has a positive influence profitability (ROA) (Y) partially.
3. t-Count for liquidity risk measured by LDR (X_3) is -2.566 > t-Table = 2.018 and the level of significant is < 0.05 which is 0.014. The result of this test can be used to declare that liquidity risk (X_3) has a negative influence on profitability (ROA) (Y) partially.
4. t-Count for earnings measured by NIM (X_4) is 4.245 > t-Table = 2.018 and the level of significant is less than 0.05 which is 0.000. The result can be used to declare that earnings (X_4) have a positive influence profitability (ROA) (Y) partially.
5. t-Count for Capital measured by CAR (X_5) is 1.102 < t-Table = 2.018 and the level of significant is greater than 0.05 which is 0.277. It means that capital (X_5) has no partial influence profitability (ROA) (Y).

Discussion

The banking sector plays an important role in supporting and increasing the economic rate in a country. Bank that can perform its functions well, therefore, an optimal management of the banking sector can certainly provide economic stability in a developed country and make developing countries ready to compete economically of national and international level.

Credit risk has a partial influence to Return on Assets (ROA) as measurement of Profitability. It is statistically significant and has a negative effect to profitability. This finding is in line with the previous research by Tafri *et al*., (2009). The result can be justified by the fact that the more banks are exposed to high-risk loans, the higher the accumulated unpaid loans and the higher the terms of the loan losses are implying that these loan losses have resulted in lower returns for the banks.

Market risk has a positive and statistically significant effect to profitability partially. On the previous research stated by Tafri *et al*., (2009) shows the influence of Interest Rate Risk on ROA is significant. Interest rate risk is the ratio faced by banks due to changes in interest rates that occur in the market. Rate sensitive assets and rate sensitive liabilities are used to overcome differences between sensitive assets and liabilities on interest. When interest rates increase and interest rate risk increases, the condition is that the rate sensitive asset is greater than the rate sensitive liabilities which then lead to higher interest income increase compared to the increase of interest cost so that the profit of the company will also increase.

Liquidity risk shows a partial effect to profitability. It has a negative but significant influence to profitability. Literatures show mixed results on the influence of liquidity risk on profitability. On the previous research by Tafri *et al*., (2009) has insignificant influence of liquidity risk on profitability. A contrary result stated by Echekoba *et al*., (2014) found that liquidity risk has a significant and positive influence on profitability. Theoretically, the higher the LDR, the more credit is channeled. Therefore more income will be earned from credit interest. However, the current phenomenon is the increasing number of NPL in the credit provided by the bank. The existence of NPL will certainly cause a decrease in ROA, the higher the LDR the

possibility of NPL will be increase. This result is similar with the previous research by Arumastuti and Sampurno (2016) indicated that liquidity risk has a negative influence on profitability. The higher funds that serve as liquidity buffer and the higher the buffer compared to the required liquidity, the higher the probability of funds to be unproductive. It eventually leads to decrease on ROA.

Earnings in this study are found to be partially has a significant and positive influence to profitability (ROA). This finding supports the notion from Lartey *et al*., (2013) and Arumastuti and Sampurno (2016) who also found that NIM has a positive significant influence to ROA. NIM is determined by interest rate, the greater this ratio then the interest income on productive assets will increase therefore the probability the bank in troubled condition will decrease.

Capital of 6 Private-Owned Banks show has no partial influence on profitability measured by ROA. It can be caused by the bank that is still unable in utilizing capital sources that cause capital growth can not balance the growth of productive assets. In Indonesia, with the provision of a minimum CAR of 8% by Bank Indonesia, some of the funds held by bank should be allocated to the CAR so that if a bank loses the opportunity to distribute the credits and to invest in other securities then high CAR will not increase ROA. In addition, the bank as an intermediary institution distributes the funds for credit which is from third party funds collected from the society, not from its own capital. This result is similar with the previous research by Echekoba *et al*., (2014) and Arumastuti and Sampurno (2016).

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

There are six constructive findings that can be concluded from the overall result in this research, which are listed as follow:
1. Credit Risk, Market Risk, Liquidity Risk, Earnings and Capital are simultaneously and significantly influence the Profitability of the 6 Private-Owned Banks in Indonesia.
2. Credit Risk has negative influence on the Profitability of the 6 Private-Owned Banks in Indonesia.
3. Market Risk has positive influence on the Profitability of the 6 Private-Owned Banks in Indonesia.
4. Liquidity Risk has negative influence on the Profitability of the 6 Private-Owned Banks in Indonesia.
5. Earnings have positive influence on the Profitability of the 6 Private-Owned Banks in Indonesia.
6. Capital has no influence on the Profitability of the 6 Private-Owned Banks in Indonesia.

Recommendations

There are four practical recommendations that can be concluded from overall result in this research, which are listed as follow:
1. The Management of the Banks must consider the importance of the effect of Credit Risk, Market Risk, Liquidity Risk, Earnings, and Capital. Because according to the result of this study, those five factors have an influence through the bank's profitability.
2. The Banks Management should pay more attention to the effect of Credit Risk and Liquidity Risk to the Profitability of the Bank. Moreover, Banks need to create more efficient risk management in order to lead to higher profit for the Private-Owned banks.
3. The investors and customers are expected to pay more attention to bank's risk profile factors, due to the fact that the factors significantly influence the profitability of Bank.
4. To the next researcher who will conduct research with the same topic, is expected to complete the variables with all the components of Risk-Based Bank Rating (RBBR) Method which are Operational Risk, Law Risk, Strategic Risk, Compliance Risk, Reputation Risk, and Good Corporate Governance (GCG).

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