INTERMEDIATION CHARACTERISTICS AND FUNCTIONS OF BANKING IN INDONESIA

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Abstract

This paper analyzes the influence of ownership and specific characteristic of banks on the capital structure and the intermediation function of commercial banks in Indonesia. Using multivariate regression on bank level data of 2006-2009, the result shows the ownership structure, profitability, size, and management expense affect the bank capital structure, with a total effect of 50.14%. Towards the bank intermediation, with a total effect of 27.01%, the ownership structure, profitability, bank size, credit risk, expense management and capital structure influence the banks intermediation function.

Keyword : *Ownership structure, specific characteristic of bank, capital structure and bank intermediation function*

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I. INTRODUCTION

The function of bank as intermediary institution particularly on allocating credit plays important role for the economic growth. On macro level, bank can be a vehicle to implement monetary policy, while in micro level the bank is the main source of financing both for firm and individuals (Konch, 2000).

In allocating a large value of loan, bank also need a large financing; otherwise will disturb its liquidity. Any expansionary plan on credit requires additional capital since it will reduce the capital adequacy ratio (CAR). Concerning this, the management of the bank needs to decide the capital structure on supporting their operational activity, particularly on credit allocation. The decision on capital structure concerns the optimal combination among available source of fund to finance the investment and to support the firm operation to increase the profit, hence the higher value of the firm (Gitman, 2009).

The capital structure of the financial institution including the bank, is fundamentally different from the non-financial one, because its business characteristic and operational activities is different. In addition, the bank must have a buffer following the regulation by monetary authority or the central bank on minimum reserve requirement, in order to protect depositors (Saunders, 2008). The optimal capital structure is the ultimate target to achieve by the bank. The trade-off theory or balancing theory explains that in order to achieve this optimal capital structure, the firm has to optimize the combination of the trade-off between the benefit and the risk (or the cost) to maximize the firm value (Brigham, 2005). On the other hand, the bank also has to choose which source of fund to use first, as explained by the pecking order theory.

Several empirical research on the choice of source of fund to optimize the capital structure, shows varies result. The empirical study by Darwanto (2008) on foreign exchange bank about the relationship between the leverage with the choice between debt and equity shows a negative correlation, which suggest the bank to increase their own capital instead of relying on the debt to optimize the firm value. This result is in line with Kishan and Opiela (2000), who found that the increase of credit growth is determined by the bank size (asset), and the bank capital (leverage ratio) via the increase of equity. This result is different from Inderst and Mueller (2008), who found the leverage ratio with debt increase, is positively correlated to the increase of risky credit, under the assumption of no regulation.

Beside the choice of fund sources, the decision on optimal capital structure may also be influenced by the ownership structure. The structure of ownership commonly relates to the proportion of the share hold by the shareholders who give them a right to control (source of power) and to make decisions for the firm. From the control perspective, the ownership structure of the bank in Indonesia can be classified into four categories, namely concentrated ownership, government, private and foreign ownership (Taswan, 2010). The large magnitude of individual ownership indicates the ownership structure is concentrated on minority

shareholders. The consequence is the manager is only the lengthen hand of the controlling shareholders, and his decision will depends on them.

With the increasing competition on banking industry and the process of globalization, the national banking policy is directed to provide a healthy, strong and efficient bank. One of the policy is the implementation of Indonesian Banking Architecture, includes the consolidation policy on capital structure and ownership structure. This policy shifted the bank ownership map, where many of the domestic banks are owned by foreign. The increase of foreign investment on domestic bank has automatically changed the control of the domestic bank, especially on the market share.

The change of the policy and the control system due to the ownership shift possibly alters the specific characteristic of the bank. Athanasoglou et.al, (2005) argue that the specific characteristic of the bank is the internal micro condition of the bank, and is identifiable from their balance sheet and income statement. This characteristic may also be identified from the bank capital, size, profitability, credit risk, productivity, management expenses, etc.

The current phenomena on Indonesian banking performance shows a very good progress, as reflected on the growth of asset, a high capital adequacy ratio and high profitability (ROA), stable and well managed liquidity, and also reflected on low non-performing loan (NPL). However, the intermediation function is not yet optimal both on the collection of the third party fund, and the allocation of the credit. The distributed loans is still dominated by consumption sector, while the loan for productive sector; working capital and long term investment, grew less than the consumption credit.

Concerning the above phenomena and the variety result of the existing studies, then it is necessary to carry out a more in depth analysis on the specific characteristic of the bank. This study focuses on the ownership structure of the bank in Indonesia by government, private domestic, venture, and foreign bank. As explained above, the ownership structure and the specific characteristic of the bank do affect the capital structure (Darwanto, 2008, Gropp and Heider, 2009), however, on choosing the source of fund to increase the allocation of loan, there is still different conclusion of whether using equity (Kishan dan Opiela, 2000, Darwanto, 2008) or using additional debt (Inderst and Mueller, 2008).

The explicit aim of this study are, first, to analyze the simultaneous impact of ownership, profitability, bank size, credit risk and the management responsibility on the capital structure; second, to analyze the partial impact of these variables; and third, to analyze the impact of these variables on the intermediary function of the bank.

The second session of this paper discusses the theory and literature studies. The third session discusses the methodology and the data used, while the fourth session discusses the analysis of estimation result. Conclusion and policy implication will be presented on the last session and close the presentation.

II. THEORY

Bank is a business activity that provides services to save and to withdraw it using check or electronic transfer, and also to distribute commercial credit (Rose dan Hudgins, 2010). Apostolik et.al, (2009) divide the core activity of the bank into three; (1) deposit collection, which is collection of the third party fund in the form of giral, saving and time deposit, (2) payment services, which is money transfers, and (3) loan underwriting, which is distributing the fund in the form of credit.

The main function of the bank is intermediating, which is a process to redistribute from the fund surplus unit (firm, government, or household) to the deficit ones. The intermediary function arise because of the expensive monitoring cost, liquidity cost and the price risk, due to the asymmetric information between the net saver and net borrowers (Saunders, 2008). In addition, Saunders (2008) outlined the financial intermediary function into: (1) function as broker, (2) function as asset transformers, and (3) role as delegated monitor, and (4) role as information producer.

The intermediary function of the bank has evolved following the changing of economic environment and the development of the financial market, particularly in industrialized countries such as Europe (Bikker and Wesseling, 2003). The progress of information technology, deregulation, liberalization, internalization is the main reasons why the theory of financial intermediary is not relevant anymore to the current business practice (Scholtens and Wensveen, 2003). These factors tend to reduce the transaction cost and the asymmetric information between the savers and the investors, which is contrary to the assumption of the classic financial intermediary theory.

Bikker and Wesseling (2003) also argue that he liberalization and the development of information technology on capital market has shifted the intermediary function from bank to capital market and non-intermediary financial institution such as insurance. The liberalization of the non-bank financial institution is reflected from the process of facilitating people to save assets and to commit investment. Moreover, along with this liberalization, people are freer to choose the means to save their assets. Beside that, development of technology has assisted people in monitoring their assets development and provided an opportunity to diversify their assets, hence reduces the *monitoring-cost*. These lead to *disintermediation* process in banking industries.

Globalization and competition between banking institution and capital market also influence banking intermediation activities. It leads to the increase of banking consolidation through merger and acquisition in order to increase their capacity through increasing asset (Bikker and Wesseling, 2003). The banking consolidation increase the banking ownership of foreigners, which occurs not only occur in industrialized countries (Bikker and Wesseling, 2003), but also in *emerging countries* (Mian, 2003).

Intermediation function can be implemented optimally if supported by sufficient capital/ resources (Buchory, 2006). Even the collected third party's fund is huge, but without being compensated by additional capital then the bank would still be limited to distribute loans.

2.1. Concept of Capital Structure

Capital structure is one of important financial decision making process because it has a reciprocal relationship to other financial variables. Brigham (2005:547) stated definition of capital structure as follow:

> *"The firm's mixture of debt and equity is called its capital structure. The capital structure decisions include a firm's choice of target capital structure, the average maturity of its debt, and the specific sources of financing it chooses at any particular time.Managers should make capital structure decisions designed to maximize the firm's value".*

The capital structure reflects the proportion between the capital from long-term debt and equity, hence will be measured by Debt to Equity Ratio (DER). The higher DER shows higher proportion of the total debt compared to total equity; vice versa.

The underlying theory about the optimal capital structure are: (a) *Modigliani-Miller (MM) theory,* which state that without considering the tax, the company's value is not affected by the capital structure, *(b) Trade-Off theory,* explains that the company will have optimal capital structure based on the trade off between the benefit and the cost of the debt *(c) Pecking Order Theory*, explains that the company will determine the hierarchy of its source of funds, where the internal financing should come first than the external financing. This theory does applies not only for non-financial company but also for banking industry (Marques and Santos, 2003). Marques and Santos (2003) argued that in the process of deciding capital structure, the most important concern is the trade-off between incentive and *governance*, and the ownership structure as the control on equity and debt allocation.

Related to the intermediary function, then banks should have increased the source of funds from *equity* because of its low volatility and cost relative to debt. This is in line with Buchory's (2006) and Kishan and Opiela (2000).Under strict regulation condition in Indonesia, banks are suggested not to take high risk by increasing high risk loan, since high credit and bankruptcy risk would decrease of public trust. This view contradicts to the idea of Inderst and Mueller (2008), who predicts that capital structure of bank will positively influence the intermediation function of the banks, especially in distributing loan.

2.2. Ownership Structure

Decision on capital structure is mady by management of a company influenced by the shareholders. Ownership structure represents *source of power* to control company's management especially in making policies for the company. The relevance of ownership structure to explain the capital structure is provided by the Agency Cost theory, which expressed that manager and shareholders have an *Agency Relationship*. Agency relationship is a contract between individual or more precisely as principal, who gives authority to someone (agent) to make decisions on behalf of principal in order to maximize their benefit. The conflict of interest and the consequence of the contract will in turn createagency cost.

Agency relationship in banking institution is very complex since it involves the relationship between shareholders and management (agent), the relationship between bank and debtor, and also the relationship between bank and regulator (Taswan, 2010). From the perspective of banking management, debt collected from the third party's funds (DPK), is the main source for debt, hence plays highly important role for the bank. The use of debt from public becomes incentive for managers to work carefully to avoid the risk of bankruptcy and to keep public trust on the bank.

Taswan (2010), based on study by Atif Mian (2003), divided ownership structure of bank in Indonesia into four; concentrated ownership, government, domestic, and foreign ownership. In this paper, ownership structure dominated by government and private sector is hypothesized to positively and significantly influence the capital structure (DER). It implies for banks dominated by government or domestic private, the capital structure tends to increase debt relative to equity. Instead, foreign ownership structure negatively influences the DER.

2.3. Specific Characteristics of Bank

Specific characteristics of Bank that influences capital structure policy, are the firm internal condition, which can be observed from their balance sheet and income statement (Athanasoglou et.al, 2005). This study will use the following 4 main factors from specific characteristics of bank to determine the capital structure policy: (1) profitability, (2) size of bank, (3) credit risk, (4) management expenses.

Profitability is the ability of the bank to create profit in a certain period expressed in percentage. The rate of banking profitability is usually computed by using ROA (*return on asset*), which is a ratio between net income and total asset. ROA reflects the ability of bank's management to make profit from their asset (Athanasoglou, et.al, 2005). Thus, the hypothesis is profitability negatively and significantly influences the capital structure of bank.

Size shows business scale made by a firm. *Size* is observed from the number of firm's assets, and an increase on firm's assets shows higher investment made. The *size* of bank is hypothesized to have a significant and a positive influence on capital structure of the bank.

Credit risk or frequently called as *default risk* is a risk due to customer's failure to repay the amount of loan granted by bank along with the interest in a certain specified period (Dahlan Siamat, 1999). Thus, the hypothesis is credit risk is negatively and significantly influences the capital structure of bank.

Management expense reflects the total expenses on the cost spent by the management in running the business, including operating cost and other expenses. The increase in management expense, proxied by relative proportion of the total cost on total assets, will have a direct relationship with bank's leverage. In this paper, the increase in management expense of bank positively and significantly influences the capital structure, which is in the form of increasing total debt relative to equity.

A lot of studies on the influence of bank specific characteristics on capital structure provide varies results. Gropp and Heider (2009) and Titman and Wessels (1988) found that the profitability has a negative impact on debt policy, while the size influences positively. Meanwhile the credit risk negatively influences debt policy (Darwanto, 2008 and Gropp and Heider, 2009) and management expenses has a positive influence on debt policy (Titman and Wessel, 1998 and Darwanto, 2008)

III. METHODOLOGY

We use descriptive analysis to show and to explain the condition of research object. After verifying the hypothesis, the analysis is continued with quantitative approach to test the proposed hypothesis.

In this paper, we use the ownership structure as independent variable which is divided based on the proportion of the large block shareholding, and falls into three categories; government, domestic, and foreign ownership. The next independent variable is the specific characteristic of the bank includes profitability, size of bank, credit risk, and management expenses. The dependent variables is the capital structureas *intervening* variable and the bank's intermediation function.

3.1. Empirical Model

Based on the model framework with two dependent variables, where one of them is intervening one, in the form of capital structure variable (DER), then we apply the path analysis. The structure of model is presented in Figure 1 as follow:

Figure 1
Model Structure of the Research
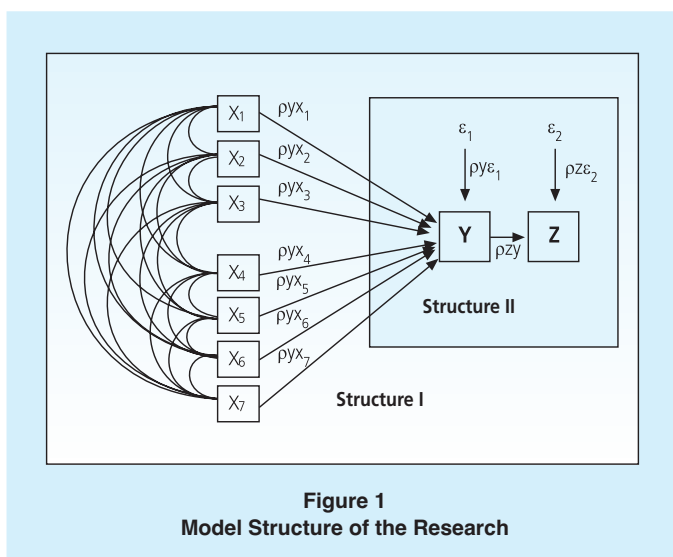
As shown above, the model is divided into two structural equation as follows:

Structural equation 1:

$$Y = \rho yx_1 X_1 + \rho yx_2 X_2 + \rho yx_3 X_3 + \ldots + \rho yx_7 X_7 + \rho y\varepsilon_1$$

Structural equation 2:

$$Z = \rho yx_1 X_1 + \rho yx_2 X_2 + \rho yx_3 X_3 + \ldots + \rho yx_7 X_7 + \rho zy + \rho z\varepsilon_2$$

These equations are used to explain the direct effect of the exogenous variables on endogenous one. Y refers to the Capital Structure, influenced by Ownership Structure (X1,X2,X3) and Specific Characteristics of Bank (X4,X5,X6,X7). Meanwhile Z refers to Intermediation Function of the bank, which is influenced by Ownership Structure, Specific Characreristics of Bank, and Capital Structure (Y)

3.2. Data

The unit of analysis is conventional banks in Indonesia covering the observation period of 2006-2009, and using purposive sampling, we obtained the total samples of 54 banks over initially 121 banks.

Banks included are the conventional banks with major ownership structure and is dominated by one shareholder ($\geq 51\%$ of the total shares) consecutively during the observation

period of 2006-2009. From the overall population, there are only 54 banks that meet the criteria, consisting of 12 government banks (BUMN and BPD), 24 Domestic Private Banks or BUSN (foreign exchange and non-foreign exchange BUSN) and 18 Foreign Banks (joint venture and foreign banks). Some samples are failed to include because fail to meet the set criteria and or insufficient observation.

In terms of the data, we need to run the normality test to ensure whether the residuals of the regressed model has a normal distribution. We do the the normality test using plotted graph and Kolmogorov-Smirnov test, since the the samples are large enough. Since the structure of the model contains two path, the result of normality test is also divided into two, both for structural equation 1 and 2.

Graphic test shows a dispersion around the diagonal line, both for equation 1 and 2 , which shows that residual is not normally distributed. Similar result is obtained fromKolmogorov-Smirnov with the probability oF-test0,013 for equation 1 and 0,000 for equation 2; both shows the residual of the model are not normally distributed.

To overcome this non-normality issue, we can reduce the outlier data for variable with extreme values or large deviation. From descriptive identification, some bank have large deviation compared to others. 6 (six) banks are taken out from data including PT Bank Akita/Bank Barclay Indonesia, PT Bank BNP Paribas, PT Bank Maybank, PT Rabobank, Bank Of China Limited, and The Bangkok Bank Comp.Ltd, and leave 48 banks on the sample set. The normality test result for equation structure 1 and 2 using graph plot test shows data spread around the diagonal line and follow the direction of the line. It shows that residual data are normally distributed. Similarly, using the Kolmogorov-Smirnov test, with probability of 0,194 and 0,116, for equation 1 and 2 respectively, the test conform the normal distribution of the residual, hence we can proceed the analysis..

Beside the above normality test, another important thing to do is to make sure the estimated models are free from multicollinearity which can be identified from relationship among independent variables. Relationship or correlation shows initial indication of the existing relationship among exogenous variables. The correlation can be positive or negative. The negative correlation value shows reversed directional relationship while the positive one shows common directional relationship.

We find a very strong but negative correlation between domestic ownership and *size* of -0.608 and is significant. It confirms that the higher proportion of domestic ownership on bank, the smaller the *size* (total asset), and vice versa. Meanwhile a very low correlation exists between ROA and NPL by 0,003 and is not significant (this correlation can be ignored because the value is very small).

Strong and significant correlation exists between government ownership and domestic ownership, -0,454. A strong correlation is also found between government ownership and

foreign ownership by (-0,460), and domestic relationship and foreign relationship by (-0,522). These strong correlations occur because those three variables are part of the ownership concept with opposite correlation as expected. The rest variables show low correlation.

IV. RESULT AND ANALYSIS

4.1. Descriptive Analysis

The highest DER ratio of 1753,83% belongs to Bank of China Limited, and the lowest one belongs to PT. Maybank Indocorp by 11,51%, with the average DER ratio of 500,79%. The high DER ratio is due to the high level of debt taken from third party's funds. This is natural since the function of the bank is as funds collector from the public. Meanwhile the high average equity exists for the publicly listed banks, since they can obtain additional capital from the owner as well as from the public capital market.

The highest average of *Loan to Deposit Ratio* (LDR) which is 320,89% belongs to The Bangkok Bank Comp.Ltd, and the lowest one belongs to Bank of China Limited by 21,59%, while the average of LDR for all bank is 88,67%. This average ratio of LDR is fair enough, since 88,67% of the collected third party's funds is distributed in the form of loan, showing the intermediation function of bank is very good. The high average ratio of LDR belongs to foreign banks, because in general, foreign banks get some liquidity facility from its headquarter in abroad.

During the period of 2006-2009, ownership structure of some domestic banks has shifted to foreigners, while the government ownership remains unchanged. After clustering the data, the highest total average of ROA exists on foreign banks by 3,11%, then government banks by 2,89%, and the lowest one belongs to domestic banks by 1,76%. The average ROA of domestic-owned banks is below standard ROA regulated by Bank Indonesia, which should be above 2%. The largest average assets ratio belongs to the government-owned banks by 16,69% (in natural logarithm), then foreign-owned banks by 16,00 (in natural logarithm), and the lowest one belongs to domestic-owned banks. The total assets of bank owned by government are dominated by BUMN banks such as PT Bank Mandiri, PT Bank Rakyat Indonesia and PT Bank Negara Indonesia. While largest asset value for foreign-owned banks are dominated by PT Bank Danamon, PT Bank CIMB Niaga, PT Bank Internasional Indonesia and Citi Bank N.A.

For the average ratio of credit risk (NPL), the highest ratio belongs to government-owned banks by 3,86%, then foreign-owned banks by 3,32%, while the lowest one is domestic-owned banks by 2,66%. The average of management expenses has different pattern, where the highest average belongs to domestic-owned banks by 10,23%, then government-owned banks by 9,20% and the lowest one belongs to foreign-owned banks by 7,49%. These descriptions indicate that the domestic and the government banks in Indonesia are less efficient relative to foreign-owned banks.

On the DER value, the highest average DER belongs to domestic banks by 589,64%, then government banks by 560,38%, and the lowest one belongs to foreign banks by 400,80%. It shows that the domestic and the government banks in Indonesia rely more on debt rather than equity in their capital structure. On the other hand, for the value of Loan to Deposit Ratio (LDR), the high average ratio of LDR (>100%) is dominated by foreign banks and joint venture banks, while for LDR (<100% belongs to domestic and government banks. The highest LDR belongs to foreign banks by 107,24%, then domestic banks by 79,07%, and the lowest one belongs to government banks by 65,35%.

4.2. Result of Path Analysis for Equation Structure I

The model on structural equation is used to know and to test the simultaneous impact of the ownership structure (government, domestic, and foreign ownership) and the specific characteristics of the bank (profitability, size of bank, credit risk, and management expenses) on capital structure.

The determination coefficient (R^2) is 0,496 or 49,6%. This coefficient reflect that 49,6% of the variability of capital structure (DER) can be explained by variables of government, domestic, foreign ownership structure profitability, *size of bank*, credit risk and management expenses , while the rest 50,4% is affected by other factors beyond this model. Even though the determination coefficient value is small, the F-test shows that the simultaneous influence of government, domestic, foreign ownership structure, profitability, *size* of bank, credit risk and management expenses on the capital structure do exist.

Meanwhile the influence of the seven exogenous variables on the capital structure is partially explained by observing the sign, value, and significance of each path coefficient of the exogenous variables.

Effect of Government, Private Domestic, and Foreign Ownership Structure on Capital Structure

Statistically, the ownership of government negatively and significantly influences the capital structure. This result is inconsistent to the initial hypothesis that government ownership structure positively influences the capital structure.

Initially, the direct effect of the government ownership on the capital structure by 15,37%, and it has the correct sign. However, when it is related to other exogenous variables, the effect decrease then turn to be negative. The value of the total government ownership structure on the capital structure become -4,11%. This indicate that the banks with major government ownership tend to use equity as their source of funds. This contrary to Atif Mian (2003) who argued that the government banks have weak control because the

implementing principle is agent to agent instead of agent to *principal*, hence tend to use debt as the control to reduce the agency conflict. Our result is also contrary to Smith (2005) who argue that the equity ownership that is concentrated has strong relationship with concentrated debt holder.

The partial test shows the domestic ownership negatively and significantly influences the capital structure. Nevertheless its sign is not consistent to our initial hypothesis formulation.

Similar to the government banks, the domestic banks tend to reduce debt as their source of funds, and tend to use equity. The direct effect of domestic ownership on the capital structure is initially positive by 10,69%, however, due to the existing correlation with other variables, the total effect of domestic ownership structure on the capital structure is negative by -3,85%. This is also contrary to the study by Atif Mian (2003) who found domestic banks tend to use debt in their capital structure, and also contrary to Smith's argument (2005).

The partial test shows the foreign ownership negatively and significantly influence the capital structure of the bank by 15,83%. This means the foreign-owned banks tend to reduce the debt and use equity instead in their capital structure. This result conforms the Atif Mian's study (2003) and Douma and Kabir's study (2002), who argued that the foreign-owned banks tend to be moderate in constructing their portfolios, because they have strict supervision or control from the parent company. In addition, foreign banks usually have relatively high liquidity, facilitated by parent company and high capital ratio. Moreover, Atif Mian (2003) also argued that the foreign private banks tend to use equity to cover the risk.

Looking at the ownership structure from 54 banks during the observation period of 2006-2009, the maximum ownership by government and foreigner is 100%, while the domestic ownership is 99,998%. The 100% shareholding of the government is in PT. Bank Tabungan Negara (Persero), while 100% shareholding of foreign banks as branch office in Indonesia is Bank of China Limited, Citi Bank N.A, Deutsche Bank AG, The Bangkok Bank Comp.Ltd, and The Bank of Tokyo Mitsubishi.

The average shareholding of government is 71,27%, domestic is 41,95%, and foreigner is 82,12%. As explained previously, during 2006-2009, there was a shifting of ownership, where the domestic-owned banks became foreign-owned banks, while the government ownership remains unchanged. Some banks categorized as *foreign exchange* Conventional Domestic Private Banks (BUSD) that has shifted to major foreign-owned banks in 2007 are PT Bank Niaga to PT Bank CIMB Niaga, PT Bank Bumi Putera Indonesia to PT Bank ICB Bumi Putera Indonesia, and PT Bank Nusantara Parahyangan. Moreover, the ownership of Bank Akita, in 2009, also shifted to foreign and change its name to PT Bank Barclay Indonesia. The domestic banks with major foreign ownership during 2006-2009 are PT Bank Danamon, PT Bank Internasional Indonesia, PT Bank OCBC NISP, and PT Bank UOB Buana.

Profitability Effect on the Capital Structure

Based on Bank Indonesia' regulation, a good ratio of ROA is higher than 2%. From the 216 ratios of ROA, the highest one is 11.21% and the lowest one is -22.76%, while the average is 2.63%. In general, it indicates that banks can make profit from the asset by 2,63% and is categorized as good. From the total 54 of bank samples, there are 4 banks with negative ROA; namely Bank Ganesha, Bank Harda Internasional, Bank Agroniaga and Bank Akita, and all of them are classified as domestic private banks. The high average ROA belongs to the foreign-owned banks with the status as joint venture banks such as PT Bank BNP Paribas Indonesia (7.02%), PT Bank China Trust Indonesia (6.07%), PT Bank Woori Indonesia (5.92%), PT Bank Maybank (5.74%), and PT Bank KEB Indonesia (5.71%).

The partial test result shows that the profitability (X_4) negatively and significantly influences the capital structure of the bank by 24.72%. This means the more capable of bank to make profit from its assets (ROA), the tendency of the bank to reduce debts as their source of funds. This result confirms Myers(1984) who argued that high level of profitability will encourage the firm to use retained earnings as source of funds rather than external funding or debt.

The result of this research also confirms Gropp and Heider (2009) that used large banks as the sample in United States. Moreover Titman and Wessels (1988) also found the same result on manufacturing firms. Compared to other specific characteristics variables of the bank, the level of profitability gives a higher effect to the capital structure. As for its indirect effect, the level of profitability to the capital structure is higher when it is related to foreign ownership structure by 6,87%. This indicates that high profitability tends to belong to foreign-owned banks that use lower proportion of debt, since the need of funds can be obtained from retained earnings (equity).

Size Effect on the Capital Structure

Size positively and significantly influences the capital structure of banks by 7,61%. This means the bigger the *size* of bank, the higher the use of debt as a source of funds. It conforms Gropp and Heider (2009), Darwanto (2008) and Titman and Wessels (1988) who used manufacturing companies as their sample.

From the 216 observations, the highest *LnAsset* by 19,73% or amounted Rp 370.310.994 (in million rupiahs) belongs to PT Bank Mandiri (Persero). The lowest *LnAsset* by 11,22% or amounted Rp 74.251 (in million rupiahs) belongs to PT. Bank Sahabat Purba Danarta. For all samples, the average of *LnAsset* is 15,55% or amounted Rp 25.676.935 (in million rupiahs). Among the total 54 bank samples during 2006-2009, the largest three assets are government-owned banks or BUMN (Persero); namely PT Bank Mandiri with the average of total asset of

Rp 317.090.587, PT Bank Rakyat Indonesia, Rp 229,775,347, and PT Bank Negara Indonesia Rp 194,185,760. Those figures are far above the average of all bank samples.

The size shows the business scale of the bank indicated from their total assets, and the increase in bank' asset indicates the increase of investment. Bigger size of bank requires more funding in the long-term, and one of the fund source choice is debt, where the cost is lower than issuing new stocks. When *size* is related to domestic ownership structure, its indirect effect on the capital structure is higher and will be 7.75%. This shows that the bank with broader scale of business and with major domestic-owned shares, tends to use debt as its source of funds.

Credit risk Effect on the Capital Structure

The highest average bad debts is recorde by PT. Bank Mandiri (Persero) of Rp 10,930,498 (in million rupiahs), and the lowest belong to Bank of China Limited by zero and PT Bank Sahabat Purba Danarta by Rp 1,673 (in million rupiahs). In line with this, the lowest *Non Performing Loan* ratio by 0,00% is recorded by Bank of China Limited and the highest NPL belongs to PT Bank Mandiri (Persero) by 16,89%. From all 216 observations, the average NPL is 3,26%, showing that the average of bad debts rate is still below the limit regulated by Bank Indonesia; NPL $\leq$ 5%. During observation period, the lowest average NPL is recorded by PT. BPD Kalimantan Barat by 0,25% and the highest one is by PT BPD Sulawesi Tengah by 10,19%.

The estimation result shows the credit risk negatively and significantly influences the capital structure of bank by 1,52%. This means the higher the risk , the lower DER will be, indicating that the bank will reduce source of funds from debts. This result of conforms Darwanto (2008), and also Gropp and Heider (2009) who found that the asset risk and the market risk negatively influence the capital structure.

Credit risk has a significant influence on bank's capability in providing funds. High credit risk due to the bad loans could decrease the public trust which in turn leads difficulties for the bank in collecting funds from the third party; hence reduces the debt source. Indirect influence of the credit risk on the capital structure is higher by 1,14%, when it is related to the government ownership structure.

Influence of Management Expenses on the Capital Structure

The highest average of total cost is recorded by PT Bank Mandiri (Persero) by Rp 22,784,811 (in million rupiahs), and the lowest one is by PT Bank Sahabat Purba Danarta by Rp 15.524 (in million rupiahs). Using management expense ratio to total asset, the lowest is PT Bank Maybank Indocorp by 0,871%, and the highest ratio belongs to Bank Akita/PT Bank Barclay Indonesia by 40,05%. The average of management expense ratio from the 54 bank samples is 8,79%. The

highest average of total expenses arise from interest expenses by 49,04% of the total *cost*, then followed by operating expense by 38,94%, and the rest 12,02% comes from the write-off productive activa expense and the Commitment and Contingency Expense.

The partial test shows that the management expense of the bank positively and significantly influences the capital structure by 8.43%. This indicates as the management expense ratio increase, then the leverage ratio of the bank tends to increase simultaneously. This result conform the study by Titman and Wessel (1988) and Darwanto (2008).

If a company uses more *debt* than equity, it will increase the total cost in the form of interest expense. When related to domestic ownership, the indirect effect of management expense on the capital structure is 4,82%. It means that the bank with high management expense and with major domestic shareholding, tends to use debt as their source of funds.

4.3. Result of Path Analysis on Equation Structure II

The structural equation 2 is used to analyze the impact of the ownership structure of bank (government, domestic, and foreign ownership), the specific characteristic of bank (profitability, *size* of bank, risk of credit and management expense) and the capital structure on the intermediary function of bank.

Determination coefficient of the model (R^2) is 0,270 or 27,0%. This value is relatively low that shows only 27.0% of the variability of intermediation function of bank (LDR) can be explained by the government, domestic, and foreign ownership, the structure specific characteristic of bank (profitability, *size* of bank, credit risk, management expense), and the capital structure, while the rest 73,0% is explained by other variables beyond the model[2]. However, the F-test indicates all exogenous variables simultaneously influence the intermediation function of the bank.

Similar to structural equation 1, we also analyze the partial test for all dependent variables in structural equation 2. The partial test shows the government, domestic, and foreign ownership structure, the profitability, the *size* of bank, the credit risk, and the management expense variables do not have significant influence on the intermediary function of the bank. It means small changes in ownership structure or in *specific* characteristic of the bank does not directly influence the intermediation function of bank. However those above variables have indirect effect through its relationship with capital structure.

From the computation of path coefficient, the capital structure is the only one that has direct negative and significant influence on the bank intermediation by 12,18%, with the total effect of 13,846%. It indicates the higher debt ratio to equity (DER), the lower the ratio of

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2 The writer realizes that this model still needs more improvement and become further research agenda.

intermediation function of bank. In other words, the intermediation function of the bank through loan distribution will increase if the source of funds from equity is increased. This is in line with the research done by Kishan and Opiela (2000) who stated that loan distribution is influenced by increasing equity and also research by Buchory who stated that intermediation function of bank is influenced by capital structure from equity. This finding also confirms the theory by Rose (2010) that capital structure is a critical factor that should be noticed by management of the bank on implementing its intermediation function, in order to build the public trust and to anticipate the current risk.

These findings, however, contrary with Inderst and Mueller (2008) idea who stated that under the assumption of no regulation, the high risk loan can be distributed by increasing the leverage ratio of the debt. This is not the case for Indonesia, since the banking industry is regulated and tightly controlled by monetary authority.

Compared to all explanatory variables, , the foreign ownership (X_3) and profitability (X_4) have relatively high indirect influence on intermediation function of the bank through its relationship with capital structure by 1,33% and 1,20% respectively. It indicates that foreign-owned banks with capital structure coming from equity, will have higher intermediation function, indicated with higher rate of LDR ratio. And bank with high profitability, and with higher equity in their capital structure, also will have higher intermediation function.

This finding is different from what Atif Mian said that the domestic banks tends to be aggressive in allocating the funds in the form of loan, because of its competitive advantage related to *"soft information"* that enable them to distribute higher loan with higher interest rate. This contradictive findings is acceptable, since if we look at the foreign ownership structure in our sample , most of them are classified into domestic private banks (foreign exchange BUSN) with large total asset and are already *go public* such as PT Bank CIMB Niaga, Tbk, PT Bank ICB Bumi Putera Indonesia, Tbk, PT Bank Nusantara Parahyangan, Tbk, PT Bank Danamon,Tbk, PT Bank Internasional Indonesia, Tbk, PT Bank NISP, Tbk, PT Bank UOB Buana, Tbk.

V. CONCLUSION

This paper is an empirical research on 54 conventional banks in Indonesia with observation period of 2006-2009. The first conclusion of this paper is the ownership of government, domestic, and foreign ownership, the profitability, the size of bank, the credit risk, and the management expenses simultaneously and significantly influence the capital structure of the bank. The ownership structure negatively and significantly influence the capital structure. In the other hand, the *size* of bank and management expense of the bank positively and significantly affect the capital structure. The second conclusion related to intermediary function of banking, the government, domestic, and foreign ownership structure, the profitability, the size, the credit

risk, the management expense and the capital structure simultaneously influences the intermediary function of the bank.

Based on these conclusions, we derive recommendation for banking practice and suggestion for further academic research development. In terms of the first point, the following recommendations are:

1. Considering the high impact of the ownership structure and the specific characteristics of bank on the capital structure, then it is important for banks in Indonesia to concern more on this issue in order to optimize their intermediary function to increase the growth of loan distribution for the real sector.
2. Our findings suggest the banks with higher potencies to go public to increase their capital, the loan expansion, and their liquidity. This will also help the bank to be more transparent (*market to corporate control*) while keeping prudential practice.
3. Domestic banks are suggested to increase the performance by increasing profitability and reduce management expense by increasing their operating cost efficiency, in order to compete with foreign-owned or joint venture banks.
4. The government must keep concerning about their policies on foreign-owned banks establishment, especially for those with branch office status, since only few foreign banks contribute to the performance of banking in Indonesia. It is different from the joint venture bank and the foreign ownership in domestic private banks, that give better performance and better control.

In terms of academic aspect and further research, this paper provide the following recommendations:

1. It is important to differentiate the ownership structure of bank before and after *go public*, to give a more accurate result.
2. It is important to clarify the alternative source of funds from debt; whether it is bond*, long-term debt*, subordinates loan, or *offshore loans.* The increasing of equity is also important to be clarified whether it is in the form of an increase of additional paid-in capital, *initial public offering (IPO)*, *right issue* or retained earnings.
3. It is important to distinguish the types of distributed loan (investment loan, working capital loan, or consumption loan), in order to clearly address the optimization of bank's intermediary function, particularly in supporting the real sector growth.
4. Further model development is required since the determination coefficient of the model in this paper is considerably low.

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