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Why Have Bank Profitability Been High in Indonesia? An Analysis Using Dynamic Panel Data Approach

Sapto JUMONO
Faculty of Economics and Business, University of Esa Unggul, Jakarta, Indonesia.
Email: sapto.jumono@esaunggul.ac.id.

Sugiyanto SUGIYANTO *
Faculty of Economics and Business, University of Esa Unggul, Jakarta, Indonesia.
Email: sugiyanto@esaunggul.ac.id.

Chajar Matari Fath MALA
Faculty of Economics and Business, University of Esa Unggul, Jakarta, Indonesia.
Email: chajarmala@gmail.com.

ABSTRACT

The purpose of this study is to investigate the determinants of profitability in the Indonesian banking industry. This research defines profitability as basic earning power (BEP) and returns on equity (ROE). We observe the determinant of profitability in terms of basic condition, market structure, banking characteristics, and performance. The analysis uses both the credit market and deposit market channel of Indonesian banking. We also use the theory of Structure Conduct Performance (SCP) as a grand theory. To obtain relevant data, this research uses purposive sampling technique based on Indonesian banks financial statement during 2001-2014. This research uses dynamic panel GMM-Arrellano Bond as the analysis tools. The results show basic condition, market structure, banking characteristic, and performance significantly influence profitability. Based on this result, we suggest that the Indonesian banking market requires an improvement in market structure. They should also increase the performance of efficiency, particularly the performance of individual banks.

JEL Classification: E58; G21.

Keywords: Loans; Deposits; Market Structure; Assets Liability Management (ALMA); Profitability.

* *Corresponding author.*

1. INTRODUCTION

The report from Standard and Poor's Ratings Services (2013) showed that return on assets (ROA) of Indonesian banking was placed at the first ranking in the Asia-Pacific area during 2011-2012. The percentage of ROA was 2.65% (in 2011) and 2.7% (in 2012). Moreover, the report from Status Report on the Philippines Financial System (2012) also showed that ROA and ROE of Indonesian banking were also the highest among South-East Asia countries, which are 2.6% for ROA percentages and 20.3% for ROE percentages. This indicates the performance of Indonesian banking was in a good state. Therefore management behavior and market structure condition of Indonesian banking are the interesting topics to be researched deeper. The objective of this research is to find out whether the performance is occurred by the management's ability in utilizing market or they have been successful in doing internal efficiency to increase the of banking national assets productivity.

Meanwhile, based on the percentage of basic earning power (BEP), the Indonesian banking industry had a good performance. In 2001-2014, BEP of Indonesian banking increased from 0.2% to 2.9%. Even though it slightly decreased by 1.49% during 2005, it continued to remain stable at 1.6% during 2005-2011. Lastly, the BEP of Indonesian banking increased to 2.6% during 2011-2014. This is a good indicator of performance because there was an improvement in assets productivity. The highest BEP percentage of Indonesian banking industry comes from joint-venture banks which have 5.18 percentage, followed by foreign banks which at 2.57%, foreign exchange banks which at 2.31%, in foreign exchange banks which at 2.30%, and state-owned bank which at 1.34%. Based on total assets of Indonesian banking during 2001-2014, the performance had a significant increase in total assets. In 2001, the total asset of Indonesian banking was only 1,099,699 billion rupiahs.

It significantly increased to Rp 5,615,150 billion rupiahs in 2014. The growth of total asset increased to 14.92% per year. It was dominated by foreign exchange banks and state-owned banks. The condition of the market structure of Indonesian banking also has an interesting phenomenon. In 2001, Indonesia had 145 banks and 6,757 branch offices. Meanwhile, the total asset was 1,099,699 billion rupiahs, the total credit was 316,059 billion rupiahs, and the total deposit was 957,417 billion rupiahs. In 2005, the total banks decreased to 131 banks while the branch office increased to 8,236 offices. In contrast, the total asset increased to 1,469,827 billion rupiahs; total credits also increased to 695,648 billion rupiahs, total deposits was 1,166,065 billion rupiahs. In 2010, total banks still decreased to 122 banks while total branch offices increased to 13,837 offices. Total assets increased to 3,008,853 billion rupiahs, total credits also increased to 1,710,677 million rupiahs, and total deposits were at 1,166,065 billion rupiahs. Lastly, in 2014, total banks decreased to 119 banks, and total branch offices significantly increased to 19,948 offices. Total assets increased to 5,615,150 billion rupiahs, total credit was 3,526,364 billion rupiahs, and the total deposit was 3,943,697 billion rupiahs. During 2001-2014, there was a decrease in total banks from 145 banks to 119 banks; meanwhile, the branch offices significantly increased from 6,765 to 19,948 offices. This means there was a tight competition in the Indonesian banking industry, which caused some banks to made an exit from the market or merged with other banks. Meanwhile, the banks which can maintain their existences in the industry kept spreading their offices in the country.

The phenomenon shows that Indonesian banking profitability is related to internal and external activity. The internal banking activity is shown by ALMA (assets liability management) which becomes the guidelines in banking management because ALMA is an integrated set of the entire banking management activities to achieve the objectives to optimally utilize the entire resource capacity. Each activity of ALMA is directed to the balance between risk and return, which remains oriented towards the management of change to fundamentally maximize the value of the firm. The growth of total assets and ROA of Indonesian banking industry also are interesting phenomenons, and they can be developed as a research question. Does the high profitability is affected by good management capability or just because of the market condition? Moreover, the important situation of this phenomenon is the existence of a global crisis that occurred during 2008-2010 and the implementation of Indonesian Banking Architecture during 2004-2012.

The previous researches which are relevant to this study come from Santoso (2011) that concluded the concentration ratio of Indonesian banking has a positive influence on profitability. Meanwhile, the market share of individual Indonesian banking has a negative influence on profitability. This research is by Subanidja (2006), who stated Indonesian banking has oligopoly market structure, and it is is the strongest factor which influences banking performance. However, Mulyaningsih and Daly (2011) concluded Indonesian banking was in the monopolistic condition during 2001-2009. This finding is supported by Sutardjo (2011) and Athoillah (2012), who also stated that Indonesian banking has a monopolistic characteristic, and it relies on interest rate competition. Mirzaei (2011) used banks in both developing countries and developed countries as research sample. The result show market share does not significantly affect profitability in developing countries. However, market share affects profitability in developed counties. Moreover, the finding of Sutardjo (2011) and Santoso (2011) stated that market share directly interacts with the other profitability determinants such as age, ownership, substantial of market power, and other regulations. In developing countries, smaller banks result in higher profitability than the biggest banks.

This study has two main problems, which are, 1) Did the dynamic of Indonesian banking profitability which is related to the basic condition, conduct, and performance during 2001-2014 occur because of collusive behavior or management efficiency? 2) What are the factors that explain the profitability of Indonesian banking? The differences of this study from the others are the longer period, which is 14 years from 2001-2014, and use both deposits market and credits market. The analysis uses DPD Arrelano Bond. The performance is represented by profitability, whereas profitability can be affected by the internal condition (ALMA variable) and external condition (market and socio-economic factors).

2. LITERATURE REVIEW

The concept comes from the basic logical framework which derived from the theories and previous researches from banking experts. Figure 1 is the conceptual framework that explains banking profitability comes from internal factor and external factor.

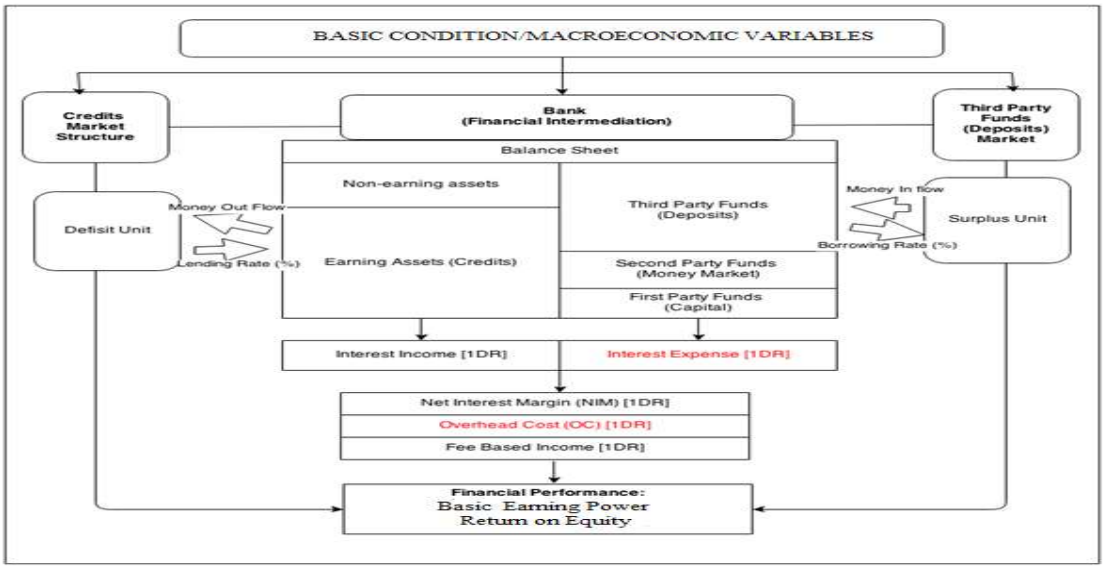

Figure 1.
Conceptual Framework

To assess the level of market competition of the banking industry, we can use the three approaches. They are traditional hypothesis theory, differentiation hypothesis, and efficiency hypothesis. Traditional hypothesis theory assumes that a large market concentration can lead to lower costs, which make a collusive behavior. The differentiation hypothesis theory assumes that a more efficient company will gain a large market share and get more profitability. Meanwhile, the efficiency hypothesis theory assumes that market shares and market concentration are the representatives of the efficiency of the company; it is more efficient to get a larger market share and market concentration. Ramlall (2009) used the theoretical framework about the factors affecting profitability, which are industry characteristics, the level of concentration of the banking market, and macroeconomic variables. The bank-specific characteristics include the size of banks and efficiency. Meanwhile, macroeconomic factors which potentially affect profitability are economic growth, inflation, and interest rates.

Theoretically, there is a correlation between profitability and market conditions, as stated by Rothaermel (2012). It is stated the more market is concentrated, the greater the benefits that would be reached by firms. In contrast, the more competitive banks in the market mean the closer to get normal profitability, and it will lead to market efficiency. This statement is supported by the statement of Yudaruddin (2012) and Jumono et al., (2016), who stated the profitability of the banking industry is the indicator used to determine the performance of the bank. The hypothesis of structure conduct performance (SCP) states that the structure of the industry will determine how the industry behaves. Therefore the structure and the behavior will determine performance. The level of market concentration will be structure size and the level of competition or collusion between companies in an industry. In this case, the increase in market concentration will result in collusion behavior rather than make a safe competition. This condition causes the management of the industry to set a high price to improve profitability.

Hamel and Prahalad (1994) stated there are many factors which are affecting the company's performance, such as government regulations, the force of law and politics, technology, resources, competitors, customer tastes and management of the company. In the perspective of management strategy, the environment is an important contextual factor that affects the performance of the company. Meanwhile, Fisher (1998) found the contextual factors that impact the performance, which are technology, uncertainty, strategy, and competence. Globalization, economic conditions, and technological change also may affect the performance of the company (Porter, 1996). The external factors of industry environment also serve in accelerating the environmental changes that will ultimately affect the performance of the company. The meaning of industrial environment in this context is the bargaining power possessed by buyers and suppliers, the entry of potential competitors, their substitutes, and the intensity of industry competition. Smirlock (1985) proved that the relationship between the level of market concentration and the level of bank profitability does not correlate American banking. The profitability does not come from collusive behavior, but this occurs because of the high efficiency of the leading company.

The purpose of financial management is to maximize the value of the company. Dominick (2014) mathematically formulated the company's value as the present value of a company's cash flow expected to be received in the future, while profit is the most important part is the dominant part of the company's free cash flow. Richard (2010) stated the concept of profit could be divided into economic profit and accounting profit. Accounting profit is calculated from the remaining total revenue net of explicit cost. Meanwhile, economists define profit as the rest of the total revenue net of explicit and implicit cost as the cost from doing business. In the banking industry, the concept of accounting profit is applied to assess the health of the bank. Bank for international settlement (BIS) adopted ROA as the aspects of earnings in CAM(E)LS. The calculation of ROA is by applying the theory du Pont which is by dividing profit before tax (PBT) with total assets (TA), or by multiplying profit margin (PM) with asset utilization (AU). Profit margin is calculated by dividing profit before tax with total revenue, while assets utilization is calculated by dividing total revenue and total assets.

In the theory of ALMA (asset-liability management), a profit is one of the goals to reach the long-term objective, which is to maximize the value of the company. ALMA is also a major part of the banking management strategy. Goedken (2012) stated ALMA is needed for setting banking goals, policies, measurement systems, and the development of the bank's strategy. Meanwhile. Ali (2004) emphasized that ALMA is a series of actions and procedures designed to control financial position. ALMA also becomes the guiding activities of any bank activity because ALMA can maintain the health of banks. BIS (Bank for International Settlement) adopted ALMA and using the CAMELS method to assess the health of banks as well as to anticipate to external changes related to inflation and interest rates and changes in the currency. The profitability in the industry is often used to represent the performance of the industry. The performance (P) in the traditional SCP theory is represented as a function of Conduct (C) and Structure (S). The relationship is expressed as "P = *f* (S, C)." Conversely, in theory of efficiency structure hypothesis, Conduct (C) and Structure (S) is represented as a function of Performance (P). It is mathematically expressed by "C = *f* (P) and S = *f* (P)."

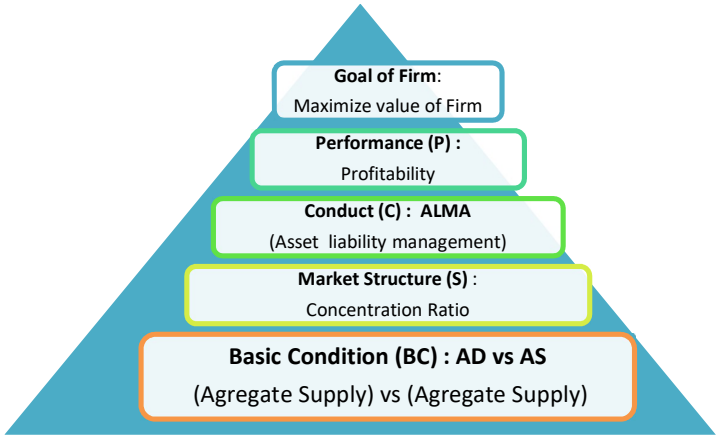

Figure 2.
Relationship Among Variables

Figure 2 shows the relationship among basic condition, market condition, ALMA, profitability, and value of firm (modified by the researcher). This study adopts the concept of SCP as a grand theory to discusses the relationship between profitability, behavior, and market condition of Indonesian banking. Figure 2 shows the profitability, which is represented as a performance based on the SCP approach. Profitability is regarded as an intermediate objective towards the ultimate objective, which is to maximize the value of the company (Dominick, 2014). The optimal profitability is also one of the focuses of ALMA banking activity. Therefore, in this study, the main variables of ALMA will be the proxy of banking conduct. This is particularly relevant because ALMA is a guideline in conducting internal resource management with external conditions such as the dynamics of the market conditions and basic conditions. According to Mason (1939) and Martin (1998), profitability is the representation of performance as a reflection of the industry's performance of efficiency. Neuberger (1997) made the SCP framework that can be adapted to banking characteristics. As intermediary institutions, banks will always deal with agency problems. Meanwhile, as an institution which is supposedly trusted by a citizen, banks will be faced with the problem of imperfect information.

Another unique feature in the banking industry is that the industry is a highly regulated industry because the management of the bank must follow prudential regulation in addition to other public policies. He included institutional economics factor as the profitability determinants, which are asymmetric information and agency problems.

3. METHODOLOGY

This research is applied research because it aims to apply research that has been done by precious researchers, and it will be developed theoretically. This research is also categorized as explanatory research because it aims to clarify the relationship between variables through hypothesis testing (Cooper and Schindler, 2003). The research object is the Indonesian banking industry from 2001 to 2014 because of this, Indonesian banking individually has a different value and size for a different unit. The banking industry also is eligible as the requirement of manageable, obtainable, significance and interest topic, manageable in terms of intellectual aspects, time, cost, and does not against the rules. The banking industry has a very strategic position as an intermediation institution between surplus units (SU) and deficit units (DU). This study produces useful information in improving the financial banking system to sustain the stability of the financial system. This research uses secondary data, which is the financial statement of individual banks. The population consists of all commercial banks operating in Indonesia during 2001-2014. The sample is taken by using purposive sampling technique, which is adjusting sampling based on certain criteria (Cooper and Schindler, 2003). The purposive criteria sampling in this study include (1) the bank is not merger, (2) bank is not Islamic bank, but dual banking can be included as the sampling, (3) the bank has complete variables needed for this research (4) the data of the banks is not doubtful, and (5) the bank must have a complete financial reports from 2001 to 2014. The final number of sampling taken for this research purpose is 97 banks.

The basic idea of modeling the relationship among profitability with internal factors (conduct or banking characteristics) and external factors (market structure and the basic condition) refers to the theory of structure conduct performance (SCP). The econometric model in this research study also refers to Athanasoglou et al. (2005), Bhatti and Hussain (2010), and Gajurel and Pradhan (2010) who tested the theory SCP on commercial banks using regression model. The model is modified and adapted to the conditions in the Indonesian banking sector. Then, we use SCP-based approach to find out the profitability determinants. Basic condition is proxied by macroeconomic variables, which includes variable of M2 (money supply), ICT (information communication technologies), and the global financial crisis. Conduct is proxied by ALMA main variables that include bank Syariah unit activity. This study uses an analysis of two channels, which are deposits market channel and bank credit markets channel to see more clearly the comparison between two markets.

The econometric model of deposit market channel is:

$$\pi_{it} = c_d + \beta_1 \pi_{i,t-1} + \beta_1 RRGWM_{it} + \beta_2 LDR_{it} + \beta_3 NPL_{it} + \beta_4 DER_{it} + \beta_5 TETA_{it} + \beta_6 Sensitivity_{it} + \beta_7 NIIOC_{it} + \beta_8 OCREV_{it} + \beta_9 FBIREV_{it} + \beta_{10} dUUS_{it} + \beta_{11} depMS_{it} + \lambda_1 depHHI_t + \lambda_2 SBI_t + \lambda_3 gofERN_t + \lambda_4 dM2rr_t \lambda_4 Inf_t + \lambda_5 dfincris_t + \lambda_6 gofGNI_t + \lambda_7 ICTInternet_t + e_{it} \quad (1)$$

The econometric model of credits market channel is:

$$\pi_{it} = c_l + \delta \pi_{i,t-1} + \delta_1 RRGWM_{it} + \delta_2 LDR_{it} + \delta_3 NPL_{it} + \delta_4 LAR_{it} + \delta_5 TETA_{it} + \delta_6 Sensitivity_{it} + \delta_7 NIIOC_{it} + \delta_8 OCREV_{it} + \delta_9 FBIREV_{it} + \delta_{10} dUUS + \delta_{11} loanMS_{it} + \eta_1 loanHHI_t + \eta_2 Inf_t + \eta_3 gofERN_t + \eta_4 SBI_t + \eta_5 M2rr_t + \eta_6 dfincris_t + \eta_7 gofGNI_t + \pi_8 ICTInternet_t + e_{it} \quad (2)$$

Where β, λ, δ, and η are the regression coefficients. *i* indicates individual banks, while *t* is the year. π is proxied by basic earning power (BEP) and return on equity (ROE); X*it* is composed by variable of banking characteristics such as LDR (loan to deposit ratio), RRGWM (reserve requirements/statutory minimum), NPL (non performing loan), DER (debt to equity ratio), LAR (loan to asset ratio), TETA (total equity to total assets ratio), sensitivity (risk mitigation), NII/OC (net interest income to overhead cost ratio), OHC/REV (overhead cost to revenue ratio), FBI/Rev (fee-based income to revenue) Duus (dummy of Islamic business units in conventional banks).

The specific industry variables and macroeconomic are dFincris (dummy global financial crisis), gofGNI (economic growth), ICTinternet (development of Internet usage), M2rr (the money supply at various levels of reserves), Inf (Inflation), ERN (exchange rate nominal amount Rp/USD), SBI (Bank Indonesia certificate interest rate), and HHI (index of banking market concentration). The detailed description of explanatory variables in this study can be seen on the operational definition of research variables. The reason for gofGNI and ICT to be included as a representation of the basic condition refers to Neuberger (1997), who stated basic condition contains asymmetric information problem. Technological development is more dominated by the development of ICT. Therefore, the development of internet usage index (gofinternet) becomes a proxy for ICT (which is considered to be able to reduce asymmetric information) along with the growth and purchasing power through economic growth. The definition of the variables in the study are based on the definition of the concept that has been modified based on, the variables are also commonly used in previous research. The dependent variable in this penellitian profitability is proxied by BEP and ROE. The independent variables are classified into (1) a group of macroeconomic variables as the representation of the basic condition; (2) a specific industry variable group variable as the representation structure of the market (financial market and banking) and (3) a group ALMA variable as the representation of conduct, which represents the characteristics of the bank (Table 1 in Appendix).

According to Firdaus (2012), the important criteria used to find the best GMM dynamic model are unbiased, reliable, and has a consistent instrument. The model is unbias if the estimator shows null hypothesis is not rejected. Profitability-lag1 GMM is between OLS and FE; (OLS < GMM < FE). The instrument is valid if the Sargan test does not reject the null hypothesis, and consistent if the statistical test of AR1 indicates the null hypothesis is rejected, while AR2 statistic shows the null hypothesis is not rejected.

4. RESULTS AND DISCUSSION

The results of inferences analysis by using a dynamic model of the Arellano-Bond GMM through analysis of credits market channel and credit market channel, which briefly presented in Table 2. The model has been investigated, and the results have been eligible are not biased, valid, instrument, and consistency. The model is unbias; it can be seen from estimator L1π (BEPlag1, ROElag1) on the GMM estimators Abond, which is between ordinary least square (OLS) and fixed effect (FE). The instrument is valid because the Sargan test does not reject the null hypothesis ((Pr (chi2) > 5%)). The model is also consistent because AR1 statistics show s that the null hypothesis is rejected ((Pr (z) < 5%)), while the AR2 statistics show the null hypothesis can not be rejected ((Pr (z)> 5%)). In summary, there are three findings which can answer the research questions; 1) during 2001 to 2014, the profitability of the prior year has a positive effect on the profitability of the current year on the Indonesian banking industry; 2) the pattern of industrial market is still collusive, and 3) the management control of operating expenses has succeeded in doing efficiency. The effect of prior year profitability on the current year profitability can be seen from coefficient L1π on BEP and ROE both deposits market and credits market. They show a significant positive value. The small coefficient (close to zero) indicates that the deposit market and credit market are increasingly competitive. The existence of collusive behavior in the market can be seen from the market concentration index (depth and loanHHI) which has a positive significant on BEP and ROE, while the market share (loans and deems) are not significant.

Meanwhile, the indication of efficiency in operating expense can be seen from the effectiveness in controlling operating expenses which has the negative influence on the variable OHC/REV (overhead costs) and has the positive impact of NII/OC (profit structure) on BEP and ROE through deposit market and credit market (Table 2 in Appendix). The basic condition which is represented by variable finches (the financial crisis from 2008 to 2011), inf (inflation), and SBI (SBI rate) does not significantly affect profitability. This shows Indonesian banking management strategy has a good condition in facing external interference. Meanwhile the other macroeconomic variables such as of internet (development of internet usage index), m2rr (the money supply) gives a significant positive effect on profitability; however, gofGNI (growth of national income) hurts the profitability. To clarify further the main finding, the interpretation of the description of the effect of any variables that affect the BEP and ROE will be explained clearly.

In this study, it is proved that there is a significant effect of prior profitability (L1π) on π the profitability of the current year (π) because the L1π coefficient shows a positive value as shown in the analysis of credit market and deposit market. The L1π coefficient is positive and significant at 99% confidence level (α = 1%) in the analysis of BEP, while the L1π coefficient is also positive and significant at 95% confidence level in ROE analysis. The finding is consistent with the research result from Pervan et al. (2011), Kundid, et al. (2011), and Chronopoulos, et al. (2013).

The positive value of L1π coefficient can be interpreted as a response to the percentage of how much the bank's profitability in the current year as a result of 1% change in the bank's prior year profitability. In a practical sense, the finding of this study shows the success of the cooperation between the bank (the Board of Commissioners and Board of Directors) and FSA (Financial Services Authority) in controlling Indonesian banks performance.

During 2008-2010, the world financial crisis had an impact on Indonesian economic activity even though the economic growth was still positive during the crisis. The crisis affected the decline of the exchange rate and the increase in interest rate. However, the profitability of Indonesian banking remained positive. The analysis results prove the conditions of the global financial crisis during the period 2008-2010 has a positive effect but not significant on the BEP and ROE. Variable of finches coefficient (dummy crisis) shows a positive value, but it is not significant, which means the profitability of the banking grows in line with the level of crisis even though it did not affect significantly. This shows the Indonesian banking system is strong enough to face the global financial crisis. It also proves that financial and banking authorities have learned from the past crisis events. In the crisis, there was a slow growth of banking assets at 7.7% in 2010, but operating profit and net profit of the bank is nominally relatively constant.

ICT (Information Communication & Technology) is one of the keys to increasing the innovation pace of companies. ICT development has a direct influence on all sectors. As a result, the increase of transparency and asymmetric information will decrease ICT to improve the quality and quantity of the economy through an increase of aggregate demand (AD) and aggregate supply (AS). The implication is an increase in national income and savings society. Therefore the ability of banks to extend credit also increases. In this research, the development of ICT is proxied by gofinternet (development of internet usage index of Indonesian citizens); it shows a significant positive effect on ROE. In the deposits market, internet shows a positive value at 8.176 (significant at 5%). This means the internet can provide information acceleration to consumers throughout the country. The development of internet usage and its utilization index also has implications on ROE. In this case, the increase in ROE occurs because net income marginal grows more than marginal equity. In other words, the development index of the internet used by the public can improve ROE. The development of internet usage in Indonesia contributes to the value of the firm.

Economic growth (gofGNI) has a negative effect on ROE. In deposits market, the coefficient of gofGNI shows a negative value at 26.73 (significant at $\alpha = 10\%$). This means the increase in national citizen income has a negative implication on ROE. Supposedly, economic growth under normal conditions will be followed by volume growth in deposits, the volume of credit, and banking assets. There will also be an increase of NII (net interest income), NOI (net operating income), and NI (net income). When NOI growth is in line with the growth of TA (total assets), then BEP will be insignificant on economic growth. The deposits growth is followed by an increase in equity. If equity growth is higher than net income, then ROE will be decreased. This is the reason why economic growth has a negative and significant effect on ROE. This finding is the opposite from the result of Ongore (2013), who stated the decrease in economic growth would also make the volume of the credit decreases so that it affects negatively on banking profitability.

The money supply is proxied by m2rr. The influence of m2rr on ROE is significant and positive as seen in the analysis of the determinants of ROE both in deposit and credit market. The coefficient of m2rr is 4.61 (significant at 1%) in the deposits market, while m2rr coefficient is 4.71 (significant at 1%) in credits market. This means money supply in various level of reserves can contribute positively to the value of the company by increasing productivity equity of ROE. This finding supports the theory of transmission monitor particularly in investment which stated that the policy of monetary expansion by decreasing the interest rate to increase the money supply with also raise the price of equity (Pe) as the implication of investment cost and in will increase ROE (q). However, this finding does not support the research from Sufian and Chong. (2008) who stated that the money supply does not affect profitability.

Inflation does not have a significant impact on profitability; the result shows the relationship between inflation and profitability is negative and insignificant both in the deposits market and credits market. This indicates that management of banking has anticipated inflation through pricing strategy. The important thing is to find out is whether the price is stable because of real banking efficiency. This finding is the opposite from the research of Syafri (2012) and Khrawish (2011) who stated the inflation has negative and significant on profitability. However, this research supports the finding of Ongore (2013) and Bourke (1989).

The USD exchange rate, which is proxied by governing variables (growth rate Rupiah/USD) hurts BEP. For deposits market, the governor coefficient is at 2.090 (significant at α = 10%), while for credits market, the gofERN coefficient is at 1.530 (significant at α = 10%). This indicates BEP Indonesia is sensitive to fluctuations of USD price. If the rupiah depreciated (USD appreciated) then BEP will increase. This study is the opposite of the research from Dwijayanthy and Naomi (2009), which resulted exchange rate negatively affects ROE. However, this research supports the finding from Khrawish (2011), which shows the exchange rate has a significant and positive relationship towards profitability. Ogunleye (1995) stated that bank profitability could be affected by the nature of the exchange rate of a country and asserts that bank profitability is largely limited by a fixed exchange rate regime; while in the regime of partial, it directly comes from foreign exchange market.

Ogunleye (1995) argued that when the interest rate goes up or down, then it will all impact on bank profits through revenue adjustments to the bank's operations. In Indonesia, the size of the interest rate will indirectly affect profitability through bank base rate (Dwijayanthy and Naomi, 2009). If the interest rate of SBI (Bank Indonesia Certificates) increases, then rates of deposits and loans also increase so that people would prefer to save money with the expectation gets a return is higher than borrowing via credit. Therefore, the distribution of the credits will decrease, and interest income from credits will also decrease, it will result in the decline of profitability. The research result proves that the interest rate does not significantly affect BEP and ROE (see the credit market channel analysis and market deposits). Interest rate coefficient is negative and not significant. The decline of interest rate affects the increase in interest income. Conversely, if the interest rate increases, there will be a decline in interest income and spread that ultimately decreases profitability. The result is by the finding of Naceur (2003), which concluded a negative relationship between interest rate with profitability. However, the finding is different from the research of Molyneux and Thornton (1992) and Demirgüç-Kant, et al. (1999) which stated that the interest rate has a significant and positive influence on bank profitability.

This research uses the Herfindahl Hirschman Index (HHI) as the representative of market structure; this index allows us to asses the level of market competitiveness. A high HHI shows a high market concentration in an industry, which means the industry has a low level of competitiveness. The result shows that HHI has a positive and significant on BEP and ROE. However, HHI*size (the interaction variable between HHI and size) has a negative and significant on BEP and ROE. A positive and significant value of HHI on BEP and ROE indicates the market structure has a positive influence on banking profitability because the conduct affects performance as the result of changes in market structure. Meanwhile, the negative effect of interaction variable between HHI*size towards BEP and ROE indicates that the decline of HHI during 2001-2014 makes its interaction negatively affects bank profitability. The growth of a company's size is constrained by the competitive condition of the banking market. This is reasonable because the conditions of market competition will constrain the expansion of the bank. The influence of deems (market share of deposits) and loans (market share of the loan) are expected to be significant and positive effect towards profitability. However, the research result doesn't support the expectation. This indicates that the differentiation of banking products still doesn't efficient. The variable of deems and loans variable have a positive and insignificant effect on the BEP and ROE.

Meanwhile, loanHHI (the concentration index of credit markets) and depth (deposit market concentration index) have a significant and positive effect (at α = 1%) on BEP and ROE. Based on the criteria, it can be concluded that the condition of credit markets and the banking deposit market are still collusive and not efficient. The positive and significant influence of HHI also means bank profitability comes from market concentration (market power), meanwhile while the coefficient MS (market share) which has an insignificant effect means that the banking product differentiation has not been able to provide a significant positive effect in improving the bank's profitability. A supporting indicator that the banking market is not efficient can also be seen from the behavior of the price. The price of money in banking market can be seen from the difference between lending rate (interest rate of the loan) and borrowing rate (interest rate of deposit) which is often known as net interest margin (NIM) or spread. The thinner the spread means the bank is more efficient. Figure 3 shows the evidence that the spread of banking in Indonesia is still very thick (height) during 2003-2014; it means the selling price is still relatively high because the spread rate is still high. In the future, the competition will increase, which means the spread rate is going thinner, therefore, banks should increase fee-based income (FBI) and cost-effectiveness to maintain the operational income.

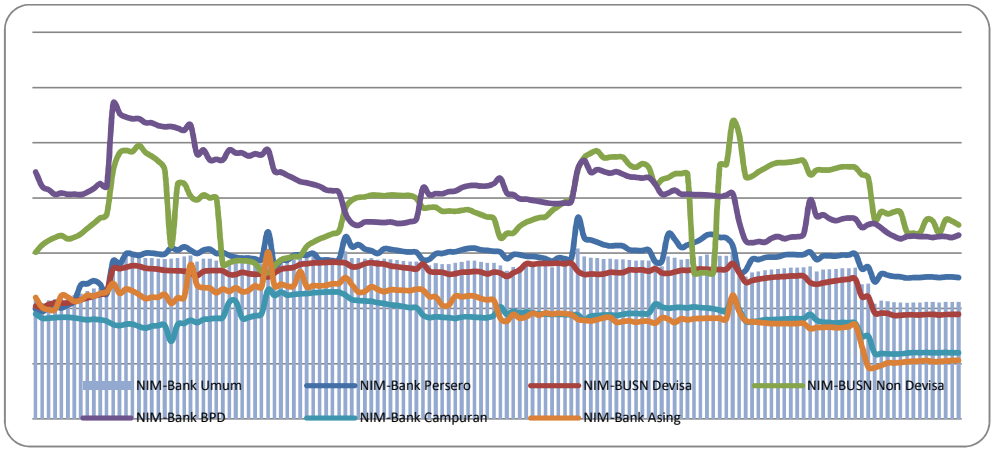

Figure 3.
Dynamic of NIM (Net Interest Margin)

In this research, liquidity is proxied by loan to deposit ratio (LDR), loan to asset ratio (LAR), and statutory reserve. All of the variables have a significant influence on profitability. LDR has a significant and negative effect on ROE, which is shown by the coefficient LDR = -0.0386 (significant at 90% confidence level). This means the greater loan which is resulted from the excess liquidity (internal liquidity of banks), it will make a decline in ROE. Under normal condition, when the distributed credits are high, it will make an excess of liquidity, which will increase ROE. The finding supports the result from Bhatti (2010) and Alexiou, et al. (2009), which gave the conclusion that LDR has a negative and significant effect on banking ROE. LAR has a positive and significant effect on profitability in credits market channel, which is shown by the coefficient at 0.0455 (significant at α = 1%). This means the more credits distributed to the market; the profitability will increase higher. Therefore, the growth of profitability is in line with the growth of credits. Gul et al. (2011) stated the high distributed credit makes the greater interest income so that the profitability also will be higher. If LAR increases, then profitability will also increase. To avoid the problem of bank insolvency, the bank should hold liquid assets that can be easily converted to cash. Therefore, higher LAR will reduce internal liquidity.

The portion of high liquid assets will imply lowering profitability (Bourke, 1989). The level of internal liquidity of banks is one of the determinants of profitability. The statutory reserve has a negative and significant influence on profitability in credits market, which is shown by the coefficient at -0.003 (significant at 5%). This is because the larger the reserve requirement funds will make the bank lost the opportunity to invest in more profitable place. The empirical data shows the statutory reserve of Indonesian banking is higher than the margin, which is at 5%. This means there is an over-liquidity. However, this is also an indication that needs to be examined because the high statutory reserve usually will be followed by a decrease in profitability resulting from an increase in the cost of funds. This finding is the opposite of research from Ernawati (2011).

The Effect of Assets Management on Profitability: In this research, the asset management variable is proxied by NPL (nonperforming loans). The results show that the NPL does not significantly affect profitability. NPL reflects the size of the credit risk, the smaller the NPL means the smaller the risk of bank credit. The data from 2001-2014 shows a decline in NPL, which means profitability normally increases. Under normal condition, if NPL decreases, it will usually be followed by rising profitability. This finding is the opposite of the result from Gelos and Roldos (2006) and (Miller and Noulas, 1997).

The Effect of Liability on Profitability: This research proves that the debt to equity ratio (DER) do not significantly affect BEP and ROE in the deposits market. The composition of the debt-equity structure of the bank financial has no significant effect on profitability. DER is an indicator that can be used to measure the bank's ability to resolve some or all of the debt, both short-term and long-term funds from the bank's equity capital. The high DER means the low bank solvency because the capacity to pay debts of the company is so low, which means the risk is relatively high. The result supports the finding of Rahman and Rochmanika (2012) and Javaid et al. (2011).

The Effect of Capital on Profitability: In this study proved that TETA (a capital portion of the assets) does not have a positive influence on BEP and ROE. The increase in TETA will increase bank solvency, but it is not significant.

The profitability is not significantly affected by TETA (because the increase in net interest income (NII) is equivalent to the increase in the cost of funds. The increase in TETA indirectly is in the form of nominal income growth. However, the increase in operating profit is equivalent to the increase in assets; while the increase in net income is equal to the percentage of the bank's equity. This makes BEP and ROE mathematically look relatively fixed. This makes TETA does not significantly affect profitability. This study is the opposite of the research from Rahman and Rochmanika (2012) and Javaid, et al. (2011).

The Effect of Sensitivity to Market Risk on Profitability: In this study, the sensitivity is proxied by excess-CAR. The high excess-CAR means the strong solvability in bearing market risk. The research proved that excess-CAR has a positive and significant influence on BEP. In the deposits market, the coefficient is at 0.0164 (significant at 5%); while in credits market the coefficient is at 0.0183 (significant at 1%). The stronger the banks in bearing market risk, the greater the ability of banks to reach BEP. The finding is the opposite from research of Dietrich and Gabriel (2010) and Gul et al., (2011)

The Effect of Revenue Structure on Profitability: The revenue structure is proxied by the NII/OC ratio. If the ratio is greater than 1, then the condition of the bank's profit structure is strong because interest income (II) can cover interest expense (IE) and overhead cost (OC). So, if the fee-based income (FBI) is equal to zero, the operating profit will be negative; but if the operating profit is positive, that means the FBI also helps to cover overhead costs. The result shows that NII/OC ratio has a significant and positive effect on BEP, which is shown by the coefficient at 0.00105 (significant at 5%) in deposits market channel, and the coefficient at 0.00102 (significant at 5%) in credits market. This means NII can cover OC. Nevertheless, the management of bank needs to (1) implement the effective control of overhead expenses, because in the future the amount of NII will be going small along with the increasing level of competition among banks and other financial institutions (2) the marketing management banks need to promote further banking products which leads to the maximization FBI. This is the most important key to success if the banks want strong profitability and solvency capital to grow in the future.

The Effect of Overhead Cost on Profitability: The overhead cost (OC) is a non-interest expense that must be paid in carrying out any operations. In general, the largest part of the overhead expenses incurred comes from salaries and wages (Sufian and Chong, 2008). The result shows OC/REV has a negative and significant effect on BEP and ROE, which is shown by the coefficient at -0.0445 (significant at 1%) in deposits market, the coefficient at-0.044 (significant at 1%) in credits market. This shows that the bank managed to save overhead expenses in line with the development of the operating income of the bank. This finding is consistent with research from Guru et al. (1999) and Molyneux and Thorthon (1992).

The Effect of Fee-Based Income on Profitability: Rose and Hudgins (2005) stated that asset utilization measures how effectively utilizing the management of all banking assets. The asset will be effective if it uses properly in generating total revenue. If the asset utilization is low, this means the bank is unable to manage assets until the optimum so that the bank has to increase revenues or dispose of some assets that are considered as unproductive. In this study, the proportion of fee-based income is proxied by the FBI/Rev ratio. The analysis shows FBI/Rev has a significant positive effect on BEP. The coefficient of FBI/Rev has a positive value of 0.0319 (significant at 90%) in the deposits market, while the coefficient is at 0.0307 (significant at 95%) in credits market. This means the role of the FBI as a secondary income has success to increase the profitability of banks. This study supports research from Sufian and Chong (2008).

The Effect of Syariah Unit Existence on Profitability: In this study, the effect of the existence of sharia business unit which operating at conventional banks on profitability is insignificant. The coefficient of sharia dummy (duus) is negative at -9.2899 (significant at 95%) in deposits credit, while in credit market the coefficient is at -8.4686 (significant at 90%). This occurs because the unit products in sharia banks in Indonesia still has a small market share (which is at 5% in 2014, source: FSA). The existence of sharia business unit within the conventional bank still is complimentary for a pioneering Islamic banking market in the future. Therefore sharia banking unit must contend dealing with conventional units which already established and well organized. This finding is consistent with the research of Amalia and Nasution (2007) of the comparative profitability of Islamic and conventional banking industry.

5. CONCLUSION

The existence and sustainability of profitability in the Indonesian banking industry is significantly associated with the behavior and performance of the bank.

Also, profitability is shown to be affected by market structure and the basic macroeconomic conditions such as the growth of the money supply (Ms) and ICT (information and communication technology). The durability bank profitability is also strong enough from the influence of crisis, money market, and inflation, although it is still sensitive with exchange rate volatility. In the future, it is certain that the Indonesian banking market structure will continue to change towards increasingly fierce competition. AEC (ASEAN Economic Community) should be anticipated to prevent the erosion of domestic banking market share. All local banks, national, and international level should construct a strategy to maintain and enhance its customers. Every bank should be more responsive to external changes. Therefore, the efficiency will be the key to the sustainability of the existence of a bank in an increasingly competitive market.

To realize a solid banking industry, consolidation is also required in addition to require improvements in various fields, especially to answer the challenges faced by Indonesian banking. In the formulation of policy planning and strategy development should focus on finance and banking, efficiency and performance, behavior, and structure of the national banking market need to be directed to be more optimal. This is important because according to the Bank of Indonesia. banking industry in Indonesia still faces challenges in the form of (1) the capacity of bank credit is still low (2) of the banking structure is not optimal (3) the community's needs in banking services is insufficient (4) banking supervision still needs to be improved (5) banking capability is still weak (6) the profitability and operational efficiency of the banks that are not sustainable (7) protection of customers that still have to be improved. In the future, regulation and policy planning and development of the national banking industry should be directed to; 1) The resolution of the acceleration of restructuring banking industry which aims to the banking market efficiently which will make the market competition to be more healthy. This will give the benefit to the entire community, 2) The effectiveness of cost structure, and not to focus on the optimization of interest income that would result in a growth rate of credit. The two options will force banks to work smartly in retaining and increasing profitability, which should be oriented to effectiveness and efficiency. The banking market will no longer rely on market power, which means there is no collusion such as maintaining the high interest to get higher profit.

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APPENDIX

Table 1. Determinant Profitability, Definition, Notation and Impact

Variable				Definition	Notation	Impact
Determinant of Banking Profitability	*INDEPENDENT VARIAB*	*Π (t)*	*Profit, BEP_{it}*	➢ *Operating Profit/Asset (%)*	BEP_{it}	
			Profit , ROE_{it}	➢ *Net Income/Equity (%)*	ROE_{it}	
	Banking Perform	*Π (t-1)*	*Profit ,$BEP_{i(t-1)}$*	➢ *Operating Profit/Asset (%), lag-1*	$BEP_{i(t-1)}$	+
			Profit ,$ROE_{i(t-1)}$	➢ *Net Income/Equity (%), lag-1*	$ROE_{i(t-1)}$	+
	Basic Condition	*Macro –Economy*	*Global Financial Crisis (2008-2010)*	➢ *Dummy in the crisis period Dummy excluded in the crisis period*	dFinCris=1 dnormal=0	_
			Economy Growth	➢ *Growth of Gross National Income*	gofGNI	+
			Technology/ICT	➢ *Internet users (per 100 people)*	gofInternet	+
	Industry Specifik – Banking Mkt structure	*Market Share & Competition*	*Market Share of Deposits*	➢ *Deposits/Market Deposits (%)*	depMS	+
			Concentration Ratio of Deposits Market	➢ *Herfindahl-Hirschman index of Deposits Market (point)*	depHHI	+
			Market Share of Credits	➢ *Credits / Market Credits (%)*	loanMS	+
			Concentration Ratio of Credits Market	➢ *Herfiendahl-Hirschman index of Credits Market (point)*	loanHHI	+
			Money Supply	➢ *Money Supplly to Reserve ratio (%)*	M2/rr	+
			ForEx Market	➢ *Exchane Rate of Rupiah/USD*	ERN	_
			Money Market	➢ *Interest Rates of BI (%)*	SBI	_
	ALMA - Conduct Specifict BANK Characteristics	*Explicit*	*Reserve Requirement*	➢ *Giro Wajib Minimum (%)*	RRGWM	
			Liquidity	➢ *Loan to Deposit Ratio %)*	LDR	+
			Dual banking	➢ *Dummy of dual banking Dummy of conventional banking*	dUUS=1 dKonv=0	+
		Implicit	*Portion of Credits*	➢ *Loan/Asset Ratio(%)*	LAR	+
			Portion of Deposits	➢ *Deposits/Equity(%)*	DER	+
			Assets Quality	➢ *Non Performing Loan (%)*	NPL	-
			Risk Mitigation	➢ *CAR- 8%*	Sensitivitas	-
			Banking Capital	➢ *Equity/ Revenue Ratio (%)*	TETA	_
			Revenue Diversication	➢ *FBI/Revenue (%)*	FBI/REV	+
			Profit Structure	➢ *Net Int Income/Overhead Cost (%)*	NII/OC	+
			Overhead	➢ *Overhead Cost /Revenue (%)*	OHC/REV	-

Tabel 2. Determinants of Indonesian Banking Profitability

Independent Variable	***π-BEP***				***π-ROE***			
	Deposit Market		*Loan Market*		*Deposit Market*		*Loan Market*	
	Coef . Sig		*Coef. Sig*		*Coef. Sig*		*Coef. Sig*	
L1.π	***0.26672***	***a***	***0.24455***	***a***	***0.13468***	***b***	***0.13561***	***b***
Dfincris	0.18267		0.04201		0.41529		0.44613	
gofInternet	0.58515		0.70976		**8.17646**	**b**	6.46102	
m2rr	0.16885		0.06683		**4.6142**	**a**	**4.70585**	**a**
gofGNI	-0.63364		-1.41487		**-26.7383**	**c**	-25.2012	
gofern	**2.08989**	**c**	**1.53026**	**c**	-4.2898		-7.49692	
Inf	-0.01809		-0.02509		-0.21757		-0.11831	
Sbi	-0.08715		-0.06937		-0.27042		-0.28637	
depms	-0.35414				1.86049			
dephhi*size	**-0.08373**	**a**			-0.35324	**b**		
dephhi	**0.01195**	**a**			0.05784	**b**		
loanms			-0.08654				**-2.77596**	**b**
loanhhi*size			**-0.1183**	**a**			**-0.49712**	**a**
loanhhi			**0.0166**	**a**			**0.08565**	**a**
NII/OC	**0.00105**	**b**	**0.00102**	**b**	0.00126		0.00127	
OC/Rev	**-0.04448**	**a**	**-0.04417**	**a**	-0.04359		-0.04743	
FBI/Rev	**0.03192**	**c**	**0.03067**	**b**	0.06831		0.05763	
trgwm	-0.00179		**-0.00394**	**b**	-0.00508		-0.00504	
ldr	0.00148		-0.00454		**-0.03857**	**c**	-0.03782	
lar			**0.0455**	**a**			-0.00138	
npl	-0.01144		-0.01647		-0.52688		-0.51035	
Der	0.00042				-0.00037			
teta	-0.0018		-0.01033		0.02752		0.02647	
sensitivity	**0.01635**	**b**	**0.01827**	**a**	-0.06932		-0.0763	
duus	0.42083		0.34341		**-9.28992**	**b**	**-8.4686**	**c**
_cons	***3.7819***	***a***	***2.2964***	***c***	*9.5926*		*10.3718*	
Number of obs/group	1154	97	1154	97	1154	97	1154	97
Wald $chi^2(22)$/Prob	230.96	**a**	425.35	**a**	104.15	**a**	127.74	a
FE_ $L_1\pi$.	0.194	a	0.171	a	0.104	a	0.099	a
Abond_ $L_1\pi$	**0.267**	**a**	**0.245**	**a**	**0.135**	**b**	**0.136**	**b**
OLS_ $L_1\pi$	0.447	a	0.444	a	0.209	a	0.209	a
Sargan , $chi^2(82)$/Prob	78.184		82.635		86.773		82.937	
AR_1, **z /Prob**	-3.4	a	-3.616	a	-2.671	a	-2.724	a
AR_2, **z /Prob**	-1.927		-1.833		-0.061		-0.037	

Notes: a *: significant at α= 1%,* ***b*** *: Significant at α=5%,* ***c*** *: Significant at α=10%*