

## **Profitability Determinants of Go-Public Bank in Indonesia: Empirical Evidence after Global Financial Crisis**

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**ABSTRACT** :This study aims to get empirical evidence, to examine and explaining the profitability determinants of go public bank in Indonesia based on management or owner interest. This research was conducted at go public bank or listed in Indonesia Stock Exchange with observation period of 2009-2013. Research population is 25 banks. Analysis method is regression linier analysis. Research results found that only credit growth has positive effect on return on assets (ROA), while the other variables as credit risk, income diversification, operational efficiency, capital adequacy ratio (CAR), market structure, GDP growth and inflation does not affect on return on assets (ROA). Profitability determinant factor in according owner interest show that operational efficiency becomes a determinant variable of return on equity (ROE). Other variables as credit risk, income diversification, capital adequacy ratio (CAR), credit growth, market structure, GDP growth and inflation does not affect the return on equity (ROE). The research findings provide support for the agency theory where there is different interest or approach between management and owners to determine profitability factors.

**KEYWORDS**: credit risk, income diversification, operational efficiency, credit growth, capital adequacy ratio, market structure

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### **I. INTRODUCTION**

The global financial crisis was triggered by hypnotic subprime mortgage crisis in United States at July 2007 with negative impact on financial industry markets around the world. It causes loss of many financial institutions, including banks. In countries where the market-based capital markets dominate economic activity, many banks face a deterioration of profitability, capital and liquidity status because of an unexpected crisis of global financial markets and weakening of financial industry credit (Awojobi and Amei, 2011). Global financial sector is based on regulation regime which is less effective to respond systemic risk. On other hand, ramifications of such systems are not easily detected quickly due to information asymmetry. Large financial institutions that operate globally (systemically important financial institutions) did not have sufficient capital cushion to absorb losses. This empirical facts show that profitability is a fundamental factor as internal forces to face banking competition and systemic effects.

Profitability is one measure of a bank's financial performance. All stakeholders can assess the efficiency and success of banks in managing their resources. Efficiency is one of performance parameters that are theoretically underlie the entire performance of an organization. Ability to create maximum output with existing input is the expected financial performance. The success is demonstrated by past profitability (past performance). It can be used to assess banks ability to project simultaneously banks ability in future (Hanafi and Halim, 2003: 6). Given the importance to create stable profitability in banking industry and banking industry impact on domestic capital market and economy as a whole, this study also examines whether external environmental factors affect on macro-economic profitability of go public bank. This also evaluates the bailout policies impact of Century bank on profitability and stability of national banking system during the global financial crisis. Research the determinants of profitability have been carried out. One study that is widely used as a reference for international research is Demirguic-Kunt and Harry Huizinga in 1998, 1999 and 2001. Kunt and Huizinga research concern to economic factors and financial structure of a country. To know internal performance, banks use variables bank characteristic of size, financial ratios ranging from total bank financing, capital, bank activities and productive assets Research on determinants of bank profitability is generally focused on return on assets (ROA), bank's equity (return on equity ROE), and net interest margin (NIM) as the dependent variable (Dietrich and Wanzenried, 2010). More recent research has expanded the a number factors. Athanasoglou et al., (2008), Brissimis et al., (2008) and Gracia and Harrero et al., (2009) have examined the effect of banks ratio as capital ratios, operational efficiency, bank size, ownership and concentration as a determinant of bank's financial performance. Studies on banking industry in Indonesia about non-interest income diversification are still rare. But reality shows that activity of fee-based banking services are source of income diversification with higher intensity.

This is because income diversification has two main functions in banking business, namely (i) to stabilize earnings (Bush and Kick, 2009) and (ii) to obtain market power to attract deposits (Fiordelisi and Molyneux, 2010). This study re-examines previous study prior result to know whether geographical differences, financial and banking system factors in each country presented the consistent findings with previous research findings. In addition, this research determine whether there is a difference the determining factors factor of management benefit and owner interests related to banks profit ability .

## **II. LITERATURE AND HYPOTHESES**

**Profitability :** Banking performance generally become achievements figure of bank operational management bank, as bank's asset and liability management. Bank performance demonstrates the success of discretion implementation in capital management (equity), funds accumulation (funding) and funds usage (assets). They are interrelated each other to achieve optimal level of income with concern to risk level (Riyadi, 2006: 21). In an effort to provide unique figure and more complete of bank financial situation, there are three potential variables to assess financial performance. First, profit (net income) is used as extensiveness in previous studies (Hopkins and Hopkins, 1997). Therefore, net income was considered by authors of this current study as a general measure of banks financial performance. The second benchmark is the return on equity (ROE) that calculated as net income divided by shareholders' equity. This selection is based on Medelson and Earle (1991: 50) that benchmark of financial institution strength is not size /amount of assets, number of branches, or existence, but ROE. The third benchmark financial performance is deposits growth.

**Credit risk :** Credit risk arises as a result of counterparty failure to meet the obligations. Karim et al., (2010) state a bank with a high risk tend near with failure and lower efficiency. Generally, fail banks always have high levels of non-performing loans (NPLs) before bankrupt. There is a negative correlation between bad credit and efficiency performance (Kwan and Eisenbeis, 1994). Shajari and Shajari (2010) in his study at Iranian banking system found NPL has a negative effect on profitability (financial performance).

**Diversified Income (DI) :** Diversification can add value effectively through two mechanisms: (1) developing the economic sphere (economies of scope) between business units within company to produces synergistic benefits, and (2) developing market power which led to greater income (Hitt, et al., 2001). Banking diversification is done in a different dimension. Although there are some studies to analyze loan portfolio diversification, but income source diversification, particularly interest and non-interest income are more interesting academic research. It is generally believed that income sources diversification should stabilize operating income and reduce the total risk (Kick and Bush, 2009).

**Operational Efficiency :** Efficiency is one of performance parameters that theoretically underlie the entire performance of an organization. Resulting maximum output capability with existing input, is an expected performance. According to Neuberger (1998), bank performance can be measured based on productive efficiency (cost and profit) and allocative efficiency (market forces). The statement above is similar with efficient- structure hypothesis-ESH (Neuberger, 1998) who explains that there is a positive relationship between profit concentration through cost reduction and superior management or production technology. Empirical evidence shows that operational efficiency is measured from cost to income ratio (Goddard et al., 2008) or overhead costs to total assets positively affect on profitability.

**Capital Adequacy Ratio (CAR) :** CAR is a measure of equity adequacy to be able to dampen volatility faced by Bank (Kosmiduo, 2008). Basel framework for risk management focuses on capital adequacy, in which the internal risk capital in same way with capital is used to cover the consequences of risk taking (Ojo, 2008). Higher CAR makes bank will need lower external funding, so profitability is higher. Bank with a good CAR face a low risk of bankrupt, thereby reducing the funding cost (Kosmiduo, 2008).

**Credit Growth :** Credit word is derived from credere or creditum. Credere word come from Greek meaning of trust, while creditum come from Latin meaning belief in truth. This word implies that any lending activities must be based on trust (Taswan, 2006: 155). In this case without trust then there will be no credit or otherwise no prospective customers who agreed credit, because bank lending become reserve the economic value for individual customers or business entity. The economic value of acquired customers will be returned to lender (bank) after specific time in accordance with agreement. These mean higher loans to customers can increase income (profitability) of bank as a creditor.

**Market Structure :** Market structure is a measure of market concentration of all banks in industry. Big banks with high market concentration can get a monopoly because it can collude to make a profit from loans and interest payment on deposits is lower. Higher market strength can increase bank-big monopoly profit (Dietrich and Wanzenried (2010). Bank with large market share and good differentiated products can use market forces in determining their products price and gain profit (Berger, 1995). According to study Bourke (1989) and Molyneux and Tomton (1992), bank concentration ratio shows a significant positive relationship to banks profit ability.

**Growth in Gross Domestic Product (GDP Growth) :** GGDP is macroeconomic indicators that most widely used. It is a measure of total economic activity of a country. GDP growth is expected to have a positive relationship to banks ability (Kosmiduo, 2008 and Dietrich and Wanzenried (2010). Other macroeconomic conditions that affect on costs and revenues of banks are inflation (INF). As noted by Staicouras and Wood (2003), inflation could have direct effect (increase in labor costs) and indirect effect (changes in interest rates and asset prices) on bank earnings.

**Inflation :** Inflation is a continuous rise of average prices in economy ((McEachern, 2000: 133). Mishkin (2008: 13) argues the continue price rise (inflation) will affect individuals, businesses (including banking industry) and government. Inflation is considered as important issues that must be overcome and often become main agenda of political and policy makers. Based on theoretical review and previous studies, this research considers several variables that affect on banks profit ability to go public. To give a clearer picture, made the conceptual framework is shown in figure 2.1 below:

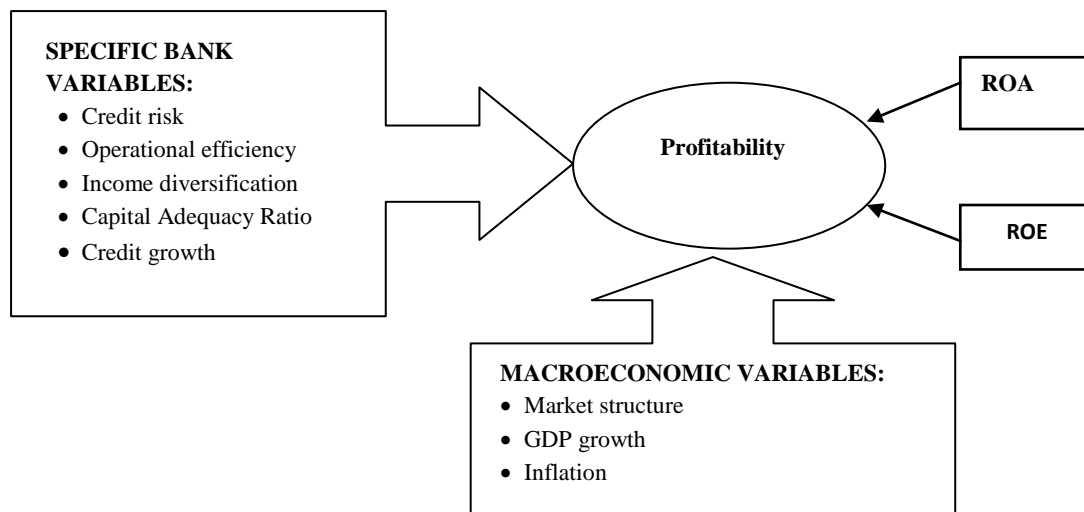


Figure 2.1. Research Conceptual Framework

**Hypothesis**

Based on background and problem formulation, these study hypotheses are formulated as follows:

- a. *Credit risk, income diversification, operational efficiency, capital adequacy ratio (CAR), credit growth, market structure, GDP growth and inflation simultaneously and partially affect significantly on return on assets (ROA).*
- b. *Credit risk, income diversification, operational efficiency, capital adequacy ratio (CAR), credit growth, market structure, GDP growth and inflation simultaneously and partially affect significantly on return on equity (ROE).*

**III. METHODS**

The study uses a quantitative approach. This research was conducted at go public bank or listed in Indonesia Stock Exchange with observation period of 2009-2013. Banks analyzed are 25 banks. It is defined by population criteria. Based on these criteria, from all population of 33 banks go public, only 25 banks were eligible for analysis. Therefore, this study using census (saturated sample). The data is taken from the panel data with auto-merge to data time’s series for five years and a cross section of 25 banks, so that number of data or cases in this study was 125 observations (25 x 5 years). The type of data required in this research is secondary data from (i) bank financial statements that published in Indonesia Stock Exchange, Indonesian Capital Market Directory (ICMD) 2009-2013; and (ii) financial statements of publicly traded banks that published by Bank Indonesia. It consists of Balance Sheet, Income, and Calculation Reports of Capital Adequacy Ratio (CAR).

IV. ANALYSIS AND RESULTS

Hypothesis Testing

**Hypothesis 1** : This hypothesis test is to get empirical evidence about some determinant factors to of profitability that describes the ability of bank management in managing assets separately to get operation profit. Hypothesis 1 states that credit risk, income diversification, operational efficiency, capital adequacy ratio (CAR), credit growth, market structure, GDP growth and inflation simultaneously and partially affect on return on assets (ROA). Test results from SPSS software version 11 can be seen briefly in following table.

**Table 1. F test**  
**ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.016	8	.002	2.009	.051 <sup>a</sup>
	Residual	.118	116	.001		
	Total	.135	124			

a. Predictors: credit risk, income diversification, operational efficiency, capital adequacy ratio (CAR), credit growth, market structure, GDP growth and inflation

b. Dependent Variable: Return on Assets

Table above show Fcount is 2.009 with a significance value of 0.05,  $\alpha = 0.05$  ( $0.000 \leq 0.05$ ). This calculation indicates that first hypothesis (H1) is accepted. It means that Credit risk, income diversification, operational efficiency, capital adequacy ratio (CAR), credit growth, market structure, GDP growth and inflation simultaneously affect on ROA of banks listed in Indonesia Stock Exchange. Table 2

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		Durbin-Watson
					df2	Sig. F Change	
1	.349 <sup>a</sup>	.122	.061	.031948	116	.051	2.045

a. Predictors: credit risk, income diversification, operational efficiency, capital adequacy ratio (CAR), credit growth, market structure, GDP growth and inflation

b. Dependent Variable: Return on Assets

Calculation of multiple linear regressions above show that that coefficient of determination (Rsquare) of research model is 12.2%. This value indicates that there is a weak relationship between Credit risk, income diversification, operational efficiency, capital adequacy ratio (CAR), credit growth, market structure, GDP growth and inflation on return on asset (ROA). It because the ability of eight independent variables to explain dependent variable (ROA) is only 12.2%. While the rest (87.8%) is explained by other variables outside the model.

**Table 3. Recapitulation of Regression Analysis Results**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations	Collinearity Statistics	
		B	Std. Error	Beta				Part	Tolerance
1	(Constant)	.031	.137		.230	.819			
	Credit risk	-.082	.121	-.062	-.681	.497	-.059	.903	1.108
	Income diversification	-.011	.020	-.051	-.556	.579	-.048	.910	1.099
	Operational efficiency	-.030	.029	-.091	-1.027	.307	-.089	.960	1.042
	Capital adequacy ratio	.018	.014	.112	1.269	.207	.110	.964	1.038
	Credit growth	.051	.017	.274	2.963	.004	.258	.888	1.126
	Market structure	1.538	1.356	.113	1.134	.259	.099	.769	1.300
	GDP growth	-1.759	1.181	-.136	-1.489	.139	-.130	.912	1.097
	Inflation	-.059	.159	-.037	-.372	.710	-.032	.752	1.330

a. Dependent Variable: Return on Assets

Table 3 above is the result of partial statistical test of independent variables (Credit risk, income diversification, operational efficiency, capital adequacy ratio (CAR), credit growth, market structure, GDP growth and inflation) on profitability (ROA). Based on results of multiple linear regression calculation, regression equation model is follows:

$$ROA = 0,031 - 0,082RR - 0,011DI_2 - 0,030EFF + 0,018CAR + 0,051GRLOAN + 1,538SP - 1,759GRGDP - 0,059 + \varepsilon$$

The regression model showed that credit risk, income diversification, operational efficiency, GDP growth and inflation have negative effect or the opposite direction on profitability, while the capital adequacy ratio (CAR) and credit growth has a positive effect or same direction on profitability (ROA). The interpretations of regression model are as follows:

Statistical tests result indicates that regression coefficient of credit risk on ROA of -0.082 with a significance value of 0.497 is greater than significance level ( $\alpha$ ) of 5%. This means that credit risk partially has a negative effect on ROA but not significant. These findings do not support the hypothesis that credit risk significantly affect on profitability. Statistical tests result indicates that regression coefficient of income diversification (DI) on ROA is -0.011 with a significance value of 0.579 is greater than significance level ( $\alpha$ ) of 5%. This means that income diversification partially has a negative effect on ROA but not significant. These findings does not support the hypothesis that income diversification significantly affect on profitability. Statistical tests result indicates that regression coefficient of operational efficiency on ROA is -0.030 with a significance value of 0.307 is greater than significance level ( $\alpha$ ) of 5%. This means that operational efficiency partially has a negative effect on ROA but not significant. This finding does not support the hypothesis that operational efficiency significantly affect on profitability. Statistical tests result indicates that regression coefficient of capital adequacy ratio (CAR) on ROA is 0.018 with a significance value of 0.207 is greater than significance level ( $\alpha$ ) of 5%. This means that capital adequacy ratio (CAR) partially has a positive effect on ROA but not significant. These findings do not support the hypothesis that capital adequacy ratio (CAR) significantly affect on profitability. Statistical tests result indicates that regression coefficient of credit growth on ROA is 0.051 with a significance value of 0.004 is smaller than significance level ( $\alpha$ ) of 5%. This means that credit growth (GR LOAN) partially has a positive and significant effect on ROA. These findings support the hypothesis that credit growth (GR LOAN) significantly affect on profitability.

Statistical tests result indicates that regression coefficient of market structure on ROA is 1.538 with a significance value of 0.259 is greater than significance level ( $\alpha$ ) of 5%. This means that market structure partially has a positive effect on ROA but insignificant. This finding does not support the hypothesis that market structure significantly affect on profitability. Statistical tests result indicates that regression coefficient of GDP growth on ROA is -0,759 with a significance value of 0.139 is greater than significance level ( $\alpha$ ) of 5%. This means that GDP growth partially has a negative effect on ROA but insignificant. This finding does not support the hypothesis that GDP growth significantly affect on profitability. Statistical tests result indicates that regression coefficient of inflation on ROA is -0,059 with a significance value of 0.710 are greater than significance level ( $\alpha$ ) of 5%. This means that inflation partially has a negative effect on ROA but insignificant. This finding does not support the hypothesis that inflation significantly affect on profitability. Hypothesis test for eight variables show only one variables has a significant effect on ROA credit growth with positive direction. In this case the higher growth in loans can increase profitability (ROA) go public banks. While the other variables show no significant effect.

**Hypothesis 2 Testing :** Second hypothesis testing is done to get evidence of what is the determinant factor of return on equity (ROE), which describes the ability of bank management to provide benefits to owners in each period of operation. Hypothesis 2 states that Credit risk, income diversification, operational efficiency, capital adequacy ratio (CAR), credit growth, market structure, GDP growth and inflation simultaneously and partially affect the return on equity (ROE). Test results of SPSS software version 11 can be seen briefly in following table.

Table 4. F Test

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.121	8	.015	2.694	.009 <sup>a</sup>
	Residual	.652	116	.006		
	Total	.773	124			

a. Credit risk, income diversification, operational efficiency, capital adequacy ratio (CAR), credit growth, market structure, GDP growth and inflation

b. Dependent Variable: Return on Equity

Table above show that Fcount is 2.694 with a significance value of 0.00 less than significance level ( $\alpha$ ) of 5%. From these calculations it can be concluded that hypothesis (H1) is accepted. It means that overall independent variables as credit risk, income diversification, operational efficiency, capital adequacy ratio



(CAR), credit growth, market structure, GDP growth and inflation simultaneously affect on ROE of banks listed in Indonesia Stock Exchange.

Table. 5

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		Durbin-Watson
					df2	Sig. F Change	
1	.396 <sup>a</sup>	.157	.099	.074971	116	.009	2.584

a. Credit risk, income diversification, operational efficiency, capital adequacy ratio (CAR), credit growth, market structure, GDP growth and inflation

b. Dependent Variable: Return on Equity

Calculation of multiple linear regressions above show that that coefficient of determination (Rsquare) of research model is 15.7%. This value indicates that there is a weak relationship between Credit risk, income diversification, operational efficiency, capital adequacy ratio (CAR), credit growth, market structure, GDP growth and inflation on return on equity (ROE). It because the ability of eight independent variables to explain dependent variable (ROA) is only 15.7%. While the rest (87.8%) is explained by other variables outside the model. Furthermore, partial statistical testing result the effect of credit risk, income diversification, operational efficiency, capital adequacy ratio (CAR), credit growth, market structure, GDP growth and inflation ROE of banks listed on Indonesia Stock Exchange can be seen at table 6 below.

Table 6. Recapitulation Results of Regression Analysis

Coefficients

Model		Unstandardized Coefficients		Standardize Coefficients	t	Sig.	Correlations		Collinearity Statistics	
		B	Std. Error	Beta			Partial	Part	Tolerance	VIF
1	(Constant)	.224	.322		.697	.487				
	Credit risk	-.139	.283	-.044	-.493	.623	-.046	-.042	.903	1.108
	Income diversification	-.012	.046	-.023	-.256	.798	-.024	-.022	.910	1.099
	Operational efficient	-.297	.068	-.378	-4.338	.000	-.374	-.370	.960	1.042
	Capital adequacy ratio	-.038	.033	-.099	-1.144	.255	-.106	-.098	.964	1.038
	Credit growth	.007	.040	.016	.172	.864	.016	.015	.888	1.126
	Market structure	1.499	3.182	.046	.471	.638	.044	.040	.769	1.300
	GDP Growth	.782	2.771	.025	.282	.778	.026	.024	.912	1.097
	Inflation	.105	.374	.028	.280	.780	.026	.024	.752	1.330

a. Dependent Variable: Return on Equity

Based on results of multiple linear regression calculation, regression equation model is follows:

$$ROE = 0,031 - 0,139RR - 0,012DI - 0,297EFF - 0.038CAR + 0.007GRLOAN + 1,499SP + 0,782GRGDP + 0,105 + \epsilon$$

The regression model shows that risk of credit, income diversification, operational efficiency and capital adequacy ratio has a negative effect or the opposite direction on return on equity, while credit growth, GDP growth and inflation have positive effect or same direction on ROE. From these findings can be concluded that specific bank variables as determinants of internal bank is likely to harm the owner interests. The interpretations of regression model are as follows:

Statistical tests result indicates that regression coefficient of credit risk (RR) on ROE of -0.139 with a significance value of 0.23 is greater than significance level ( $\alpha$ ) of 5%. This means that credit risk partially has a negative effect on ROE but insignificant. This finding does not support the hypothesis that credit risk significantly affect on ROE. Statistical tests result indicates that regression coefficient of income diversification on ROE of -0.012 with a significance value of 0.798 is greater than significance level ( $\alpha$ ) of 5%. This means that income diversification partially has a negative effect on ROE but insignificant. These findings does not support the hypothesis that income diversification significantly affect on ROE. Statistical tests result indicates that regression coefficient of operational efficiency on ROE of -0.297 with a significance value of 0.00 is smaller than significance level ( $\alpha$ ) of 5%. This means that income diversification partially has a negative effect on ROE and significant. These findings support the hypothesis that operational efficiency significantly affect on ROE.

Statistical tests result indicates that regression coefficient of capital adequacy ratio on ROE of -0.038 with a significance value of 0.255 is bigger than significance level ( $\alpha$ ) of 5%. This means that capital adequacy ratio partially has a negative effect on ROE but insignificant. These findings does not support the hypothesis that capital adequacy ratio significantly affect on ROE. Statistical tests result indicates that regression coefficient of credit growth (GR LOAN) on ROE of 0.007 with a significance value of 0.864 is greater than significance level ( $\alpha$ ) of 5%. This means that credit growth (GR LOAN) partially has a positive effect on ROE but insignificant. This finding does not support the hypothesis that credit growth (GR LOAN) significantly affect on ROE. Statistical tests result indicates that regression coefficient of market structure on ROE of 1.499 with a significance value of 0.471 is greater than significance level ( $\alpha$ ) of 5%. This means that market structure partially has a positive effect on ROE but insignificant. This finding does not support the hypothesis that market structure significantly affect on ROE. Statistical tests result indicates that regression coefficient of GDP growth on ROE of 0.782 with a significance value of 0.778 is greater than significance level ( $\alpha$ ) of 5%. This means that GDP growth partially has a positive effect on ROE but insignificant. This finding does not support the hypothesis that GDP growth significantly affect on ROE. Statistical tests result indicates that regression coefficient of inflation on ROE of 0.105 with a significance value of 0.780 is greater than significance level ( $\alpha$ ) of 5%. This means that inflation partially has a positive effect on ROE but insignificant. This finding does not support the hypothesis that inflation significantly affect on ROE. This second hypothesis testing explains that from variables only one variable that has a significant effect on ROE variable namely operational efficiency by having a sign of a negative direction. In this case the higher BOPO ratio can increase operational costs to make ROE of go public will decrease, while all other variables show insignificant effect.

## **V. DISCUSSION**

### **Relationship of Credit Risk with Return on Assets (ROA) and Return on Equity (ROE)**

Risk is a situation where there is uncertainty of what will happen to results (Harrington and Niehaus, 2003: 1). Credit risk (non-performing loans-NPL) is a bank loss because of bad credit and interest income that is not acceptable (Mas'ud, 2013: 126). In this case, bank loss the opportunity to earn interest and then can affect on performance and profitability Based on analysis result, credit risk have a negative correlation (opposite direction) on ROA, this means reject the research hypothesis which states that credit risk has significant effect on ROA. This is because the credit risk in with NPL proxy from year to year has decreased compared to previous years. Adversely, earnings growth tends to increase every year. It makes the effect of credit risk is not significant to ROA. These findings do not support the study results of Bush and Kick (2009), Dietrich and Wanzenried (2010), Shajari and Shajari (2010) who found that credit risk has significant negative effect on ROA. This finding is also inconsistent with studies results of Valverde and Fernandez (2006) and Fiordelisi and Molyneux (2010) who found credit risk has a significant and positive effect on ROA.

Analysis results of credit risk on ROE shows the same direction as the credit risk on ROA. In this case the relationship between credit risk and ROE shows a relationship with opposite direction (negative). This means that steeper the credit risk can makes level of benefit for the owner lower. Regression coefficient of credit risk on ROE is greater than the amount of credit risk on ROA. This indicates that higher credit risk as a result bank management failure is likely to cause damage to owner, so that owner profits decreased. This finding contrasts with studies of Fiordelisi and Molyneux (2010) who found higher credit risk increase profits for owners.

### **Relationship of Income Diversification on Return on Assets (ROA) and Return on Equity (ROE)**

Income sources diversification is the result of fee-based services activity to bank customers. In his study Lazo and Wood (2003) found that banks achieve economic coverage through diversification to get high profitability. Based on analysis, income diversification shows a negative and insignificant relationship with ROA. This means that research hypothesis that income diversification affect on ROA is not proven. It is because current income of bank's core business is still dominated by interest earnings. These findings support the study of Goddard et al (2008) that income diversification (non-interest income) has no effect on ROA in credit union in United States. But this research result inconsistent studies results of Fiordelisi and Molyneux (2010), who found a positive and significant effect of income diversification on financial performance (ROA). Analysis results of of income diversification relationship on ROA shows the same direction with ROE. Both show a relationship with opposite direction (negative). This means that higher the income diversification makes profit for the owners will decrease. The amount of income diversification regression coefficient on ROE is almost same ROA. This indicates that impact of income diversification have the same risk for both the management and owners. These finding contrasts with studies Fiordelisi and Molyneux (2010) who found income diversification could increase profits for shareholders (owners).

**Relationship of Operational Efficiency on Return on Assets (ROA) and Return on Equity (ROE)**

Efficiency is a key factor to achieve organizational performance and profit growth. This is demonstrated by ability to create maximum output with existing input. The analysis showed that operation efficiency proxied by BOPO has no significant negative relationship to ROA. These results indicate that ROA is not affected by changes in BOPO value, which means that any increase or decrease in BOPO will not result a decrease or increase in ROA. This finding is consistent with Kusmiduo et al., (2007) who found that operational efficiency does not affect on ROA for the Greek bank subsidiaries with abroad operation. But this research contrast with study of Dietrich and Wanzenried (2010) and Kusmiduo (2009) who found a significant negative relationship between operational efficiency and ROA. While Fiordelisi and Molyneux (2010) find a significant positive relationship between efficiency and profit. Operational efficiency basically is not only beneficial for the management, but also advantageous to owner. Results show that operational efficiency proxied by BOPO has a significant negative correlation to ROE. Increased BOPO will harm the owner because this means ROE lower. It means ROA is affected by BOPO changes variations. Results of this study do not support Fiordelisi and Molyneux (2010) and Dietrich and Wanzenried (2010) who found a significant positive relationship between operational efficiency and ROE (profit owner).

**Relationship of Capital Adequacy Ratio on Return on Assets (ROA) and Return on Equity (ROE) :**

Capital adequacy (equity) aims to dampen shocks faced by banks (Kosmiduo, 2008). Higher capital adequacy ratio can decrease bank need for external funding, so that higher profitability. Results show that capital adequacy ratio proxied by CAR has no significant positive relationship on ROA. These results indicate that magnitude of ROA is not affected by changes in value of capital adequacy ratio (CAR), which means that any increase or decrease in CAR will not result in an increase or decrease in ROA. These findings actually have same same coefficient direction with Demirguc-Kunt and Huizinga (1998), Shu et al. (2005), but all three results of this study do real. The study results do not support Kusmiduo study (2009), Dietrich and Wanzenried (2010) and Bush and Kick (2009) who found a significant negative correlation between CAR and ROA. Test results the relationship between CAR and ROE found a significant negative correlation. This means that additional capital from the owners to increase the CAR will have no effect on ROE. In other words, ROE is not determined by change in CAR variation of go public banks. This finding is contrary to Bush and Kick (2009) which shows the capital adequacy has significant negative effect on profits for the owner (ROE). This study is also inconsistent with Dietrich and Wanzenried study (2010) which found that adequacy of capital has no significant relationship in a negative direction on ROE. This means that capital adequacy is not a determinant of profitability for both the management and owners of bank, because basis consideration to fulfill capital adequacy by owner is to meet regulatory obligations.

**Relationship of Credit growth on Return on Assets (ROA) and Return on Equity (ROE) :**

Giving credit is main income source for banks from mortgage interest payments. The larger loans granted by banks to businesses, then interest income and earned income will increases. Test results indicate that credit growth has significant positive effect on ROA. These results indicate that magnitude of ROA is affected by changes in value of credit growth, which means that any increase in credit growth will lead to an increase ROA. Results show that credit growth has a significant positive relationship on ROA. These results indicate that magnitude of ROA is affected by changes in value of credit growth. Any increase in volume of loans will lead to ROA increase. This study supports Dietrich and Wanzenried (2010) who found the credit growth has significant positive effect on ROA. But this research inconsistent with study of Bush and Kick (2009) and Demirguc-Kunt and Huizinga (1998) for finding a significant negative effect between credit growth and ROA. Relationship of credit growth and ROE credit a direct relationship (positive) but insignificant. This means that higher volume of bank loans did not significantly affect the increase in ROE. In other words, ROE is not determined by changes in credit growth rate variations. This finding is contrary to Bush and Kick study study (2009) which shows the volume of lending has significant negative effect on profits for the owner (ROE).

**Relationship of Market Structure on Return on Assets (ROA) and Return on Equity (ROE) :**

Market structure shows a measure of market concentration of all banks in industry. Banks with high market concentration can get a monopoly because it can collude to make a profit from loans and interest payment on deposits is lower. Stronger market structure for bank-big can make profit monopoly (Dietrich and Wanzenried (2010). Higher market concentration makes bank will have a positive impact on profitability. Results show that market structure has no significant positive relationship on ROA. These results indicate that magnitude of ROA is not affected by changes in market structure. Magnitude of regression coefficient indicates a high level of market structure related to industry competition. Besides increasing market structure, banks have more powerful effect to third party funds (DPK) and/or credit. This study does not support Dietrich and Wanzenried (2010) Bush and Kick (2009) and Kosmiduo (2009).



Dietrich and Wanzenried Study (2010) Bush and Kick (2009) found a significant positive effect of market structure on ROA. Otherwise, Kosmiduo (2009) showed a significant negative effect to support towards the top positive effect between market structure and ROA gives a signal that high market structure reflects the strength of market and bank's ability to increase its business activities. Test results of market structure on ROE shows a positive direction but not significant. These test results are consistent with direction coefficient of market structure on ROA. This means that higher market structure owned banks did not significantly affect to increase ROE. These findings are consistent with Dietrich and Wanzenried (2010), but not inconsistent with Bush and Kick (2009) who found a significant positive relationship between market structure and ROE.

**Relationship of GDP growth on Return on Assets (ROA) and Return on Equity (ROE) :** Growth in gross domestic product (GDP) is a macro-economic indicator in a period that is often used as a measure of country's success of total economic activity. GDP growth positively relates to banks profit ability (Kosmiduo, 2008 and Dietrich and Wanzenried (2010). This is because banking business activities affect the demand and supply of money, following the cost of funds and interest rate loans as a source of profit. Test results shows GDP growth has a negative correlation but insignificant to ROA. This finding does not mean that GDP growth harm banking industry, but rather emphasize that banking industry in Indonesia following the global financial crisis, especially the go public bank generally are not vulnerable to volatility of financial crisis (external environment). Even in post-global financial crisis 2010, go public bank in 2008 reached the highest level of profit growth of 33.9%. These results indicate that magnitude of ROA is not affected by changes in GDP growth variation. This study is consistent with Demirguc-Kunt and Huizinga (1998), but not inconsistent with Dietrich and Wanzenried (2010) and Kosmiduo (2009) who found a significant positive effect of GDP growth on ROA, Testing result of GDP growth on ROE shows the relationship in a positive direction but not significant. These findings are consistent with Wanzenried and Dietrich (2010) who also found the same direction and not significant. Coefficients can be interpreted in a positive direction that GDP growth is more profitable for the owners, because on average equity increased by 23.4% and during the five-year average rate of profit for the owners (ROE) is 11.28%.

**Relationship of Inflation on Return on Assets (ROA) and Return on Equity (ROE) :** Other macroeconomic conditions that affect the costs and revenues of banks are inflation. Inflation can have a direct effect on prices and higher labor costs, while the indirect effect are, among others, changes in interest rates and asset prices that further affect bank earnings. Results show that inflation has a negative correlation but insignificant to ROA. Negative Coefficient direction is evidence empirically that rate of inflation at a certain level can be detrimental. It is indicated by growth of bank profits decline every year. This finding is inconsistent with Demirguc-Kunt and Huizinga (1998), Kosmiduo (2009) and Shajari and Shajari (2010). Demirguc-Kunt and Huizinga (1998) who found no significant positive effect. Kosmiduo (2009) showed a significant negative correlation, while Shajari and Shajari study (2010) found a significant positive relationship. This difference is caused by condition of economy and banking system is different in every country. Testing result the effects of inflation on ROE also shows the relationship in a positive direction but insignificant. These results can be interpreted that at a certain level inflation can profitable for owner. Empirical data shows equity growth of go public bank during the five-year average increase of 23.4%.

## **VI. CONCLUSIONS AND RECOMMENDATIONS**

### **Conclusion**

Based on analysis and discussion of previous hypothesis testing, the conclusions are presented below.

- [1] The implementation of an effective risk management is indicated by relatively low credit risk that could be accepted by banks that positively affect bank's management as well as owner. In this case the credit risk with proper management can improve asset quality and efficiency in other aspects so that profitability is increased.
- [2] Operational efficiency is a key indicator to improve profitability (financial performance) of bank. Higher operating costs could detrimental for bank management, especially related higher costs and competence of human resources. Therefore, it is important for banks to increase services fee management basis as an alternative source of non-interest income.
- [3] Capital adequacy for banks that average above regulation provisions is to force banks to expand credit to achieve greater profit growth. However, condition of real sector are not conducive coupled with provision of legal lending limit, capital adequacy owned only serves as a buffer to face upheavals or comply with regulations.
- [4] Management of bank credit growth became a mainstay to achieve profitability. Banks ability to increase the volume of credit become market power in order to increase the market share of third party funds, market share of credit as well as those fee-based services.

- [5] Credit growth becomes deciding factor that affects the interests of bank's management to achieve profitability. The decisive advantage for the owner is operational efficiency. These findings prove that agency problems are significant for bank's management.
- [6] Strong resilience in banking industry has made bank's business is not easily susceptible to shocks or changes in external environment, changes in market structure, GDP growth and inflation

### Suggestions

- [1] The go public bank who want to achieve growth should increase effective risk management capabilities, not only on credit risk but also the risk of banking business activities such as market risk (interest rate risk and exchange rate risk), liquidity risk and operational risk by considering not only the investors interest to credit risk but also third parties (creditors). It proves that low credit risk of go public bank can successfully achieve growth in market value of assets.
- [2] Diversification is also an important alternative strategy in funding decisions. Therefore, banks should further enhance leadership competencies outside the core business, in this case the activity of fee-based services to improve the diversification of income as well as to reduce profit volatility earned. For third parties (creditors), it becomes quality signal of bank management as basis for consideration to deposit funds in bank.

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