BANK INDUSTRY OPENNESS IN INDONESIA: CONTROL OF AGENCY PROBLEMS

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Abstract

Indonesian banking sector has recently been suffering from bad debt and liquidity problems. Crisis since 1997 has impoverished bank's performance and reduced shareholder wealth. The deterioration of bank's performance with respect to bank's purpose to be an intermediation agent also affects the wealth of stakeholders, especially depositors. Agency problem has severe effects on bank's performance. Openness policy especially in bank ownership structure also has an effect on competition between banks. Globalization forces early openness on banking industry, therefore foreign ownership in banking industry becomes usual in Indonesia. Central bank has an obligation to support citizen with variety of banking services, without sacrificing security. Although Indonesia has several prospective domestic-owned banks, however crisis weakened national banking industry. Therefore, type of ownership should have difference effect on agency problems controlling mechanism. This research examines agency theory arguments in banking industry by analyzing the effect on firm specific variables, which are managerial stock ownership, leverage, dividend yield, and type of ownership. Agency costs proxy by earnings volatility, manager's portfolio diversification losses, bank size, and standard deviation of bank equity returns. Types of ownership are domestic-owned banks, and foreign-owned banks. It is one of the first researches that examine the determination of financial policy variables based on agency theory perspective in banking industry. This research examines the largest 51 banks during the period of 1999-2004 using quarterly financial report. The result showed bank size and a measure of manager's portfolio diversification opportunity set affect the bank's level of managerial stock ownership, leverage, and dividends. The result also confirms the difference effect of type of banks ownership to controlling mechanism of agency problems.

Keywords: bank, agency, ownership, leverage, dividend

Introduction

Several studies have examined corporate leverage and dividend policy to analyze the effect of agency costs on managerial decisions. Agency costs arise from the conflict of interests among corporate managers, stockholders, and bondholders. To control the agency costs, corporate managers make decisions on the appropriate

mixture of outside debt and equity financing, dividend policy, and their own common stock holdings. For instance, as debt-to-equity ratio increases, so will their own common stock holdings since the likelihood of need for additional equity falls. In general, it has been argued that leverage reduces agency costs associated with outside equity (Jensen and Meckling 1976). Managerial stock ownership and dividends also reduce equity agency costs by lowering the boundary between owners and managers (Jensen and Meckling 1976; Rozeff 1982; Easterbrook 1984).

Other agency studies in banking have focused on the expense-preference behavior of banks. For instance, Hannan (1979) and Hannan and Mavinga (1980) regress bank expenses on a set of factors which are proxies for agency effects. Their studies examine agency issues in the banking industry by analyzing the leverage and dividend policy of those firms. The technique follows Crutchley and Hansen (1989) who develops this methodology using manufacturing companies.

The banking industry provides a unique setting to examine the presence of agency costs due to the existence of public regulation. As regulation increases, less than perfectly competitive market exists and nonprofit-maximizing behavior will be expected. Agency problem in banking industry is indeed more complicated, and it becomes more apparent in the case of state-owned banks. Ownership is the first determinant of agency problem in the banking industry in which principal and agent cannot be clearly defined. Theoretically, state-owned banks are owned by Indonesian people. The society as a whole (principal) cannot manage the country themselves, but they entrust and authorize a ruling government (agent) to manage the country, including the banks, on their behalf. The government then appoints professionals (agents) to preside over the banks. Hence, the principal-agent relationship is so lukewarm that moral hazard may be committed by the agents. Furthermore, the diffusion of ownership within large commercial banks makes the banking industry an ideal setting for agency theory testing. Indeed, the diffusion of ownership increases the cost of monitoring managerial activities and might lead to higher agency costs. Besides the ownership problem, the banks find another agency problem. They raise money from society (creditors) in the form of deposits. The creditors in this case are indeed lacking in monitoring the owners (principals) and bankers (agents), thereby increasing the possibility of moral hazard.

Another factor that distinguishes the banking industry from the others is the existence of deposit insurance. With this safety net in place, bankers may increase their risk exposure and vary the capital structure mix accordingly. Prior deposit insurance systems created a moral hazard problem since all banks used to pay the same and flat insurance premium, regardless of the riskiness of their operations. Current risk-based premium form of deposit insurance has decreased, but yet to eliminate, this dilemma. Risky banks may use insured deposits to make higher risk investments than they otherwise may have made. Banks have an incentive to increase financial risk by issuing insured deposits to achieve higher-yield investments. Albeit its significant

impact, the deposit insurance system is unfortunately not our focus in this research such that only a few explanations will be further discussed. We suggest that this particular issue is of importance to subsequent researchers on this realm to be taken into account.

This research examines the effects volatility of earnings, bank size, standard deviation of returns, and manager's portfolio diversification as proxy of agency cost, and type of bank's ownership (foreign and domestic) as proxy for openness in banking sector, on three independent variables which are leverage, dividends, and managerial stock ownership.

Literature Review and Hypotheses Development

Agency costs arise from the fact that corporate decisions are delegated to agents (managers) who perform on behalf of firms' principals which are stockholders and bondholders. As outlined by Barnea, Haugen, and Senbet (1985), some decisions made by agents trying to maximize their own personal welfare may not be in the best interest of principals. For instance, managers may consume excessive amount of perquisites, or managers may sell securities to outsiders at undervalued prices.

According to Crutchley and Hansen (1989), agency theory suggests at least three specific ways to reduce agency costs associated with equity: (1) increasing managerial stock ownership, (2) increasing dividends, and (3) increasing leverage. Ismiyanti and Hanafi (2004) test the interdependence of leverage, dividend, and managerial ownership. They show that bonding and monitoring mechanisms through debt, dividend, and managerial ownership effectively control the agency problem. Their sample is manufacturing companies listed on the Jakarta Stock Exchange.

Agency theory suggests that conflict of interest can be reduced if owners have enough power to control the operation of the bank. Other types of ownerships commonly found in developing countries are foreign-owned banks and joint venture-owned banks. Previous studies find that foreign-owned banks outperform domestic-owned banks in developing countries (Goldberg, Dages, and Kinney 2000; and Havrylchyk 2003). The results suggest that reputable foreign-owned banks may be able to implement controlling mechanism of agency problems better than do domestic-owned banks.

In Indonesian case, the types of ownerships can be classified into three major groups: private domestic-owned banks, state-owned banks, and foreign-owned banks. This research divides types of ownership into two groups. Private domestic-owned banks and state-owned bank calls domestic-owned banks, and foreign-owned banks and joint venture-owned banks calls foreign banks. This research argues that unpretentious category will support Goldberg, Dages, and Kinney (2000)

and Havrylchyk (2003). The result expects that two category (domestic and foreign banks) will shows the differences between type of ownership on the controlling mechanism of agency problems. Supriyatna (2006) showed that ownership structure have significant effect on the probability banks implement good corporate governance. Foreign-owned banks have high pursuance on regulation than domestic-owned banks. Tandelilin et al (2005) also showed that state-owned banks have worst performance than domestic-owned banks. Foreign-owned banks have higher financial performance among all.

Managerial Stock Ownership

When managers increase their common stock ownership in the firm, their interests are more closely in accord with the interests of the owners. As managers increase their holdings of common stock of the firm, the probability that managerial decisions are in the best interest of stockholders increases and thus, equity agency costs decline. However, managers may demand higher compensation as their personal wealth becomes less diversified.

Ownership is one of the bank policies analyzed in this study. In the context of banking industry, ownership is such a complicated issue that it potentially creates agency problem. This problem is more apparent for state-owned banks. Theoretically, the owners of state-owned banks are Indonesian citizens. However, it is impossible for the people to manage the banks themselves; hence they hand over the right to manage the banks to Indonesian government. The government subsequently appoints bankers or professionals to operationally run the banks. Accordingly, Indonesian people as the owners obviously do not have a sufficient chance to monitor and control their agents. Beside state-owned ownership, there are also private-domestic and private-foreign owned banks.

This research argues that firms with foreign-owned will have lower agency problems than private domestic-owned banks. Goldberg, Dages, and Kinney (2000) and Havrylchyk (2003) support the arguments and additional arguments provide by Tandelilin et al (2005). Tandelilin et al (2005) showed that foreign-owned banks have higher performance and subservience to regulation; therefore they have better mechanism to control agency problem than domestic-owned banks. Substitution hypothesis of agency theory argued that firms concerns on the agency cost that emerge from agency reduction mechanism. This research argues that foreign-owned banks will have lower managerial ownership than domestic-owned banks because they have low agency problems. Foreign-owned banks less needs for managerial ownership as controlling mechanism of agency problems than domestic-owned banks.

Other agency studies suggest that increased earnings volatility (*Earnvol*) raises bankruptcy costs and increases the agency costs associated with debt.

Consequently, a positive relationship between earnings volatility and managerial common stock ownership (*Ownership*) is expected as banks rely more on managerial equity ownership to help reduce those debt-related agency costs. In the case of banks, other factors can affect this expected relationship. For instance, even though higher earnings volatility raises bankruptcy and debt agency costs, bank's managers may not change their stock ownership on account of the fact that deposit insurance might offset the effect of potential bankruptcy. As a result, the existence of deposit insurance can inhibit the possible effect of agency costs on some of the financial policy variables of commercial banks. A negative association between *Bank size* and *Ownership* is expected. As the size of the bank increases, the ability of its managers to control a significant proportion of the outstanding shares declines, the liquidity costs (of holding common stock of the bank) increase, and the ability of managerial ownership to reduce agency costs for a large number of shareholders declines.

Previous agency arguments suggest a positive relationship between the managerial common stock ownership (*Ownership*) and the proxy for manager's portfolio diversification opportunity set (*Diverse*). As the losses resulting from holding a less diversified portfolio increase, and the *Diverse* proxy decreases, managers then decrease their holdings of common stock of their own bank.

Leverage

The use of increased level of debt in the capital structure of firm reduces the need for equity and accordingly reduces the agency costs associated with equity. Again, the increased use of leverage has its costs, in this case in the form of increased agency costs associated with debt (potential conflict between stockholders and bondholders). For instance, stockholders may be encouraged to engage in high risk activities that transfer wealth form bondholders to stockholders.

Leverage is another factor creating agency problem in the banking industry. Banks highly count on leverage, such as third-party deposits, to make money, such as lending the funds as loans. In this case, the creditors are the depositors, and they are less likely to be able to control the bankers (agents) with respect to the risk level to which the bankers create profits and values.

Leverage as controlling mechanism of agency problems will lower for foreign-owned banks than domestic-owned banks. Foreign-owned banks support with excessive fund than domestic-owned banks. Meanwhile their low agency problem also decreases the need for leverage as controlling mechanism. This research argues that substitution hypothesis of agency theory will hold as firm more concern on the cost to control agency problems.

Earnings volatility and leverage ratio are expected to be inversely related. As the volatility of earnings increases (*Earnvol*), the bankruptcy costs of the firm increase and less debt (*Leverage*) will be used to reduce the agency costs associated with debt (Friend and Lang 1988). However, with the existence of deposit insurance, banks may be motivated to go for broke and reserve the expected relationship (Herring and Vankudre 1987). This research argues that earning volatility will have negative effect on leverage.

According to Ang, Chua, and McConnell (1982), as the size of the firm increases, the marginal administrative costs of bankruptcy decline, and the agency costs associated with debt decline. Hence, a positive relationship between *Banksize* and *Leverage* is expected. Crutchley and Hansen (1989) argue that the *Diverse* variable should have a negative effect on *Leverage*. As the managerial losses from holding a less diversified portfolio increase and the Diverse measure decreases, the use of leverage will be increased so as to try to reduce the higher agency costs associated with equity.

Dividends

When a firm increases dividend payment, it increases the probability that it will need to raise external equity to finance such increased payment (Easterbrook 1984; and Rozeff 1982). If external capital is raised, managerial actions will be closely monitored by outsiders (for instance, the SEC, or providers of capital), and managers might perform in the best interest of the stockholders. As in the case of increased managerial stock ownership, the use of this option is not costless since transaction costs are incurred when raising external capital.

Dividend as bonding mechanism will forgo investment opportunity because dividend source is internal cash flow. Therefore foreign-owned banks that aggressively expand their market in Indonesia will have lower dividend to support investment opportunity. This argument supports by the lower level of agency problems in foreign-owned banks than domestic-owned banks. Some of the previous agency studies unable to report a significant relationship between volatility of earnings and common stock dividends. However, Crutchley and Hansen (1989) argue that in order to reduce agency costs caused by an increase in earnings volatility (*Earnvol*), firms could rely on the use of dividends (*Dividend*) since this would trigger an increased monitoring activity by outsiders.

As Hansen (1986, 1989) points out, as the size of the firm increases, flotation costs decline and firms accordingly may utilize dividends more to control the agency costs. Hence, a positive relationship is expected between *Banksize* and *Dividend.* Crutchley and Hansen (1989) argue that the *Diverse* variable should have a negative effect on *Dividend*. As the managerial losses from holding a less diversified

portfolio increase and the *Diverse* measure decreases, the use of dividends will increase so as to try to reduce the higher agency costs associated with equity.

Predicated upon the aforementioned discussion, twelve hypotheses are developed:

H_1 : The higher earnings volatility the higher managerial common stock ownership.

H_2 : The bigger size of bank the lower managerial common stock ownership.

H_3 : The higher diversification opportunity set the higher managerial common stock ownership.

H_4 : The portion of managerial ownership in foreign-owned banks lower than private domestic-owned banks.

H_5 : The higher earnings volatility the lower leverage.

H_6 : The bigger size of bank the higher leverage.

H_7 : The higher diversification opportunity set the lower leverage.

H_8 : The leverage in foreign-owned banks lower than private domestic-owned banks.

H_9 : The higher earnings volatility the higher dividend.

H_{10} : The higher size of bank the higher dividend.

H_{11} : The higher diversification opportunity set the lower dividend.

H_{12} : The dividend in foreign-owned banks lower than private domestic-owned banks.

Research Method

Sample used is 51 banks in Indonesia, listed and non-listed banks, whereas period to be observed is from 1999 to 2004, quarterly data. 1224 firm's year observation was collected between periods of analysis. In this research, the effect of various proxies for agency costs on the three mentioned bank policies: leverage, dividends, and ownership, will be examined. The equations below try to regress each of those policies on specific bank characteristics:

$$MOWN_j = \alpha_1 + \beta_{11}EV_j + \beta_{12}BS_j + \beta_{13}DV_j + \beta_{14}TO_j + e_{jo}$$

$$LEV_j = \alpha_2 + \beta_{21}EV_j + \beta_{22}BS_j + \beta_{23}DV_j + \beta_{24}TO_j + e_{jl}$$

$$DIV_j = \alpha_3 + \beta_{31}EV_j + \beta_{32}BS_j + \beta_{33}DV_j + \beta_{34}TO_j + e_{jd}$$

Proxies for Agency Costs

To test the existence of agency costs, agency theory suggests that the following four variables should be used: (1) earnings volatility, (2) bank size, (3) manager's diversification losses, and (4) flotation costs. However, since the true measures are unobservable, proxies for the four variables are used. The standard deviation of return on assets from 1999 to 2004 is used to measure earnings volatility, and is indicated by EV.

$$EV_j = Std\left[\frac{Ibda_j}{Assets_j}\right] \qquad (1)$$

where: Ibda equals income before depreciation and amortization and $Assets_j$ equals total assets. As the volatility of earnings increases, the chance of bankruptcy increases, and firms will use less debt in the capital structure mix. As the costs of using debt increase (decrease), the benefits of using equity as a source of financing would increase (decrease) the proportion of equity. As a result of this shift to equity, banks would be expected to pay more dividends and managers would increase their holdings of common stock in the bank.

The size of bank (BS) is indicated by ratio of fixed asset to bank's total assets.

$$BS_j = \frac{Fixed\ assets_j}{Total\ assets_j} \qquad (2)$$

As the size of the bank increases, managers would be expected to hold a smaller percentage of common stock due to a substantial increase in the dollar amount of the required investment. Being faced with such a dramatic increase in the amount of initial purchase, managers would hold a smaller proportion of the common stock outstanding, as the size of the firm increases. In addition, for a given debt level, as the size of the bank's assets grows, the potential for bankruptcy declines, allowing an increase in the mix of debt to equity. Finally, larger banks have greater access to financial markets to raise additional equity funds, leading to lower expected flotation costs for new common stock and being a justification for an increased dividend payout ratio.

The bank's equity risk premium, as defined below, divided by total equity risk, is used as a proxy measure for diversification benefits surrendered by managers investing in a given bank's equity. Diverse variable (DV) is shown by:

$$DV_j = \frac{EquityReturn_j - R_f}{Equitypershare_j} \quad (3)$$

where: $EquityReturn_j$ equals to equity return per share (quarterly data) from 1999 to 2004 data, R_f equals risk-free return, $Equitypershare_j$ equals the equity value per share (quarterly data) over the same six-year period.

The underlying basis for this variable is the portfolio theory, which postulates that as managers increase (decrease) their holdings of a particular firm's equity, certain costs (benefits) should occur. Another variable that relates to agency costs is the flotation costs of issuing common stock. The larger the equity return of the stock, the higher the flotation costs of issuing additional common stock will be, and managers would be expected to pay out less dividend to avoid this outcome. The financial market's overall perception of high volatility as a signal of high risk is the justification for retaining more funds and paying out less of the earnings stream as dividends. Historical flotation costs, if observable, are the preferred measure. However, this variable is not readily available, and is instead proxy by equity return of quarterly data, as defined in Equation (3) and the size of bank (BS_j), defined in Equation (2).

Types of ownership as proxy for openness will use dummy variable that divide between foreign-owned banks and domestic-owned banks. Dummy TO=0 for firm with foreign-owned banks ownership, and TO=1 for firm with domestic-owned banks ownership.

Control of Agency Problems Variables

The three financial policy variables are: (1) common stock ownership by management (MOWN), (2) the outside leverage ratio (LEV), and (3) the dividends-to-common equity ratio (DIV). Firm's common stock held by officers and directors is obtained using the following values:

$$MOWN_j = \frac{Managerial\ ownership}{Total\ stock outstanding} \quad (4)$$

where: $O\&DShares_{jn}$ equals the total number of shares held by officers and directors (*Disclosure*); $Totshares_{jn}$ equals the total number of shares of common stock outstanding (*Disclosure*).

The degree of outside leverage, ratio of outside debt to total outside financing (Jensen and Meckling 1976) is:

$$LEV_j = \frac{L_t debt_{jn}}{L_t debt_{jn} + MVCSjn^o} \quad (5)$$

where: $L_t debt_{jn}$ equals total long-term debt, $M_{VCSjn}{}^o$ equals market value of common stock held by non-managers. Total dividends to the total market value of common stock are found by:

$$DIV_j = \frac{Comdiv_{jn}}{Mprices_{jn}} \quad (6)$$

where: $Comdiv_{jn}$ equals total common stock cash dividends, and $Mprices_{jn}$ equals year-end closing price of common stock.

Table 1 depicts the expected impact of the four proxies for agency costs on each of the three bank policies. The table basically summarizes the explanation for the hypothesized influence of proxies for agency costs on bank policies.

Table 1
Test of Hypotheses

POLICIES	AGENCY COST PROXIES			
	EV	BS	DV	TO
MOWN	H_1: $\beta_{11} > 0$	H_2: $\beta_{12} < 0$	H_3: $\beta_{13} > 0$	H_4: $\beta_{14} > 0$
LEV	H_5: $\beta_{21} < 0$	H_6: $\beta_{22} > 0$	H_7: $\beta_{23} < 0$	H_8: $\beta_{24} > 0$
DIV	H_9: $\beta_{31} > 0$	H_{10}: $\beta_{32} > 0$	H_{11}: $\beta_{33} < 0$	H_{12}: $\beta_{34} > 0$

Results and Discussion

This research employs the multiple linear regressions to examine twelve hypotheses. Each variable was preliminarily tested to find out whether any violations against classical assumptions prevail. The following table describes the research variables.

MOWN variable has a maximum value of 0.25 with an average of 0.0032. DIV variable reaches the lowest minimum score of 0 compared to that of EV variable of -0.8560. DIV has a relatively high standard deviation of 0.9015, followed by the standard deviation of DV 0.2926, LEV variable with 0.0962, EV with 0.0618, and MOWN variable of 0.0284.

Table 2
Descriptive Results

Year	MOWN	LEV	DIV	BS	EV	DV
Min	0	0.9967	0	0.0388	-0.8560	0.0005
Max	0.25	0.9569	0.3769	0.9569	0.7268	0.9993
Mean	0.0032	0.9345	0.2187	0.4046	0.0121	0.4852
Std	0.0284	0.0962	0.9015	0.3044	0.0618	0.2926

Table 3 below shows the results of linear regression with three equations in order to examine the twelve research hypotheses. The three linear regression equations are tested to find F-statistics. The regression models of this research are constructs with three equations with the same independent variables. None of the independent variables are simultaneously use as dependent variables. Therefore, this research is less likely inappropriate to use simultaneous regression or even seemingly unrelated regression model because there is unclear categorization between endogenous and exogenous variables. The findings show that R^2 of Managerial Ownership equation is 14% while that of Leverage equation is 6.6%, and that of Dividend equation is 7.6%.

The table indicates that the influence of earnings volatility on managerial ownership (H_1) is negative, and has a value of -0.059 which is insignificant. It means that the finding does not fulfill the prediction although the result per se is not significant. Meanwhile, bank size negatively and significantly influences managerial ownership (H_2) with a value of -0.025, thereby corresponding with the prediction. Subsequently, the effect of diversification on managerial ownership (H_3) is negative with a value of -0.007, meaning that the finding does not fit with the prediction although the finding itself is not significant. Type of ownership coefficient is 0.115 (H_4), suit the prediction and significant.

The influence of earnings volatility on leverage (H_5) with a value of 0.025 is significant and in line with the prediction. Meanwhile, the effect of bank size on leverage (H_7) has a value of 0.038 and is significant, which corresponds with the predicted direction. Furthermore, diversification positively influences leverage (H_7) with a value of 0.009. This finding does not fulfill the prediction; nevertheless, the result is not significant. Type of ownership coefficient is 0.261 (H_8), suit the prediction and statistically significant.

The influence of earnings volatility on dividend (H_9) with a value of 0.004 is significant and in line with the prediction. However, the effect of bank size on dividend (H_{10}) with a value of -0,031 does not correspond with the prediction although the result per se is not significant. Eventually, diversification positively influences dividend (H_{11}) with a value of 0.023. It indicates that the result does not meet the prediction although the result is not significant. Type of ownership coefficient is 0.065 (H_{12}) and statistically significant.

Table 3
Regression Results

	Variable	Predicted	Coefficient	
Managerial Ownership				
	Constant		0.002	
H_1	Earning Volatility	+	-0.059	
H_2	Bank Size	–	-0.025	**
H_3	Diverse	+	-0.007	
H_4	Type of Ownership	+	0.115	***
	F		5.236	***
	R^2		14%	
Leverage				
	Constant		0.903	***
H_5	Earning Volatility	+	0.025	*
H_6	Bank Size	+	0.038	*
H_7	Diverse	–	0.009	
H_8	Type of Ownership	+	0.261	***
	F		22.031	***
	R^2		6.6%	
Dividend				
	Constant		0.107	
H_9	Earning Volatility	+	0.004	*
H_{10}	Bank Size	+	-0.031	
H_{11}	Diverse	–	0.023	
H_{12}	Type of Ownership	+	0.065	**
	F		27.425	***
	R^2		7.6%	

Note: *) 10%; **) 5%; and ***) 1% significant level

This study documents that most of the hypotheses examined yield findings which are significant and in line with the predicted directions, whereas hypotheses that result in findings which do not meet the prediction are statistically insignificant. Hypothesis 1 proves that earnings volatility does not influence managerial ownership. Practically, in a bank with high earnings volatility, managers will reduce their managerial ownership. It indicates that executives also pay attention to the risk of bank should they invest in the company they are helming.

The examination result of Hypothesis 2 shows that bank size negatively influences managerial ownership, and this finding is evidenced to be statistically significant. The higher the bank size, the higher the incentives for management to decrease their managerial ownership. This evidence shows that the gains from ownership are lower than the managerial compensation earned on account of increased company size.

The test of Hypothesis 3 indicates that the effect of diversification on managerial ownership is negative and not significant. This practically proves that banks with high risk premium level will render management less willing to hold managerial ownership. The management has a high tendency to avoid banks having high risk premium since engaging in and owning such banks will directly lead to higher risk assumed. The management's low capability of diversification is the main rationale behind the managerial reluctance to own banks faced with high risk premium.

Hypothesis 4 shows positive effect of type of ownership to managerial ownership. Foreign-owned banks have lower level of managerial ownership than domestic-owned banks. Therefore the argument of low level of agency problems in foreign-owned banks is hold. The examination of Hypothesis 5 shows that banks with high earnings volatility are inclined to have a high leverage level. This finding substantiates the argument that highly risky banks also employ huge leverage. Hence, banking industry, which is specifically renowned as a high leverage industry, will assume a higher level of risk than will other industries.

Subsequently, the examination finding of Hypothesis 6 describes that the effect of bank size on leverage is positive and significant. This result also enhances the argument that banking industry which typically has big-size companies will be supported by a high leverage level. Accordingly, this finding is also in line with the argument from Hypothesis 5 that the banking industry is basically an industry anchored by a high debt ratio in common practice.

The result of Hypothesis 7 testing shows that the influence of diversification opportunity set (Diverse) on leverage is practically positive; however, this result is statistically insignificant. This finding may be caused by high risk premium of banks as the banking industry is a high-leverage industry. Hypothesis 8 showed positive sign of coefficient, and concluded that foreign-owned banks have lower level of leverage than domestic-owned banks. This result supports the substitution of agency theory. Foreign-owned banks will need low level of leverage to control their agency problems because they have lower level of agency problems than domestic-owned banks (Tandelilin et al, 2005).

The examination of Hypothesis 9 shows that earnings volatility has a positive influence on dividend. This causal relationship fits with the prediction, meaning that stockholders will expect high dividends as the compensation for the high risk of banks. Subsequently, the test of Hypothesis 10 finds that bank size has a significantly negative influence on dividend. It indicates that bank size is only supported by the level of leverage (in line with H_6) such that dividend payment will be low. The majority of cash is utilized for fulfilling the liabilities to pay back leverage such that it does not suffice to pay dividends.

Eventually, the finding of Hypothesis 11 testing shows that the level of diversification opportunity set (Diverse) positively and significantly influences dividend. This indicates bank having a high risk premium will distribute high dividends. Stockholders expect a compensation for the high level of risk through high dividend payment. This finding is consistent with the result of Hypothesis 9 testing. Hypothesis 12 holds and showed that foreign-owned banks have lower level of dividend than domestic-owned banks. Bonding from dividend less needed in foreign-owned banks than for domestic-owned banks.

This research finds banks' high level of risk is mostly contributed by the high level of leverage. The high risk premium has to be compensated by high dividend payment. Several hypotheses are indeed insignificant; nevertheless, the evidence from hypotheses testing substantiates each other. Bank size is also influenced by the level of leverage, which then has a positive comparison and direction with banking risk. Banking industry that typically has a characteristic of high leverage virtually influences the size and risk of banks. The three variables are influencing each other, and have positive relationships. Subsequent research should examine the simultaneous relationships among leverage, earnings volatility, and dividend.

Globalization through openness in banking sector will have positive effect on Indonesian banking industry. Domestic-owned banks (private and state-owned) will force to compete in global market. However, Indonesian central bank should provide sufficient regulation to controls banks behavior and support good corporate governance. Several research including this research support the need for openness in banking sector. This research suggests domestic-owned banks to reduce their agency problems. Agency problems will diminish banks performance and eventually decrease people trust on Indonesian banking sector.

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