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The Effect of Loan Market Concentration on Banking Rentability: A Study of Indonesian Commercial Banking, Dynamics Panel Data Regression Approach

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ABSTRACT

The aim of this research is to find out the speed of adjustment and impact of market concentration on rentability (return on equity [ROE]). From 145 banks, there were 97 banks chosen in a period of 2001-2012 as sampling of research by using purposive sampling. This research uses data panel, therefore dynamics panel data regression is used in this research and using generalized method of moments Arellano Bonds as research tools. This research shows that speed of adjustment close to zero point which means the market condition is more competitive; and the variables which affect ROE are ROE_{lag1}, market concentration, bank size, non-performing loan, and overhead to revenue ratio meanwhile the other variables do not impact ROE.

Keywords: Market Structure, Market Share, Return on Equity, Banking Industry, Performance

JEL Classifications: C23, G21, L11

1. INTRODUCTION

According to the data of Central Bank of Indonesia (BI), it can be seen that the trend of assets, loans, deposits, and the number of bank offices moved in the same direction but the number of banks operated have precisely moved downwards. The Indonesian banking averagely arises about 14.03% in assets market, meanwhile in the loan market is 21.71%, and the deposits market is about 13.66%. The growth of market is followed by the development of bank office from 6.765 unit (2001) to 16.625 unit (2012). Ironically, the number of bank which operated has decreased from 145 banks (2001) to 120 banks (2012). This indicates the competition of banking market is strictly tight.

The data of BI presents that total assets, total deposits, and total credits market fluctuated but mostly increased from 2001 to 2012. These increments were expected to occur from the big banks which authorized Indonesian banking industry because data of BI also shows that the total banks decreased and followed by the increment of total bank offices in the same period. This fact indicates a strict competition of market structure in Indonesian banking industry because there were some banks which couldn't maintain their performances and it makes total banks decreased. Meanwhile the banks which can maintain their performances open new branches which make total bank offices decreased from 2001 to 2012. This phenomenon indicates there is oligopoly or monopoly market structure in Indonesian banking industry and influences their performances.

From the market banking condition which is competitive, it is globally seen that interest rate spread (IRS) and return on assets (ROA) also increases, the efficiency of operational bank increases indicated by the decrease of cost income ratio. This phenomenon is quite interesting and occurring the question. Why did in the strict middle of competition between banks occur the increasing of efficiency meanwhile IRS is still high so that it impacts to make ROA higher. What is the pattern of the relationship of market structure and firm value?

That phenomenon is the fact. Briefly, it is noted during the period of 2001-2012, the banking market developed rapidly followed by the increase of spread, efficiency of operation, and ROA.

The question occurring is the positive influence on return on equity (*ROE*).

The relationship between market structure and performance has been widely studied by several researches, the most used variables are concentration ratio and individual market share as the proxy of market structure variables. In Germany, Yu and Neus (2005) used concentration ratio as the proxy of market structure to determine its influence on profitability. The research found that market concentration has a significant negative relationship with profitability. However, Wong et al. (2007) found the different result in their research which stated concentration ratio is positively insignificant with profitability. Meanwhile, Jian and Jing (2008) found a significant positive effect of individual market share on profitability in their joint-stock Chinese commercial banking.

This gap of research occurs because of the differences of sampling and dependent or independent variables in their researches. Therefore, the objective of this study is to find out the speed of adjustment and the relationship between market structure on performance in Indonesian commercial banking industry in a period of 2001-2012. This study hopefully will deliver a better result to find out the effect of market competition on performance in Indonesian banking industry.

2. LITERATURE REVIEW

In some literatures, the market structure variables which used as the determinant of performance is concentration ratio and individual market structure. Performance is proxied by profitability such as ROA, *ROE*, or return on sales. In addition, banking characteristics which expected to influence performance are also included in the model such us capital adequacy ratio, loan to deposit rate, bank size, economic growth, etc.

Yu and Neus (2005) have investigated the market structure, scale efficiency, and risk on profitability in Germany banking industry. They found out that market structure has a significant role in Germany banking profitability and a great scale efficiency will increase profitability. They also stated that portofolio risk also is a key in determining profitability.

Bektas (2006) studied the market structure and profitability in liberalizing the deposits market in North Cyprus. He found out that profitability is not the result of collusive behavior or efficient operation of depository institutions and there was an insignificant coefficient of efficiency.

Wong et al. (2007) also investigated the determinant of profitability in Hong Kong banking industry. They found out that market structure and market concentration are insignificant with profitability meanwhile the cost efficiency is positively correlated with profitability and negatively correlated with loan price.

Jian and Jing (2008) also did an empirical research of the relationship among market structure, efficiency, and performance in Chinese banking industry. They stated the effect of market

share, concentration, and bank scale is inconsistent in joint-stock commercial bank and stated-owned banks.

3. RESEARCH METHOD, DATA AND METHODOLOGY

3.1. Sample Selection and Data Collection

This research is an empirical study at Indonesian commercial banking listed in BI in a period of 2001-2012. The data used in this research is secondary data panel (time series and cross sectional) in the form of financial statements which includes all Indonesian commercial bank which listed in BI in the period of 2001-2012.

The data are taken from Indonesian Banking Directory from 2003 to 2013. The chosen sampling is 97 from 120 population of Indonesian commercial banking. This research loan market channels. The dependent variable in this research is profitability which can be represented by *ROE*. The independent variable in this research is market structure represented by market concentration ratio (Herfindahl-Hirschman index [*HHI*]) and market share ratio (MS). The formula is stated as follows:

$$HHI = \sum_{i=1}^{n}(S_i)^2$$

For this equation, *n* represents the total number of enterprises, S_i represents the scale of enterprise *i* and *X* represents the total scale of markets, so S_i/S_t represents the market share of enterprise *i*. In general, the *HHI* is always multiplied by 10,000, but in the regression model we don't. Table 1 shows the classification of market structure type by using *HHI*.

The second market structure variable is individual market share. The operational definition of market share is a value percentage of selling or purchases specific goods or services controlled by business to the relevant market in a particular calendar year. The other variables with be explained in the operational definition of variable (Table 2).

3.2. Hypothesis

Based on the phenomenon, theories, and relevant journals then it can be arranged and the research hypothesis briefly has been arranged in Table 3.

The basic idea of independent variables (determinants) *ROE* as the performance of value equity bank tends to the mindset of the

Table 1: Classification of market structure by using *HHI*

Type	Range of *HHI*
Oligopoly type *HHI*≥1000	
High oligopoly I	*HHI*≥3000
High oligopoly II	3000>*HHI*≥1800
Low oligopoly I	1800>*HHI*≥1400
Low oligopoly II	1400>*HHI*≥1000
Competition type *HHI*<1000	
Competition I	1000>*HHI*≥500
Competition II	500>*HHI*

Source: Lü and Liu (2012)

Table 2: Determinants of banking profitability, definitions, notation, and expectations impact

Variables			Definition/formula	Notation	Expectation impact
Dependent variable	*Rentability*$_{(t)}$	*Net profit*$_{i(t)}$	Profit for equity; profit after tax/ total equity (%)	*ROE*$_{it}$	
Determinants of banking profitability					
Banking perform	*Rentability*$_{(t-1)}$	*Net profit*$_{i(t-1)}$	Profit after tax/total equity (%)$_{lag-1}$	*ROE*$_{it.Lag1}$	+
Characteristics/structure	ALMA/MS/HHI	*Loan market Shareit*	Loan bank/total loan market (%)	*LoanMS*	+
		Loan marke$_t$ *concentration*$_t$	Herfindahl-Hirschman index of loan market (point)	*LoanHHI*	+
		Liquidity$_{it}$	Loan to deposit ratio (%)	*LDR*	+
		Asset quality$_{it}$	Non-performing loan (%)	*NPLG*	−
		Equity-capital$_{it}$	Total equity/total asset ratio (%)	*TETA*	−
		Revenue-diversification$_{it}$	Fee based income/revenue (%)	*FBI/Rev*	+
		Overhead$_{it}$	Overhead cost/revenue (%)	*OC/REV*	-

Table 3: Summary of the hypothesis research

Hypothesis	Information	References
H1	*ROE*$_{i(t-1)}$ has positive effect on *ROE*$_{i(t)}$ bank	Athanasoglou (2005)
H2	Loan concentration has positive effect on *ROE*	Smirlock (1985), Gajurel and Pradhan (2011)
H3	Loan market share has positive effect on *ROE*	Bhatti (2010), Gajurel and Pradhan (2010)
H4	Equity to asset ratio has negative effect on *ROE*	Azam and Shiddiqui (2012), Gul (2011)
H5	Size has negative effect on *ROE*	Nicholson and Snyder (2000), Anthanasoglou (2006)
H6	NPL has negative effect on *ROE*	Alexio and Sofoklis (2009), Ali (2011)
H7	Overhead/revenue has negative effect on *ROE*	Kosmidou (2008), Sufian (2009)
H8	Revenue/total asset has positive effect on *ROE*	Guevera (2003)
H9	Loan to deposit ratio has positive effect on *ROE*	Gelos (2006), Bhatti (2010)

ROE: Return on equity, NPL: Non-performing loan

theory of Harvard Business School SCP version than ESH version of Chicago Business School.

3.3. Analysis Model

According to SCP theory, performance is a function of structure and conduct. In mathematically, it would be functioned as follows:

$$P = f(S,C)$$

Which explains that P is performance, S is market structure, and C is conduct or characteristic of banking. This research will implement the formula stated above. The performance (P) is proximated by profit (π) is function of market structure and individual market share, meanwhile bank characteristics which also expected to influence performance are proximated by liquidity, capital adequacy, and assets quality. Liquidity (loan to deposit ratio [*LDR*]) shows the function of bank intermediation, capital adequacy (CAR) represents the financial structure, assets quality (non-performing loan [NPL]) proximates earning assets whereas the lower NPL is better.

Based on explanation above, the further formula is stated follows:

$$ROE_{it} = \varphi_0 + \varphi_1 ROE_{i,t-1} + \varphi_2 LoanHHI_{it} + \varphi_3 LoanMS_{it} + \varphi_4 TETA_{it}$$
$$+ \varphi_5 Size_{it} + \varphi_6 NPL_{it} + \varphi_7 OCRev_{it} + \varphi_8 Rev/TA_{it} + \varphi_9 LDR_t + e_{it}$$

Whereas, Φ are the regression coefficient; $\Phi1$ = Speed of adjustment to equilibrium profits; i shows the individual samples

selected bank while t is the year; ROE = Return on equity; The independent variables affecting ROE are grouped in group S (structure), C (conduct) and P (performance). In detail, it can be seen in the operational definition of the study variables.

Test models, Firdaus (2012) states the most important criteria that is used to find the best generalized method of moments (GMM) dynamic model is not biased, if ROA_{lag1} of GMM estimators exists between ordinary least squares (OLS) and FEM, OLS < GMM < FEM). Instrument is valid if Sargan test cannot reject the null hypothesis; and consistency if the statistical test showed the null hypothesis is rejected AR_1, meanwhile AR_2 statistics indicate whereas the null hypothesis cannot be rejected.

According to Bhatti (2010) in his research of structure:

Conduct-performance in Pakistani banking, traditional SCP (Harvard Paradigm) will be shown by the significance of market concentration and insignificance of market share:

$$\Phi_1 > 0, \Phi_2 = 0$$

Meanwhile, the efficiency of SCP hypothesis (Chicago Paradigm) will be shown by the insignificance of concentration ratio and significance of market share.

$$\Phi_1 = 0, \Phi_2 < 0$$

Thus $\Phi_1 > 0$; $\Phi_2 = 0$ supports the traditional hypothesis whereas $\Phi_1 = 0$; $\Phi_2 > 0$ supports the efficient structure. However, some events appear as an interesting case whereas:

$$\Phi_1 > 0, \Phi_2 > 0$$

This means both concentration ratio and market share are significant towards profitability. The bank can reach profit because of a good market structure and individual efforts.

4. RESEARCH FINDING AND DISCUSSION

The analysis of market banking condition using *HHI* for credits market and deposits market show that the banking market is in the monopolistic competition (Type I) because the *HHI* point is still around 500-1000. *HHI* in the credits market tends to decrease from 1000 point to 600 points, meanwhile *HHI* in credits market tends to stabil around of 500-600 point. The decrease of *HHI* shows that the market is more competitive.

4.1. Testing Model

The data panel is processed to find out the relationship between *HHI* and *ROE* in the loans channels which is grouped into foreign exchange (forex) bank and non-forex bank is unbiased, valid, and consistent. The proof that it is unbiased is can be seen to the coefficient value of parameter stimasi which is around of OLS and FEM. The coefficient of *ROE.L1* is from the estimation using GMM-FD Arelanno-Bond is around *ROE.L1* from the estimation of OLS and FE; the estimators is unbiased (Table 4).

The verification of consistency of estimators is shown by the significancy value of statistic AR_1 and AR_2. It can be seen the statistic value of AR_1 which is significant, meanwhile the statistic value of AR_2 is non-significant (Table 4).

The verification of validity instrument can be seen from Sargan test. The statistic value of sargan test is not significant. This shows

that there is no correlation between residue and over-identifying restrictions so that the instrument is already valid. There is no problem on validity instrument (Table 4).

The relationship between market structure and performance is significantly positive on the three models (all banks, forex banks, and non-foregin banks). At a glance, there is a different between the speed of adjustment on the forex bank and the non-forex bank.

Generally, the pattern of Indonesian banking is still following the traditional SCP pattern from Harvard Business School. In forex bank group is also applied with traditional SCP, however there is an evidence that efficiency in the sales of credits product can penetrate market in significant way. This is proven by the significance of *loanMS* increases *ROE*. It means, the non-forex bank group obtains the positive result from *loanHHI* (market concentration of loan) and *loanMS* (market share of loan), while the forex banks just obtains the positive implication from *loanHHI*.

The control variable which influences *ROE* significantly is size of firm, non-performing loan gross (*NPLG*), and *LDR*, while the other control variables such as *TETA* (capital adequacy), *OC/REV* (overhead/revenue), and asset utilization (*REV/TA*). The influence of each independent variable will be explained in the hypothesis testing in partial way.

ROE.L1 or $ROE_{x(t-1)}$ has positive effect on $ROE_{x(t)}$ bank. In this study is proven that *ROE.L1* has influence of significance at 5% (all bank), at 1% (forex bank and non-forex banks group). It means that the performance of 1 year ago influence the current performance, it also can be named as speed of adjustment.

In general overview of banking industry, the speed adjustment is at 0.125. This means the convergence level of *ROE* in banking Indonesia is at 0.875 $(1 - 0.125)$. This indicates the speed of adjustment of each bank to reach the steady condition in *ROE* is

Table 4: The effect of loan market concentration on banking rentability

Dependent variable *ROE*	All bank (97 bank)		Forex bank (39 bank)		Non-forex bank (58 bank)	
	Coefficient	P>z	Coefficient	P>z	Coefficient	P>z
ROE.L1.	0.125	0.023	0.090	0.001	0.349	0.000
LoanHHI	0.020	0.018	0.043	0.000	0.014	0.039
LoanMS	−5.192	0.193	−3.169	0.187	22.687	0.049
TETA	0.078	0.422	0.050	0.840	0.046	0.684
Size	−3.722	0.001	−2.151	0.564	−3.783	0.005
NPLG	−1.411	0.024	−1.140	0.264	−1.288	0.082
OC/REV	−0.030	0.266	−0.448	0.004	−0.011	0.411
REV/TA	0.073	0.344	0.373	0.101	−0.006	0.793
LDR	−0.028	0.042	−0.018	0.701	−0.020	0.395
_cons	68.945	0.000	48.435	0.387	57.334	0.007
Wald/pr	61.400	0.000	122.28	0.000	179.82	0.000
Coefficient - ROE.L1.OLS	0.197	0.000	0.076	0.000	0.513	0.000
Coefficient - ROE.L1.GMM	0.125	0.023	0.090	0.001	0.350	0.000
Coefficient - ROE.L1.FE	0.094	0.000	0.122	0.000	0.291	0.000
	χ^2/z	pr	χ^2/z	pr	χ^2/z	pr
Sargant test	61.977	0.213	36.571	0.967	49.706	0.641
AR_1	−2.912	0.004	−2.483	0.013	−2.383	0.017
AR_2	0.912	0.362	0.756	0.449	−0.388	0.698

Bold=Significant, $pr<\alpha$; α max=10%. Source: Data process. NPL: Non-performing loan, ROE: Return on equity, LDR: Loan to deposit ratio, GMM: Generalized method of moments, OLS: Ordinary least squares

at 87.5% per year. Therefore, the time needed to cover half-life of convergence is about 1 year and 1.5 months.

In Indonesian foreign exchange banks' overview, the speed adjustment is at 0.09. This means the convergence level of *ROE* in Indonesian foreign exchange banks is at 0.910 (1 − 0.09). This indicates the speed of adjustment of each foreign bank to reach the steady condition in *ROE* is at 91% per year. Therefore, the time needed to cover half-life of convergence is about 1 year and 33 days.

In Indonesian non-foreign exchange banks' overview, the speed adjustment is at 0.349. This means the convergence level of *ROE* in Indonesian foreign exchange banks is at 0.651 (1 − 0.349). This indicates the speed of adjustment of each non-foreign bank to reach the steady condition in *ROE* is at 65.1% per year. Therefore, the time needed to cover half-life of convergence is about 1 year and 4.2 months.

The differences of speed of adjustment between foreign exchange banks and non-foreign exchange banks occur because the foreign exchange banks are better in business networking. The efficiency of overhead cost also improves the operating revenue which comes from fee based income. This is the reason why the foreign exchange banks are faster in reaching the optimal *ROE* than non-foreign exchange banks.

Athanasoglou et al. (2005) argue that the coefficient of the lagged profitability measure, in this case Φ_1, is the speed of adjustment to equilibrium profits. They state that a value of this coefficient between 0 and 1 suggests that profits persist, but they eventually return to their natural level. A value close to 0 suggests that the speed of adjustment is very high meaning that the banking industry is highly competitive, and when the value is close to 1, the speed of adjustment is very low suggesting an industry with a low competitive structure.

Research finding show that speed adjustment, generally it is seen close to zero, means that the credit market of banking is more competitive as time goes to. The real difference between speed of adjustment on forex bank with non-forex bank is normal because the operational environment of forex bank is larger than forex bank group.

Loan market concentration has positive effect on *ROE*. It can be seen that *loanHHI* has significant value on *ROE*, at α = 5% (all bank), at α = 1% (forex bank), at α = 5% (non-forex bank). It means loan market gives the positive contribution on equity value (value of firm). This condition is normal because the escalation of market concentration will make profitability higher, but if concentration ratio keeps increasing to monopoly market structure, this is not good for banking industry.

Even though the relationship between concentration ratio of credits and profitability is normal, but this condition is bad because the more top 10 banks decrease their controls in banking industry, the more profitability of individual bank will decline. Raising the control of big banks in banking industry to increase profitability is also not a good choice. A significant positive relationship between concentration ratio and profitability is largely found out as a major result in banking industry.

Loan market share has positive effect on *ROE* because *loanMS* has a positive value on *ROE* at α = 5% (non-forex banks). It means market share of loan gives the positive contribution of value of equity to non-forex banks significantly, while in forex banks is not significant. It means traditional SCP is generally still implemented in all banks and forex banks, while in the forex banks is already hybrid SCP. The researches which declare a significant positive relationship between concentration ratio towards profitability are done by Yu and Neus (2005) in their Germany banking research, Bhatti (2010) in his Pakistani banking research, and Gajurel and Pradhan (2010) in their Nepalese banking research. Insignificant positive result also found by Wong et al. (2007) in their Hong Kong banking research which used ROA as dependent variable. Czarnitzki and Kraft (2004) in their research of innovative assets, and the last is by Mirzae et al. (2011) in their research of bank in emerging economics.

Equity to assets ratio has negative effect on *ROE* because *TETA* does not significantly impact *ROE*. It means the dynamic of capital adequacy does not give the contribution to value of equity. Logically, this is normal because the concentrated money in *TETA* will make bank lost an opportunity to make innovation in expanding its business. The minimum of *TETA* is at 8%. However, there are too many banks which reserves *TETA* more than 8%. This condition is not always good, even though the solvability of banking is safe but the money which is allocated in *TETA* will be useless and bank can lost an opportunity in using its money to make other the development of its business which has a purpose to increase profitability. The result of insignificant of *TETA* is consistent with the result from Azam and Shiddiqui (2012) in public and private sector banking area by using profit as dependent variable.

Size has negative effect on *ROE*. Generally, it is proven that size of firm has a negative impact on banks especially on forex banks. However, this study proofs that size has a significant negative impact on non-forex banks, while in forex banks it is not significant.

But if the size of bank become larger, phenomenon of the diseconomics of scale appears, the more difficult for management to conduct surveillance (Nicholson and Snyder, 2000) and the higher the level of bureaucracy that have a negative impact on bank profits (Athanasoglou et al., 2005). Alper and Adam (2011) and Gul et al. (2011) found a direct relationship between the size of banks and profitability.

Supporting this finding research, Naceur and Goaied (2008), observed a positive relationship between capital and net interest margin or profitability in Tunisia, but determined that the bank size impacts negatively on profitability, which implies that Tunisia banks are operating above their optimal level. But, Ani et al. (2012) established that capital and asset composition positively affect on banking profitability, while bank size has negative effect on profitability in Nigeria.

NPL has negative effect on *ROE* because generally *NPLG* gives the negative impact on bank especially on forex banks. This means a good sign because the banking operational has perform normally. The bank management tends to decrease the *NPLG* to increase the quality of assets so that it will impact positively of value of equity. This result supports the normal condition whereas *NPLG* generally will affect negatively towards profitability. The lower *NPLG*, the citizen tendency to give third party funds to banking industry will be higher because a low NPL shows a good performance in banking management and this will make citizen take a strong trust on banking industry to give their deposits. This condition normally will increase *ROE*. Alexio and Sofoklis (2009) show NPL has negative effect on profitability, but influences negatively and significant towards profitability.

OC/REV ratio has negative effect on *ROE* because *OC/REV* ratio gives the negative impact on bank especially on forex bank. This also means a good sign because operational of banking has performed normally. The management of bank tends to increase efficiency so that it will impact positively on value of equity. The efficiency management of overhead will give an impact to operational cost in general. This means it will increase bank profitability. Ceteris paribus, *ROE* increases and value of equity also increases.

Kosmidou et al. (2007), Kosmidou and Zopounidis (2008) and Sufian and Habibullah (2009) among others have also found poor expenses management to be among the main contributors to poor profitability. However, Molyneux and Thornton (1992) observed a positive relationship, suggesting that high profits earned by firms may be appropriated in the form of higher payroll expenditures paid to more productive human capital.

Asset utilization (REV/TA ratio) measures the amount of interest and non-interest income generated per dollar of total assets. Asset utilization ratio is used as proxy for measuring asset management for conventional banks. This will explain how capable assets are working to create revenue and are calculated by dividing operating income with total asset (Miller and Noulas, 1997; Chirwa, 2003).

In this research show that revenue/total asset has positive effect on *ROE* because REV/TA or asset utilization still can't impact *ROE* significantly. This means the percentage of earning after tax (EAT) is the effect from asset utilization still can't compensate the increase of percentage equity.

Asset utilization has a positive impact on Saudi banks profitability (Almazari, 2014), but the effective asset utilization ratio was found to have positive and statistically significant relationship with profitability (Chirwa, 2003; Miller and Noulas, 1997).

LDR has positive effect on *ROE* because *LDR* variable has a negative impact on *ROE* significantly. This means the percentage of increasing loans is greater than the percentage of increasing deposits which decreases value of equity. This phenomenon is in contrast with the basic logic because the increasing *LDR* generally is consistent with the increasing ROA and *ROE*. However, in this study *LDR* and *ROE* has a negative relationship.

This thing occurs because the increasing loans will improve the EAT of the bank which is followed by the increasing percentage of the larger total equity. Therefore *ROE* mathematically will decrease.

LDR is the proxy of intermediation function of banking industry which means it is the main function. The result of this research shows that *LDR* is not significant on ROA with negative effect. If there is an increment of *LDR*, it will negatively affect ROA but not occurring a significant influence. A negative effect is an opposite expectation because the more loans distributed to deficit unit, the more banking will get interest income. In fact, the negative effect indicates that the more loans distributed to deficit unit, the more the risk for NPL is higher. This same result was also stated by Bhatti (2010) also declared an insignificant negative relationship between *LDR* and profitability in Pakistani banking research. Besides that, Jian and Jing (2008) which stated a negative insignificant impact of *LDR* towards profitability in Chinese joint-stocked commercial banks.

5. CONCLUSION

Loan market of banking industry has grown rapidly in 2001-2012, followed by deposits market and the increasing amount of bank offices, however the amount bank has decreased. Loan market banking is in monopolistic category, market concentration influences positively on *ROE*. From speed of adjustment close to zero point of view which means the market condition is more competitive. Generally, Indonesian banking industry is still in collusive condition. However, non-foreign exchange banks still have efficiency in managing their market shares. Speed of adjustment of foreign exchange banks is better than non-foreign exchange banks because the foreign exchange banks are more effective in managing overhead cost which result the better fee based income. In conclusion, the variables which affect *ROE* are *ROE.L1* (+), *loanHHI* (+), *loanMS* (+), bank size (−), and NPL (−), and overhead/revenue ratio (−) meanwhile the other variables do not impact on *ROE*.

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