INFLUENCE OF EFFICIENCY RATIO TO STOCK RETURN OF BANKING INDUSTRY
EMPIRICAL STUDY : LISTING BANKS ON INDONESIAN STOCK EXCHANGE PERIOD 2006-2009

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Abstract

Generally, this research aims to analyze the influence of the efficiency ratio to stock returns of banking industry. Independent variables used to represent the efficiency ratio is Cost Efficiency Ratio (CER), Overhead Efficiency, Net Interest Margin (NIM), Net Profit Margin (NPM), and Opportunity Cost Of Capital with Systematic Risk (OCS). The selection of samples used in this research based on purposive sampling, ie banks that listing on Indonesian Stock Exchange 2006-2009. This research using panel data multiple regression analysis with fixed effect model. The results are the variables CER, OHE, NIM, and NPM significant negative influential to stock return. Variable OCS has a positive relationship but has no significant influence to stock returns.

Keyword : Cost Efficiency Ratio, Overhead Efficiency, Net Interest Margin, Net Profit Margin, Opportunity Cost Of Capital with Systematic Risk, stock return.

INTRODUCTION

The needs for funds require for capital investment or working capital, to fulfill the financing needs then financial institutions was established. According to the Decree of the Minister of Finance of Indonesia (No. 792/1990) the financial institution is any entity that has activities in financial of collecting and disbursement of funds to the community especially to finance corporate investment. As one type of financial institutions is a bank, which not only perform the activities to finance company investment, but also has developed into the financing for the consumption sector, distribution, working capital, and other services (Arthesa 2006 : 5).

generally, the definition of bank is a place to save money as well as places to borrow money for people in need. Indonesian banks main function as collector and distributor of public funds and aims to support the implementation of national development in order to improve the distribution of development and its results, economic growth and national stability, towards improving the living standard of the community (www.bi.go.id). The function of this bank is the most memorable and feel the benefits then it's called the intermediaries function. Banking intermediaries function is then pops the question, how far bank perform this intermediaries function.

In 2009 the total assets of commercial banks increased by Rp.224, 3 trillion (9.7%) to Rp.2.534, 1 trillion by the end of december 2009. With the merger of two large banks it is around 79.5% of banking assets are now controlled by 14 major banks. The greater the bank's assets, the greater the general public questions about how banks maintain optimal output for the community, in improving the bank's services, they also increasingly developed by adding branch offices each year.

The increasing number of bank offices to improve services, emerging issues of efficiency (how banks can produce outputs with certain inputs or a minimum amount of) become very important for the function of intermediaries who run by the bank can provide a great impact on economic growth. Efficiency is one of the performance parameters which theoretically is one of the underlying performance of the entire performance of an organization. The ability to produce maximum output with existing input, is a measure of expected performance. At the time of measurement of efficiency done, bank faced with the conditions of how to obtain the optimal level of output with existing levels of inputs, or get the minimum input level with certain level of output. With the separation between the units and price, can be identified the level of technological efficiency, allocative efficiency, and total efficiency. With identification

of input and output allocation, further analyzed can be looked the causes of inefficiencies. Besides the recent financial crisis increasingly aware every company should be further improved its performance and more efficient in managing its financial system so resistant to external and internal shock.

Caesaria (2009), estimation results show that the model based on the results of the regression test, the variable cost efficiency ratio, and the ratio of operating expenses to operating income negatively affect stock returns. While the variable opportunity cost of capital with systematic risk has a positive effect on stock returns.

Murdani (2009), the results of the average efficiency of the go public bank in Indonesia at 88.14%. To see the effect of efficiency bank to stock returns was done by testing the regression statistics. After doing statistical tests, it showed that the bank efficiency are positively correlated to stock returns.

Based on the review above, then this research is considered very important and intended to see the effect of the efficiency ratio of listed banks at Indonesia Stock Exchange (IDX) to the stock return fundamentally the period 2006-2009. This study uses some of the efficiency ratio to be studied as an independent variable which is the ratio of Cost Efficiency Ratio (CER), Overhead Efficiency (OHE), Net Interest Margin (NIM), Net Profit Margin (NPM) and the Opportunity Cost Of Capital With Systematic Risk (OCS). And as the dependent variable is the stock return.

THEORITICAL

Bank

The definition of bank may be enforced in our country was accordance with existing rules are listed in the Law of the Republic of Indonesia Number 10 year 1998. Bank is a business entity that collects funds from the public in the form of savings and distribute them to the public in the form of loans or other forms in order to improve the living standard of the people.

Here is an explanation theories of the efficiency ratio used in this research :

Cost Efficiency Ratio

CER is the comparison between Non-Interest Expenses (PPAP expenses excluded) with Non-Interest Income (NII) plus interest income after deducting interest expanses. With this ratio can be known performance of a bank's efficiency level, the lower the level of CER means more efficient management of the bank in managing its activities (Riyadi 2004 : 138).

Overhead Efficiency

High level of efficiency in bank operations will be determined on how much the bank can reduce its overhead costs and can drive up the amount of its earning assets. With such a high level of competition in the banking industry today, banks generally assumes that the portion of the amount of overhead cost in setting the amount of base lending rate, ranging between 2% - 4% (Ali 2004 : 235-236). Overhead efficiency ratio, known as the Burden ratio calculating a number of non-interest expense, including fees, service charge, securities gains and other income as a fraction of average total assets (Koch & MacDonald 2006 : 74).

Net Interest Margin

NIM is used to measure the ability of bank management in managing its productive assets to generate net interest income. Net interest income derived from interest income minus interest expense, divided by average earning assets. The greater this ratio the increase in interest income on earning assets managed by banks so that the less possibility of a bank in troubled conditions (Circular Letter of Bank Indonesia Number 6/23/DPNP Jakarta, May 31, 2004).

Net Profit Margin

NPM is a ratio used to measure the level of business efficiency, the ability to earn profits and quality of banks. To measure how much contribution of operational revenue in earn banking net profit (Irmayanto et al 2002 : 125).

NPM is the end result of a company's operations for a period and one indicator of an effective way to draw conclusions about the ability of corporate management (Siamat 1995 : 225).

Opportunity Cost Of Capital With Systematic Risk

Opportunity cost of capital is expected rate of return on a portofolio of all the firm’s outstanding securities (Brealey & Myers 2003 : 524).

Calculated Opportunity cost of capital could use a weighted average cost of capital (WACC) is the rate of return that the firm must expect to earn on its average-risk investment in order to provide a fair return all its securities holders. This research use after-tax WACC, (Brealey & Myers 2003 : 333).

Cost of debt (r_D) is the cost incurred by the company regarding its debt to finance its investment. Cost of equity (r_E) can use Return On Equity (ROE) or the Capital Asset Pricing Model (CAPM) approach that is seen r_E as the sum of the risk free rate and deductible of stock index return with fisk free rate multiplied by the bank's systematic risk (beta). Marginal tax rate is the tax to be paid because of the additional income (en.wikipedia.org). Market Value is used because it is considered more relevant for determining the true cost of each funding source. When a company proposed debt financing to the financial institution then market value of company property that determines the cost and loan amount.

Stock Return

Return is the return obtained from investments. Return divided into two, namely (a) return that has happened (actual return) is calculated based on historical data, and (b) the expected return (expected return) will be obtained in the future. Return components include (Jones 2008 : 141) :

1. Capital gain / loss is a gain (loss) for investors obtained from the excess sales price (purchase price) over the purchase price (sale price) both of which occur in the secondary market.
2. Yield (yield) is an income or cash flow received by investors periodically, for example in the form of dividends or interest. Yield expressed as a percentage of capital invested.

Hypothesis

The hypothesis in this study are :

1. H_{01} : CER doesn’t effect on bank stock returns in the IDX.
   H_{a2} : CER effect on bank stock returns at IDX.
2. H_{02} : OHE doesn’t effect on bank stock returns in the IDX.
   H_{a2} : OHE effect on bank stock returns at IDX.
3. H_{03} : NIM doesn’t effect on bank stock returns in the IDX.
   H_{a3} : NIM effect on bank stock returns at IDX.
4. H_{04} : NPM doesn’t affect the bank's stock returns on the IDX.
   H_{a4} : NPM effect on bank stock returns at IDX.
5. H_{05} : OCS doesn’t effect on bank stock returns in the IDX.
   H_{a5} : OCS effect on bank stock returns at IDX.

6. H_{06} : CER, OHE, NIM, NPM and OCS simultaneously not significant effect on bank stock returns at IDX.

   H_{a6} : CER, OHE, NIM, NPM and OCS simultaneously had significant effect on bank stock returns at IDX.

METHODOLOGY

The method used in this research is descriptive method that aims to test the research hypothesis and could explain the characteristics of two or more variables studied (Sekaran 2006 : 158). Type of investigation used was causal studies, aims to determine how much influence the independent variable to the dependent variable.

In this research the methods of descriptive and causal studies are used to test and explain the influence of independent variables to the dependent variable.

The data used are secondary data, ie data of annual financial report for each banking emiten period 2006-2009 that are being sampled to calculate the ratio of CER, OHE, NIM, NPM and OCS. Monthly closing price of shares of each banking emiten period 2006-2009. Data obtained from BEI, Bank Indonesia and the PDPM on IBII.

Research variables and measurements

1. Cost Efficiency Ratio

$$\mathbf{CER} = \frac{\mathbf{NIE\ (ex\ biaya\ PPAP)}}{\mathbf{NII + (II - IE)}} \times \mathbf{100}\%$$

Where :

NIE = Non Interest Expenses

Ex biaya PPAP = excluded cost of penyisihan penghapusan aktiva produktif

NII = Non Interest Income

II = Interest Income

IE = Interest Expenses

2. Overhead Efficiency

$$\mathbf{BURDEN} = \frac{\mathbf{noninterest\ expense - noninterest\ income}}{\mathbf{aTA}}$$

Where :

aTA = average total assets

3. Net Interest Margin

$$\mathbf{NIM} = \frac{\mathbf{II - IE}}{\mathbf{AIEA}} \times \mathbf{100\%}$$

Where :

NIM = Net Interest Margin

II = Interest Income

IE = Interest Expanses

AIEA = Average Interest Earning Assets.

4. Net Profit Margin

$$\mathbf{NPM} = \frac{\mathbf{Net\ income}}{\mathbf{Operating\ income}} \times \mathbf{100\%}$$

5. Opportunity Cost Of Capital With Systematic Risk

$$\mathbf{OCS} = \mathbf{r_D}(\mathbf{1 - T_c})\frac{\mathbf{D}}{\mathbf{V}} + \mathbf{r_E}\frac{\mathbf{E}}{\mathbf{V}}$$

Where :

r_D = cost of debt

r_E = cost of equity

D = debt

E = equity

V = total market value of the firm (D + E)

T_c = corporate marginal tax rate

$$\mathbf{cost\ of\ debt} = \frac{\mathbf{interest\ expense}}{\mathbf{Total\ debt}}$$

Cost of equity (r_E) using Return On Equity (ROE) or pendekatan Capital Asset Pricing Model (CAPM), $\mathbf{r_E = R_f + \beta\ (R_m - R_f)}$

Marginal tax rate, $\mathbf{m} = \Delta\mathbf{t}/\Delta\mathbf{i}$, where : m = marginal tax rate, i = taxable income, t = tax liability,

6. Stock Return

$$\mathbf{Return} = \frac{\mathbf{P_E - P_B}}{\mathbf{P_B}}$$

Where :

P_E = Monthly closing price t, P_B = Monthly closing price t-1

Population and Sample Determination Methods

To determine the sample researcher used purposive sampling that is sampling with certain considerations. Samples criteria required for this research were :

1. Sample is a financial institution banking that listing on the IDX period 2006-2009.
2. Sample was not an IPO in the period 2006-2009.
3. Banks are not delisted from the Stock Exchange during the period 2006-2009.
4. Shares of the issuer bank status is always active during the period 2006-2009.

Table 1 : List of Banks That Meet Criteria for Sampling

No	Kode	Nama Perusahaan	Jenis
1.	BABP	PT. Bank ICB Bumiputera Indonesia Tbk.	BUSN Devisa
2.	BBCA	PT. Bank Central Asia Tbk.	BUSN Devisa
3.	BBNI	PT. Bank Negara Indonesia (Persero) Tbk.	Bank Persero
4.	BBNP	PT. Bank Nusantara Parahyangan Tbk.	BUSN Devisa
5.	BBRI	PT. Bank Rakyat Indonesia (Persero) Tbk.	Bank Persero
6.	BDMN	PT. Bank Danamon Indonesia Tbk.	BUSN Devisa
7.	BEKS	PT. Bank Eksekutif Internasional Tbk.	BUSN Non Devisa
8.	BKSW	PT. Bank Kesawan Tbk	BUSN Devisa
9.	BMRI	PT. Bank Mandiri (Persero) Tbk	Bank Persero
10.	BNGA	PT. Bank CIMB Niaga Tbk.	BUSN Devisa
11.	BNII	PT. Bank Internasional Indonesia Tbk.	BUSN Devisa
12.	BNLI	PT. Bank Permata Tbk.	BUSN Devisa
13.	BSWD	PT. Bank Swadesi Tbk.	BUSN Devisa
14.	BVIC	PT. Bank Victoria International Tbk.	BUSN Non Devisa
15.	INPC	PT. Bank Artha Graha Internasional Tbk	BUSN Devisa
16.	MAYA	PT. Bank Mayapada Tbk.	BUSN Devisa
17.	MEGA	PT. Bank Mega Tbk.	BUSN Devisa
18.	NISP	PT. Bank OCBC NISP Tbk.	BUSN Devisa
19.	PNBN	PT. Bank Pan Indonesia Tbk.	BUSN Devisa

Source : researcher edit

Analytical Method

Analytical method used to prove the influence of bank efficiency variables in this research is multiple regression analysis with panel data. To accelerate and ensure the results of processing data, then used a computer program Eviews version 7.0 :

Regression equation in this study is formulated as follows :

$$\mathbf{R_{it}} = \mathbf{c_{it}} + \boldsymbol{\alpha_1}(\mathbf{CER})_{\mathbf{it}} + \boldsymbol{\alpha_2}(\mathbf{BURDEN})_{\mathbf{it}} + \boldsymbol{\alpha_3}(\mathbf{NIM})_{\mathbf{it}} + \boldsymbol{\alpha_4}(\mathbf{NPM})_{\mathbf{it}} + \boldsymbol{\alpha_5}(\mathbf{OCS})_{\mathbf{it}} + \mathbf{e_{it}}$$

Where :

R_{it} = stock return perusahaan ke-I pada periode ke-t

e_{it} = error term

c_{it} = constanta

α_1 s/d α_5 = regression coefficient

CER_{it} = CER bank i on period t

$BURDEN_{it}$ = BURDEN bank i on period t

NIM_{it} = NIM bank ke-i pada period ke-t

NPM_{it} = NPM bank ke-i pada period ke-t

OCS_{it} = OCS bank ke-i pada period ke-t

Processing panel data is done by of three approaches Baltagi (Yasarani 2009 : 44) : (1) Pooled Least Square, the simplest approach in the processing of panel data is to use Pooled Least Square (PLS) are commonly applied in data that shaped pool. This approach does not consider individual differences and time, assumed constant behavior of data between companies in different periods. (2) Fixed Effect Model ; The simplest way of knowing the difference is with the assumption that the intercept differs between individuals while the slope is constant between individuals. Fixed effect using dummy variables, so called Least Square Dummy Variable Model or also called covariance model. Generalization in general by including dummy variables to allow the intercept parameter value differences and the different coefficients both across cross section units and time invariant. (3) Random Effects Model; Just as the fixed effect but to overcome the reduced efficiency of parameters, random effects model using parameters that differ between regions or between the time that is inserted into the error. Because of this, random effects model is often called the error component model. In this model the random disturbances are assumed for the entire population.

Choosing model from statistic test are (Widarjono 2009 : 229-241):

1. Chow Test

   Test is conducted to choose between methods Pooled Least Square or Fixed Effects. This test is often referred to as the F- statistics test.

   H_0 : Pooled Least Square Model (Restricted)

   H_1 : Fixed Effect Model (Unrestricted)

   rejection role of the null hypothesis is to use F-statistics as defined by Chow :

$$\mathbf{CHOW} = \frac{(\mathbf{RRSS} - \mathbf{URSS})/(\mathbf{m})}{\mathbf{URSS}/(\mathbf{n} - \mathbf{k})}$$

   Where :

   RRSS = Restricted Residual Sum Square

URSS = Unrestricted Residual Sum Square

n = Observation

m = restriction number or restriction in model without DV

k = parameter number in fixed effect model

This test follows the distribution of F-statistic that is $F_{m,\ n-k}$, if the value of CHOW Statistics (F-Stat) test result is greater than the F table, then the null hypothesis is rejected so that the model we use is the fixed effect model, and vice versa.

2. Haussman Test

Test conducted to choose between the model of the Random Effects or Fixed Effects. The test is performed with the hypothesis:

H_0 : Model Random Effect

H_1 : Model Fixed Effect

The equation is :

$$\mathbf{H} = (\boldsymbol{\beta}\mathbf{FE} - \boldsymbol{\beta}\mathbf{RE})^{\mathbf{1}} \left(\sum \mathbf{FE} - \sum \mathbf{RE}\right)^{-\mathbf{1}} (\boldsymbol{\beta}\mathbf{FE} - \boldsymbol{\beta}\mathbf{RE})^{\mathbf{1}}$$

Where :

βFE = coefficient matrix estimation of fixed effect model

βRE = coefficient matrix estimation of random effects model

ΣFE = coefficient covariance matrix of fixed effect model

ΣRE = coefficient covariance matrix of random effects models

As a rejection role of the null hypothesis, Hausman statistics test follows a chi-square statistic distribution with degree of freedom as k, where k is the number of independent variables. If the Hausman probability value < α then H_0 is rejected so that the used model is fixed effects, and vice versa.

Classical Assumption Test

Classical assumption test in thi multiple regression are :

1. Multicollinearity Test

Multicollinearity is the condition of the existence of a linear relationship between the independent variables (Winarno 2009 : 5.1). A good regression model

should not had correlation between the independent variables. Multicollinearity in a model can be seen if the correlation between two variables have a value above 0.8 (rule of thumb) (Gujarati 2004 : 359).

2. Heteroscedasticity Test

heteroscedasticity test to verify whether the regression occurred inequality variance of an observation residuals to other observations. With Eviews program white test used to detect heteroscedasticity using squared residuals as the dependent variable and independent variables consisted of existing independent variables, plus the square of independent variables, coupled with the multiplication of independent variables (Winarno 2009 : 5.8).

3. Autocorrelation Test

Autocorrelation test is intended to determine the correlation between observations of one another with a different observation time (Widarjono 2009 : 141). To test whether there is autocorrelation used the Durbin Watson test (DW) and Breusch-Godfrey test. Basis for decision making for Breusch-Godfrey test is to notice the Obs*R-squared and probability values, with the hypothesis as follows (Winarno 2009 : 5.28) :

H_0 : When the probability value > α = 5%, meaning there is no autocorrelation
H_1 : When the probability value $\leq \alpha$ = 5%, meaning autocorrelation occur

Hypothesis Test

F Test

F test intended to see the overall ability of the independent variable, to be able or unable to explain the behavior or the diversity of the dependent variable.
The hypothesis formulated as follows :

$H_0 : \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6 = 0$ ➔ no influence of independent variables on the dependent variable simultaneously.
$H_a : \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6 \neq 0$ ➔ there influence of independent variables on the dependent variable simultaneously.

With a significance level of 5% and the degree k-1 numerator, denominator degree nk. Decision-making of hypothesis with the following criteria :

- When $F_{test} > F_{table}$ then H_0 is rejected
- When $F_{test} < F_{table}$ then H_0 is accepted

When using the p-value, H_0 is rejected if the p-value < α

t Test

Partial or individual significance test or t test is to test whether an independent variable influence or not on the dependent variable. Influential independent variables not significant if the coefficient value equal to zero, while the independent variable will have effect if the value of the coefficient is not equal to zero. The hypotesis are :

$H_{0i} : \beta_i = 0$ ➔ not influential significant
$H_{ai} : \beta_i \neq 0$ ➔ influential significant

Decision-making on the hypothesis by compare statistical test and tables are :

- Reject H_0 if $t < -t_{\alpha/2}$ or if $t > t_{\alpha/2}$
- Accept H_0 if $-t_{\alpha/2} < t_{arithmetic} < t_{\alpha/2}$

When using p-value, reject H_0 if p-value < α

Coefficient Determination (R^2)

The coefficient determination indicates that a proportion of the variance can be explained by the regression equation of the total variance.

According to Lint (in Suharyadi & Purwanto, 2004), the coefficient determination greater than 0,5 indicates the independent variables could explain the variable bound by either or powerful, equal to 0,5 is said moderate and less than 0,5 are relatively less. If the coefficient determination gain less than 0,5 there are several possible causes one of them is the wrong model specification that is less precise selection of variables or unaccurate measurements.

RESULTS AND DISCUSSION

Analysis Unit Description

Descriptive statistics are used to illustrate the frequency distribution of data and some basic count statistics, such as mean, median, maximum, minimim, and standard deviation (Winarno 2009 : 3.6). The results of descriptive statistics shown on Table 2 :

Table 2 : Descriptive Statistic of Stock Return, CER, OHE, NIM, NPM, OCS

	RETURN?	CER?	OHE?	NIM?	NPM?	OCS?
Mean	0.025001	0.643567	0.123625	0.056425	0.090453	0.054204
Median	0.017813	0.616928	0.110257	0.054250	0.093350	0.054278
Maximum	0.275606	1.547692	0.287822	0.111600	0.299300	0.079566
Minimum	-0.064504	0.392064	-0.056260	0.023800	-0.725500	0.022123
Std. Dev.	0.048198	0.190443	0.062749	0.018128	0.124587	0.012070
Observations	76	76	76	76	76	76
Cross sections	19	19	19	19	19	19

Source : Output with Eviews 7.1

Based on Table 2 for stock return that has the highest value of 0.275606 (INPC/2007) and the lowest value of -0.064504 (BBNI/2008), average stock returns (mean) of 0.025001, with standard deviation value of 0.048198. Bank that have the highest CER value of 1.547692 (BEKS/2006) while the lowest value of 0.392064 (BSWD/2009), the average CER (mean) of 0.643567, with standard deviation value of 0.190443. The higher the standard deviation of the data become more varied. OHE highest value of 0.287822 (MAYA/2009) while the lowest value -0.056260 (BVIC/2009), OHE average (mean) of 0.123625, with standard deviation value of 0.062749. NIM highest value of 0.111600 (BBRI/2006) while the lowest value of 0.023800 (BVIC/2009), the average NIM (mean) of 0.056425, with standard deviation value of 0.018128. NPM highest value of 0.299300 (BBCA/2008) while the lowest value -0.725500 (BEKS/2009), NPM average (mean) of 0.090453, with standard deviation value of 0.124587. OCS highest value of 0.079566 (BDMN/2007) while the lowest value 0.022123 (BABP/2008), OCS average (mean) of 0.054204, with standard deviation value of 0.012070.

Research Result And Discussion

Bank Ranking Based On Efficiency Ratio

After calculating the efficiency ratio of the sample banks that will be investigated, then the following is a ranking of 3 (three) top banks are efficient and last rank is less efficient banks per year :

1. In 2006, the efficient bank is BNII, MAYA, and BDMN while the less efficient is BBNI.
2. In 2007, the efficient bank is BDMN, BKSW, and MEGA while the less efficient is BEKS.
3. In 2008, the efficient bank is BDMN, BSWD, and MEGA while the less efficient is BABP.

4. In 2009, the efficient bank is BDMN, BSWD, MEGA while the less efficient is BABP.

Choosing Panel Data Model

1. Chow Test

Chow test can be seen on table 3 :

Table 3 : Chow Test

	Chow
RSS	0.155492
URSS	0.129151
m	18
n – k	58
NILAI F-Stat	0.770496895
F Tabel	1.84

Source : researcher edit

Calculation results in table 3 F-Stat value smaller than the F-table, (0.77 <1.84). The conclusion was that this study used PLS model.

In determining whether a regression model can be used, it is necessary to look at three common criteria (rule of thumb) used is (Gujarati 2004) :

1. Economic criteria (the sign and magnitude), which saw the sign and match with the theoretical value of the coefficient estimators and reason.
2. Statistical criteria (t test, F test, and R2)
3. Econometric criteria, it's concerning violations of classical assumptions.

From the test results chow, have shown that the model used is the PLS model, but the overall results of statistical tests was the use of fixed effect models provide significantly better results than the PLS model in this research. According with the rule of thumb, then this research uses fixed effect model.

Other reason for use fixed effect model in this study, that fixed effect model can be known different constanta values for each company. Differences in the constanta describing the characteristics are different for each company.

Classical Assumption Test

a) Multicollinearity Test

Results from the testing obtained matrix table 4, can be seen that between the independent variables doesn't have a coefficient correlation value above 0.8. Therefore concluded that there is no multicollinearity in this research.

Table 4 : Multicollinearity Test Result

	CER?	OHE?	NIM?	NPM?	OCS?
CER	1.000000	0.431224	-0.218577	-0.703555	-0.245560
OHE	0.431224	1.000000	0.597774	-0.426294	-0.084237
OHE	-0.218577	0.597774	1.000000	0.094275	0.139685
NIM	-0.703555	-0.426294	0.094275	1.000000	0.177749
NPM	-0.245560	-0.084237	0.139685	0.177749	1.000000
OCS	1.000000	0.431224	-0.218577	-0.703555	-0.245560

Source : Output with Eviews 7.1

b) Heteroscedasticity Test

In white test, values should be considered is the Obs*R-squared and probability. Hypothesis of heteroscedasticity :

H_0: no heteroscedasticity

H_1: there is heteroscedasticity

And criteria for decision-making :

1. If the probability of Obs*R-squared > 5%, then H_0 is accepted.
2. if the probability of Obs*R-squared < 5%, then H_0 is rejected.

Heteroscedasticity test results can be seen on table 5 :

Table 5 : Heteroscedasticity Test Result

Heteroskedasticity Test: White

F-statistic	0.856971	Prob. F(5,70)	0.5145
Obs*R-squared	4.383787	Prob. Chi-Square(5)	0.4956
Scaled explained SS	19.67124	Prob. Chi-Square(5)	0.0014

Source : Output with Eviews 7.1

In Table 5 Obs*R-squared value is 4,383787 and the probability is 0.4956 > 0.05, H_0 is accepted and concluded there was no heteroscedasticity in this research.

c) Autocorrelation Test

Identification of the autocorrelation are by looking at the value of the Durbin-Watson (DWStat) and then compare it with the Durbin-Watson table. From the results on regression of fixed effect model on Table 7 results DWstat value of 2,978950. After comparing the value of DWstat with DW table, it turns out the result that $4 - dU \leq d \leq 4 - dL$ thats in the area of no conclusion.

Because can not be decided, then proceed with the Breusch-Godfrey test with results in table 6 :

Tabel 6 : Breusch-Godfrey Test Result

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.797691	Prob. F(2,68)	0.1735
Obs*R-squared	3.816573	Prob. Chi-Square(2)	0.1483

Source : Output with Eviews 7.1

Result from table 6 that prob. Chi-Square is 0.1483 > 0,05. Then H_0 is accepted, so concluded there is no autocorrelation

Multiple Regression Analysis

Fixed Effect Model

fixed effect model regression can be seen on tabel 7 :

Table 7 : Fixed Effect Model Regression

Dependent Variabel: RETURN?
Method: Pooled EGLS (Cross-section weights)
Sample: 2006 2009
Total pool (balanced) observations: 76
White period standard errors & covariance (no d.f. correction)

Variabel	Coefficient	Std. Error	t-Statistic	Prob.
C	0.193034	0.040536	4.762029	0.0000
CER?	-0.085114	0.034614	-2.458920	0.0173
BURDEN?	-0.340339	0.081148	-4.194066	0.0001
NIM?	-1.030982	0.447742	-2.302624	0.0253
NPM?	-0.115235	0.013385	-8.609417	0.0000
OCS?	-0.047714	0.350609	-0.136089	0.8923
Fixed Effects (Cross)				

Effects Specification

Cross-section fixed (dummy variabels)

R-squared	0.497757	Mean dependent var	0.037191
Adjusted R-squared	0.275611	S.D. dependent var	0.060601
S.E. of regression	0.049836	Sum squared resid	0.129151
F-statistic	2.240675	Durbin-Watson stat	2.978950
Prob(F-statistic)	0.008182		0.008182

Source : output with Eviews 7

Here is a regression equation from the results in table 7 :

$$\mathbf{RETURN} = \mathbf{0.193034} - \mathbf{0.085114} * \mathbf{CER} - \mathbf{0.340339} * \mathbf{BURDEN} + \mathbf{1.030982} * \mathbf{NIM} - \mathbf{0.115235} * \mathbf{NPM} - \mathbf{0.047714} * \mathbf{OCS}$$

Hypothesis Testing

After performing regression, hypothesis testing is performed to see the influence of independent variables to dependent variable simultaneously and partial, and see the percentage of the independent variables could explain the dependent variable.

a. t – Test

1. CER influence on the stock return.

   CER variable has a value prob t-stat of 0.0173, this result shows that the prob t-stat value < 0.05 means H_0 rejected or CER variables significantly influence stock returns.

   The value of the coefficient on the variable CER -0.085114 explained that every increase of 1% CER, then the stock returns show a decrease of 0.085114, assuming other variables held constant. Because the value of the coefficient a negative number means indicates that the CER relation with the stock return is negative or inverted.

2. OHE influence on stock return

   OHE variable has a value prob t-stat of 0.0001, this result shows that the prob t-stat value < 0.05 means the H_0 is rejected or variable OHE significantly influence stock returns.

   The value of the coefficient on the variable OHE -0.340339 explained that every increase of 1% OHE, then the stock returns show a decrease of 0.340339, assuming other variables held constant. Because the value of the coefficient a negative number means indicates that the OHE relation with the stock return is negative or inverted.

3. NIM Influence on the stock return

   Variable NIM has a prob value t-stat of 0.0253, this result shows that the prob t-stat value < 0.05 means H_0 rejected or NIM variables significantly influence stock returns.

   The value of the coefficient on the variable NIM -1.030982 explained that every increase of 1% NIM, then stock returns show a decrease of 1.030982, assuming other variables held constant. Because the value of the coefficient a negative

number means indicates that the NIM relation with stock return is negative or inverted.

4. NPM Influence on the stock return

   Variable NPM has a prob value t-stat of 0.0000, this result shows that the prob t-stat value < 0.05 that mean H_0 rejected or NPM variables significantly influence stock returns.

   The value of the coefficient on the variable NPM -0.115235 explained that every increase of 1% NPM, then the stock returns show a decrease of 0.115235, assuming other variables held constant. Because the value of the coefficient a negative number means indicates that the NPM relation with stock return is negative or inverted.

5. OCS influence on stock return

   Variable OCS has a prob value t-stat of 0.8923, this result shows that the prob t-stat > 0.05 which means that H_0 is accepted or OCS variables not significantly influence stock returns.

   The value of the coefficient on the variable OCS -0.047714 explained that every increase of 1%, then the stock returns show an decrease of 0.047714, assuming other variables held constant. While the value of the coefficient a negative number means indicates that the relation of OCS to the stock return is negative or inverted.

b. F Test

Based on results of fixed effect model regression in table 7 the results of the F calculated is 2.240675 with significance level of 0,008182. because 0,008182 < 0.05 then shows that the value p-value> α, which means H_0 accepted, so it was concluded that the variable CER, OHE, NIM, NPM and OCS has no effect on stock returns simultaneously.

c. Coefficient of Determination (R2)

The coefficient of determination is used to measure how far the ability of a model explaining the variation in the dependent variable. Results from table 7 obtained R^2 value is 0,497757, thus indicating this value showed that CER, OHE,

NIM, NPM and OCS can explain the variation on stock returns of 49,77%, while the remaining 50,23% is explained by other variables that not included in this research.

Discussion of Research Results

CER influence on Stock Return

CER variable in this study had a negative and significant relationship. These results are consistent with research conducted by Caesaria (2009) in which the CER has a negative relationship to stock returns.

Variable CER assess the operational efficiency of a bank of the costs stemming from non-interest income and interest income, which issued to banking operations. In theory the higher the CER means that the bank management tends to produce a relatively small profit as a result of unefficient operations or operational costs are relatively large, this condition lowers the bank's reputation and ultimately will impact the company's stock price and the next is the decline in stock return .

OHE influence on Stock Return

Results for OHE variables have a negative relationship and significant effect on stock returns. Because while non-interest expense and non-interest income compared with asset management, when the results of OHE value are higher then bank performance are poor (Koch & McDonald, 2000), the high value of OHE lowering the bank's reputation in the eyes of investors. Then affect on stock returns, because the stock is removed or sold.

NIM influence on Stock Return

Results for variables NIM has a negative relation and significant influence on stock returns.

Because it produces a negative effect, although the possibility of an increase in NIM indirectly also increase profits and provide a great return expectations for investors, but the global crisis in 2008 gave a negative influence on stock returns, because operating costs also swell.

With an average ratio of the banking NIM during the period 2006-2009 amounting to 5.64%, the magnitude of the ratio meets the PK1 (Composite Rating 1) ratio of NIM ($\geq$ 3%), so banks tend to choose the fulfillment of banks TKS (Soundness) without

considering lending rate and ultimately affect the growth of real sector less aroused so the NIM increase negatively affect the stock return.

NPM influence on Stock Return

Results for NPM variables have a negative relation and significantly effect on stock returns.

Because of negative effect probability the management was able to increase the value of NPM, but when connected with the ever-increasing costs, will not be a choice in taking the decision to invest, and also when profits are allocated to the amount of loans and investments that not going well, so impact to stock returns decline.

OCS influence on Stock Return

Results for OCS variables have a positive relation and no significant influence to stock returns. This positive relation supports the results obtained by previous researchers Caesaria (2009) who obtained the results of a positive relation with stock returns.

In this study the OCS is calculated by using the WACC formula. In theory the WACC is used as an investor assessment of both bondholder and shareholder to get a minimum return of the amount of the investment, if the higher the WACC then the company can meet the minimum expected return of investors. Negative insignificant relationship because of market negative correction on banking securities, perhaps of several bank issued stock split, right issue, Employee Stock Option Plan (ESOP) / Management Stock Option Plan (MSOP), then influence on leverage decline that continued to stock return decreasing. The condition of the global crisis in 2008, the tendency of shareholders to release shares and then company rarely use equity as a source of capital but would prefer internal funding (retained earnings) when the external funds available then the debt is preferred, because the cost of debt information are cheaper than equity, resulting in a decline in stock prices that impact the decline in stock returns.

CONCLUSIONS AND SUGGESTIONS

Conclusion

This study aims to look at the influence of the ratio of the efficiency of the banking industry stock returns, efficiency ratio studied were CER, OHE, NIM, NPM,

and OCS. Based on the results of research and discussion, it can be concluded as follows :

1. Variable CER, OHE, NIM, NPM has negative and significant influence to stock returns. While the OCS variables have a positive and unsignificant influence to stock return.
2. Simultaneously efficiency ratio used is CER, OHE, NIM, NPM and OCS effect on stock returns of listed banks in BEI period 2006-2009 for 49.05%, while the remaining 50.59% is explained by other variables not included in the study this.
3. Banking income in Indonesia still refers to interest income as the biggest revenue, whereas fee-based income can be maximized so that the conventional banks in Indonesia will developed rapidly.

Suggestion

Based on the conclusions from the results of the study, the researchers can suggest the following :

a. For the banking authorities

    1. For banking companies that have listed on the Stock Exchange, should further improve the efficiency of the bank management, so in addition to improving corporate profits, and also shares traded could be an option for investors to invest on the basis consideration of the efficiency ratio in this research.
    2. Banking parties would be able to maximize fee-based income so firm's profits can be maximized but still consider the cost efficiency of the company.

b. For further research.

    1. This study uses only the ratio of banking efficiency, if there is a desire to continue this research are suggested to use other efficiency ratios, and use the frontier methods to obtain more significant results.
    2. Classical assumption test first before proceeding to regression stage.
    3. Extended research period so that it can get better results.
    4. This research did not consider the policy of a stock split or reverse stock during the research period, so that further tests need to be normalized.

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