OWNERSHIP STRUCTURE, RISK AND THEIR IMPACT TOWARDS PERFORMANCES IN INDONESIAN COMMERCIAL BANKS

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Abstract

The purpose of the study is to investigate relationships between ownership structure, risk and performance in Indonesian commercial banking industry. This study examines whether the type of ownership has moderating effect on these relationships, and whether ownership structure is a key determinant of risk taking behavior that effect bank's performance in terms of ROA. The data used are banks quarterly balance sheet and income statement from the publication of Bank Indonesia. Methodology for data analysis is time-series regression analysis. This study finds that in Indonesia commercial banking ownership structure is homogeneous, where owners have strong controlling rights. But the relationship between ownership and risk taking behavior depends on the role of the largest owner in managing the firms and regulations. Capital requirements do induce and support bank's soundness, but do not reduce bank risk taking. Furthermore, interestingly size of bank's asset also support stability but induce aggressiveness in risk taking that influence ROA. This study also finds negative relationships between risk management and bank's performance in terms of ROA.

Keywords: ownership structure, risk-taking, aggressiveness, bank soundness, ROA.

INTRODUCTION

The studies of ownership structure, risk and performance have been the subject for many scholars around the world. However, interestingly the end results of the studies are varied, that probably are caused by the effect of different regulations and the nature of the industry (Magalhaes, Gutierez and Tribo, 2008)

As can be seen in Figure 1 that the Indonesian economy in the early 1990s, started to grow at an accelerated pace. By mid 1990s, the stage of the economy probably has reached its highest level since Indonesia has gained its independence. The growth rate of the Indonesian GDP was also at its peak (refer to Figure 2). One of the reasons why the economy have performed in such a way was due to the deregulation of the banking industry by the central government at that time, that liberalized the banking sector in order to help stimulate the nation's economy (Sato, 2005).

**Figure 1 Indonesian GDP 1967-2008 (in US Dollars)**
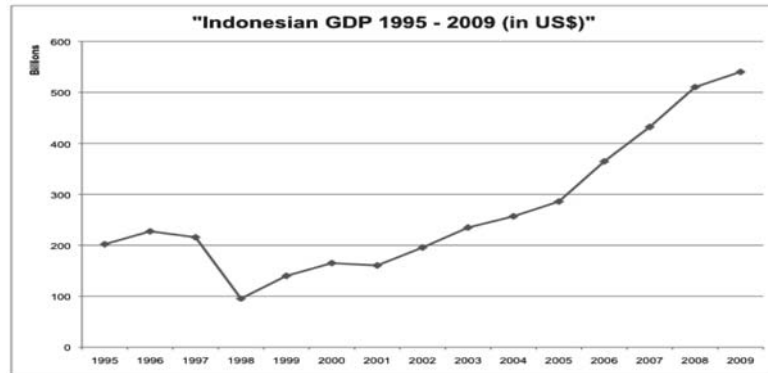
Source: World Bank, World Development Indicators

Unfortunately, liberalizing the banking sector was not supported by a powerful supervisory institution and clear regulation to control and supervise the industry (Tandelilin, *et al* (2007). Therefore despite the strong economic indicators, the 1997 Asian financial crisis had caused the Indonesian banking industry to collapse. Rokhim (2005) pointed out, that the Indonesian economic crisis was not only caused by economic factors, but also mixture of domestics and international events. Mismanage-ment in financial sector that caused weak banking infrastructure and regulation supervising the banking industry, also contributed to the collapsed. At the beginning, the crisis only affected deficient banks. However, the *systemic effect* also caused solid banks to become vulnerable and in danger to collapse. Indonesia's banking crisis back in 1997/1998 was probably the worse banking crisis that ever happened in many country in the world.

Figure 2 Growth Rate of Indonesian GDP 1967 - 2008
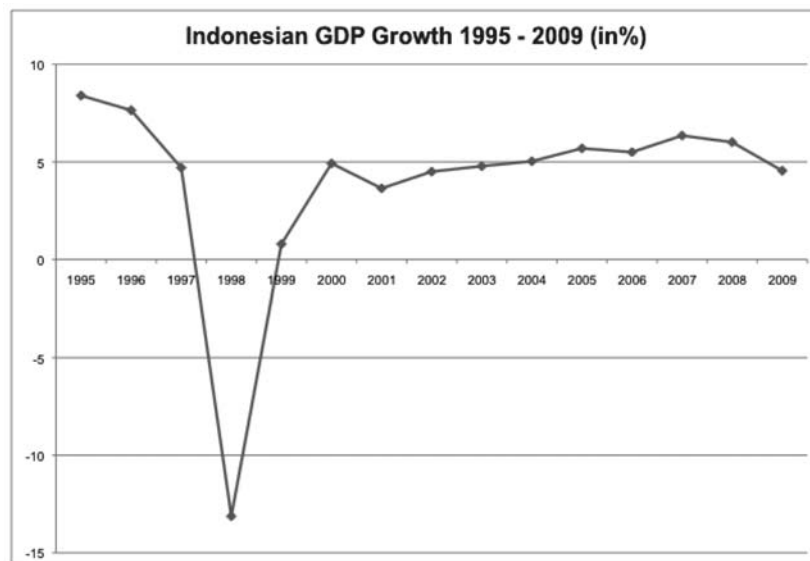
Source : (World Bank, World Development Indicators)

Based on those phenomena, this research has the aim to investigate whether there are any significant differences in Indonesian commercial banking towards risk and performance with, different ownership structure and backgrounds. There were three research questions raised in this study. *First* is the effect of different ownerships in Indonesian commercial banks. *Second*, what are the implications cause by the effect of different ownership towards risk and performance. And *third*, under all the circumstances in the first two questions, what is the inter-relationship between risk and performance.

LITERATURE REVIEW

Indonesia as an emerging country comprises, the banking industry to be a primary role and be the source of fund for economic development[1]. During the 1997/1998 the financial crisis, has caused the Indonesian banking industry collapsed and was forced to be reformed. The reformation of the banking sector was part of the main objectives from International Monetary Fund (IMF) that was appointed as the leading institution for the nation's economic recovery program. One of the major changes in the banking reformation program was the ownership structure, particularly the ownership structure of the private banks[2]. Furthermore, financial institutions and bank supervision system also underwent major reconstruction[3].

There is some evidence that banks are forced to change their ownership structure due to financial constraints. For example in the early 2000, most of central and eastern European countries went through rapid ownerships changes due to the effect of the dissolved of the Soviet Union. Succession left banking system in the region in disarray. Connections with the Russian banking system were not severed immediately and entry of small, under-capitalized banks added the fragility of the financial system (Bonin, Hasan and Wachtel, 2004). The banking ownership structure was one of the key elements which underwent major changes during the Indonesian banking industry reformation (Sato, 2005). After more than a decade since the banking reformation had started, it is very important now to comprehend and gain knowledge from the implication and effect of the changes in bank ownership structure.

The relationship between owners and management is crucial (Jansen and Meckling, 1976; Demsetz and Lehn, 1985). Especially nowadays, the composition of bank owners in Indonesia comes from various backgrounds (i.e. government, business groups, family-owned business, foreign, etc). There are indications that the variability of bank owners can affect bank performance and its behavior in taking risk[4]. In Europe, Iannotta, Nocera and Sironi (2007) conducted a research study to find significant differences in performance and risk of European banks with different ownership structure. The results confirmed that there are significant differences in performance and risk although the signs are not always consistent as expected. Compare to banks with dispersed ownership are found to have higher operating risk per euro which confirmed with the agency theory (Jensen and Meckling, 1976).

Broader study was conducted by Magalhaes, Gutierrez, and Tribo (2007). The research investigated the effect of owner-

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[1] See La Porta, Lopez-De-Silanes, and Shleifer, (2002); Lang and So, (2002)

[2] Private banks in Indonesia prior the 1997 crisis were mainly family-owned business or conglomerate business related

[3] Bank Indonesia (Central Bank) was part of the government and not an independent institution

[4] Banks in Indonesia are the main channel of national economic funding; therefore owner's background determined the role and risk taking level of the banks.

ship concentration on the risk and performance of commercial banks, by controlling the shareholders protection laws, and other country and bank specific traits (Chrystal, Dages and Goldberg, 2002). The the analysis showed that ownerships concentration is more important to explain performance than risk taking. As monitoring by shareholders increases, managers have less discretion and initiatives to seek a new investment opportunity which reflects in decreasing performance (Magalhaes, Guitierrez and Tribo, 2008). Furthermore, the above study also found banks behavior in the same way as non-financial firms, because they are subject to similar corporate governance mechanism and same agency problems.

Another research also was conducted in India by Kalluru (2009). The results of the study showed there are significant differences in the performance and risk among commercial banks in India. The foreign banks seem to be the most profitable compare to state-owned banks and domestic private banks. This better performance is caused by well capitalization and lower cost of funds. The risk taking analysis of this study also showed foreign commercial banks in India have higher non-performing loan compare to other banks.

In Indonesia by far, only few studies put more focus in analyzing the correlation between ownership structure and risk management. Previous studies by Indonesian scholars, were mostly focused in analyzing the correlations between ownership structure and performance (Hadad *et al*, 2003) or ownership structure with corporate governance (Tandelilin *et al*, 2007). However there are not many studies analyzing the Indonesian banking sector that focus in the relationship between ownership, risk and performance.

The empirical results from a study by Hadad *et al* (2003) analyzing the correlation between ownership structure and performance in Indonesian banking industry showed that, ownership structure has no effect on performance. Furthermore the results also consistent with the *agency theory* by Jansen and Meckling (1976), that bank performance is determined by managers based on performance contract agreed between bank owners and managers. Publicly listed banks in Indonesia performed slightly better compared to non-listed banks. The other study by Tandelin *et al* (2007), found that there is a negative relation between performance and risk. It means that banks perform better when they are able to reduce their risk exposure.

The nature of banking business in Indonesia has changed tremendously after the crisis and particularly over the past three years[5]. Especially it is happened when the foreign investors became one of the key actors in banking ownership in recent years. The type of corporate culture, know how, and advance technology that these foreign investors may have brought, change the way how banks to do their businesses (Crystal, Dages and Goldberg, 2002).

As the Indonesian banking industry is essential for national economic development, taking steps to avoid and to prevent another collapse of the banking sector are very much necessary. This study will give preliminary indicators about the soundness of Indonesian banking industry.

The first objective of this research is to find what type of ownership structures and types in the Indonesian commercial banks, and their impact in bank's business operation. The Indonesian financial system since prior the 1997 financial crisis has underwent five phases of development (Hamada,

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[5] Foreign entry into the Indonesian commercial banks was significantly increased as the result from the implementation of Government Act No. 29 (allow foreign banks to own up to 99% of ownership within a bank) and improving Indonesian macroeconomic.

2003). Furthermore, since 2004 Indonesia can be said has entered phase sixth[6], which is the post crisis/restructuring period. One of the major changes during those six phases of development was the type of ownership structure (Sato, 2005). Previous study by Rokhim (2005) showed about how owners before the 1997 crisis have strong influence in business' decision making, particularly within the private domestic banks.

Recently, the government regulation give more incentive for foreign bank entry in the banking sector in order to improve national economic stability, by bringing new fresh capital that are needed and improving risk management techniques (Moreno and Villar, 2005). Therefore the second objective of this research is to learn the effects of different type of the most current owner-ship structure towards risk and perfor-mance.

Finally, the third objective of this research is to confirm the previous results from many studies about the inter-relationship between risk and performance. This study will try to test the result once again using slightly different parameters and under different business environment.

RESEARCH METHOD
Data

The analysis is performed on Indonesian commercial banking industry from year 2004 to year 2009. There were 115 banks in Indonesia at the end of the year of 2009. The total number of observations during the period of study was 630 observations.

Table 1 Number of Banks after Selection & Observations

All Samples	Banks	Total Observ.	Government Obsv	Regional Obsv.	Foreign Obsv.	Domestic Obsv.
	105	630	37	156	174	263
Year 2004	105	105	7	26	25	47
Year 2005	105	105	6	26	27	46
Year 2006	105	105	6	26	27	46
Year 2007	105	105	6	26	31	42
Year 2008	105	105	6	26	32	41
Year 2009	105	105	6	26	32	41

Source : Compiled by Author based on the statistical results

Method

In many case the data is performed using dynamic panel estimation such as Generalized Method of Moments (GMM), which consists of observations of historical, bank accounting and ownerships variable. Panel data techniques are able to mitigate the influence of spurious characteristics in the relation between managers and owners (Magalhaes, Gutierrez and Tribo, 2008).

Unfortunately, panel data analysis would not be suitable to be used for analysis[7]. Another approach to properly analysis this particular condition is required.

First, is to run a standard descriptive analysis for all data samples and data samples per bank ownership category. *Second*, is to run bivariate comparison test, where all variables between bank ownership categories are compared from one category

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[6] The phase sixth of bank's development in Indonesia marked the third ownership structure changed, where the government allowed foreign banks to become major shareholder in a private domestic bank. This policy implemented by the government in order to stimulate foreign direct investment, in order to bring in fresh capital that was needed for the bank industry.

[7] Panel data analysis would require constant number of data samples within each panel data category. Since the numbers of banks are fluctuating within the same category every year, panel data analysis is not suitable.

to another (one to one basis comparison). The method for both of these tests is using Independent sample *t*-test. *Third*, is to run multivariate comparison test following bivariate comparison test. In this test, each and all variables of four ownership categories are compared simultaneously. The method for multivariate comparison test is using One-Way Anova. If the results from One-Way Anova show any significantly different from the variables then the Duncan[8] multiple range tests will determine the order of how different between the ownership categories.

Testing the assumption is required before running the regression analysis. There are two assumption tests in this study, stationery assumption test (for dependent variables) and non-multicolinearity (for independent variables). Stationery assumption test is prerequisite from time series data analysis. Whereas the non-multicolinearity test is a correlation analysis for independent variables. If both assumption tests are justified then the regression analysis are possible.

Model and Variables
Proxy Variable for Ownership

Ownership structured is referred to the dispersion of ownership. More dispersed ownership structure means the shareholders have less power to control the banks. While concentrated ownership give shareholders more power to control the banks (Tandelilin *et al*, 2007). The higher the proportion of ownership, the stronger the controlling rights for the shareholders. Ownership control also determined the level off aggressiveness towards risk taking. Highly concentrated ownership structure in a bank, usually in most cases are more aggressive

compare to disperse ownership structure.

Since almost all ownership structure in Indonesian banking industry are concentrated (Bank Indonesia, 2010), therefore in this study the classification of ownership has to based on types of bank ownership which are government-owned, foreign-owned, and domestic-owned. The selection a bank into one of those classifications is from the controlling rights.

In the regression model for measuring the risk and performance, ownership classification[9] is represented as follows:

OS = dummy variable for the type of ownership structure

Gov = 1 if it is a government-owned bank or 0 if it's not

For = 1 if it is a foreign controlled bank or 0 if it's not

Reg = 1 if it is a regional and government-owned bank or 0 if it is not

Dom = 1 if it is a domestic bank or 0 if its not

Proxy Variables and Model for Risk

Risk management represents the managers risk taking behavior and how banks conducting and managing their risks. This study is focused to study the correlation between ownership and risk in terms of quality and aggressiveness. Furthermore how those correlations reflects towards banks soundness. The dependent variables for RISKS are:

- *LOSS* is measured the ratio of the non performing loan (NPL : is the ratio of total loan loss to total loan). *LOSS* is used in this regression because it represents the asset quality of a bank (Iannotta, Nocera and Sironi, 2007; Magalhaes, Gutierrez and Tribo, 2008).

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[8] Duncan's new multiple range test (MRT) is a multiple comparison procedure developed by David B. Duncan in 1955. Duncan's MRT belongs to the general class of multiple comparison procedures that use the studentized range statistic to compare sets of means.

[9] Ownership classification is based on the major or controlling shareholders.

- *Ln (q)* is the log asset volatility in order to measure the risk aggressiveness (Iannota, Nocera and Sironi, 2007; Magalhaes, Gutierrez and Tribo, 2008). Earning volatility consists of the standard deviation of the ratio earning before taxes to average total assets.
- *Ln (Z)* : the log of Insolvency risk in order to measure the bank's stability where Z is defined $Z_{jt} = ROA_{jt} + CAR_{jt}/StdROA_t$ (Iannotta, Nocera and Sironi, 2007; Magalhaes, Gutierrez and Tribo, 2008). Z is measured bank j at time t. The *StdROA* is the standard deviation of *ROA* within the Indonesian banking industry at time t.

The independent variables in order to measure risks are defined as follows :
- *OS* is the ownership type
- *GROWTH*: It is the percentage increase/decrease of bank commercial asset from previous year. This variable represents the growth rate of the banking industry.
- *YEAR*: is a dummy variable denoting the year of the bank on a particular time. ($y2002 = 1$, $y2003 = 1$,...........$y2009 = 1$ or zero otherwise)
- *CF* is the controlling factors of the banks which are related to management of banking operations. The controlling factors that are used in measuring RISKS are defined as follows:
  - *SIZE*: Larger banks have better risk diversification opportunities and thus can lower cost of funding. They would benefit from an implicit guarantee to decrease their cost of funding and allows them to invest in riskier assets. SIZE in this study is calculated by the log of the total asset (Iannotta, Nocera and Sironi, 2007; Magalhaes, Gutierrez and Tribo, 2008).

  - *LOANS*: the ratio of loans to total earning assets. Loans can be variable; some of them are more profitable than other types of assets (i.e. securities). But loans can also more costly compare to some other assets. In Indonesia channeling credits to own business subsidiaries (related lending) are common practice (Rokhim, 2005). During crisis lots of banks were in liquidity problems due to credits were channeled to related parties in non rentable/markup projects. Therefore *LOANS* should be a controlling factor in measuring risk Indonesian commercial factor (Iannotta, Nocera and Sironi, 2007).
  - *LIQUID*: The ratio of liquid assets to total assets. The number one risk factor in commercial banking is liquidity risk. Liquid assets reduce the bank liquidity risk (Iannotta, Nocera and Sironi, 2007).
  - *DEPOSITS*: the ratio of total deposits to total funding. Deposits include demand deposits, time deposits, certificate of deposits, savings, issued securities, prime capital and borrowing (Iannotta, Nocera and Sironi, 2007).
  - *CAPITAL*: The ratio of book values of equity to total assets. Indonesian banking system is under supervisory of Basel I and II, which require maintaining certain level of Capital Adequacy Ratio (CAR). The Central Bank required commercial banks to maintain CAR at 8% after the 1998 crisis and recently in 2007 increased to 12%. Konishi and Yasuda (2004) find that the implementation of CAR requirement reduces risk taking of commercial banking. CAR is a good proxy to measure banks soundness (Rokhim, 2005).

Therefore the regression model to measure *RISKS* is defined as :

o $LOSS_{jt} = a + bOS_{jt} + cCF_{jt} + dGROWTH_{jt} + eYEARt + \varepsilon$

o $Ln(\sigma)_{jt} = a + bOS_{jt} + cCF_{jt} + dGROWTH_{jt} + eYEARt + \varepsilon$

o $Ln(Z)_{jt} = a + bOS_{jt} + cCF_{jt} + dGROWTH_{jt} + eYEARt + \varepsilon$

Where *LOSS, Ln(σ), Ln(Z)* is measured at bank *j* at time *t*.

LOSS   : Non-performing loan
Ln (σ)   : natural log of the asset volatility
Ln (Z)   : natural log of the Z-score (insolvency risk)
OS   : ownership structure
CF   : controlling factors
Growth : bank industry's growth rate
Year   : dummy variable denoting the year where data accounted for

Proxy Variables and Model for Performance

In defining bank performance, this study depends on a measure of bank performance popular in the literature (Claessens, Demirguc-Kunt and Huizingga, 2001; Demirguc-Kunt and Huizingga, 1999). The most common use of performance variable is return on assets (*ROA*). The dependent variable for performance is:

- *ROA*: the ratio of net income over asset. Using *ROA* in measuring the correlation between performance and ownership is also to maintain consistency in the study (Kobeissi, 2002; Kalluru, 2009; Magalhaes, Gutierrez and Tribo, 2008). Where risks are measured based on banks assets quality, aggressiveness and how banks managing and assessing their earning assets.

The independent variables in order to measure performance are defined as:

- *OS* is the ownership type
- *GROWTH*: It is the percentage increase/decrease of bank commercial asset from previous year

- *YEAR*: is a dummy variable denoting the year of the a bank on a particular time. (*y*2002 = 1, *y*2003 = 1,.......*y*2009 = 1 or zero otherwise)

- *CF'* is the controlling factors of the banks which related to management of banking operations with the addition of *LOSS* :
  - *SIZE* : the log of the total asset
  - *LOANS*: the ratio of loans to total earning assets
  - *LIQUID*: The ratio of liquid assets to total assets
  - *DEPOSITS*: the ratio of total deposits to total funding
  - *CAPITAL*: The ratio of book values of equity to total assets
  - *LOSS*: the ratio of loan loss to total loan

Therefore the regression model to measure performance is defined as:

$ROA_{jt} = a + bOS_{jt} + cCF'_{jt} + dGROWTH_{jt} + eYEAR_t + \varepsilon$ (Eq. 3.4)

Where,

ROA: return on asset is measured at bank *j* at time *t*.

OS   : ownership structure
CF   : controlling factors
Growth : bank industry's growth rate
Year   : dummy variable denoting the year where data accounted for

ESTIMATION AND SIMULATION RESULTS
Descriptive Tests

The descriptive results showed that the regional banks are the best performer in terms of *ROA* and have the best quality of asset. The government banks despite of having the highest non-performing loan ratio, nevertheless their performance in terms of *ROA* still better than the foreign and private domestic banks. Being the most capitalized group of banks, the foreign banks

are the most prudent banks but at the same time the foreign banks are the most aggressive in terms of risk taking behavior. Private domestic banks compare to the other three ownership categories are considered to be moderate. There are no exceptional significance in risk taking and performance

Table 2 Descriptive Statistics for All Sample and Ownership Category

	Total Obsv.	No.of Banks	Loss(%)	Ln(Z)	Ln(σ)	ROA(%)	Size (tri Rp)	Loan(%)	LDR(%)	Dep	CAR(%)
			Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
			Std.Dev	Std.Dev	Std.Dev	Std.Dev	Std.Dev	Std.Dev	Std.Dev	Std.Dev	Std.Dev
All	630	105	3.44	2.39	-5.05	2.55	17.03	87.54	78.83	9.61	26.80
			3.52	0.68	0.88	2.37	44.60	15.14	34.49	13.25	24.91
2004	105	105	3.37	2.61	-4.92	3.24	11.19	84.70	73.08	9.38	24.89
			3.39	0.51	0.88	1.76	32.25	17.82	34.20	10.47	22.17
2005	105	105	4.13	2.52	-5.01	2.60	13.77	86.49	76.05	10.04	23.89
			3.91	0.48	0.83	1.83	34.51	16.62	32.54	9.96	22.26
2006	105	105	3.75	2.52	-5.00	2.59	15.14	87.85	72.90	8.12	26.71
			3.23	0.49	0.81	2.04	37.85	15.26	32.78	7.29	18.99
2007	105	105	3.06	2.42	-5.24	2.46	18.07	88.77	78.14	8.46	29.77
			2.71	0.56	0.86	2.28	45.54	13.38	33.18	7.57	38.51
2008	105	105	2.93	2.58	-5.23	2.40	20.86	88.69	89.11	8.48	26.45
			2.76	0.64	1.04	2.01	51.87	12.83	38.41	8.44	16.76
2009	105	105	3.40	1.66	-4.91	1.99	23.15	88.73	83.69	13.17	29.11
			4.66	0.81	0.83	3.64	59.15	14.25	33.29	25.55	24.81
Per Catg											
Gov	37		5.10	2.17	-5.15	2.85	121.17	76.46	73.05	10.60	17.58
			4.95	0.43	0.93	1.75	111.84	17.66	15.84	7.75	4.30
BPD	156		2.43	2.37	-5.14	3.56	6.00	92.76	65.52	9.34	21.88
			2.30	0.43	0.63	1.32	5.77	10.94	26.39	6.35	7.62
Forgn	174		4.39	2.48	-4.77	2.67	18.18	81.56	96.22	9.33	30.64
			4.31	0.71	0.80	3.30	22.23	16.63	48.31	19.57	23.46
Dom	263		3.18	2.37	-5.17	1.83	8.16	89.96	76.03	9.81	28.49
			3.05	0.79	1.01	1.92	32.04	13.82	23.44	11.66	32.42

Statistical significance at the 5% level
Source: Compiled by Author based on the statistical results

Bivariate and Multivariate Comparison Tests

The bivariate and multivariate comparison tests justified the descriptive result analysis except in regards of the bank soundness. The multivariate comparison test result showed that there were not any significant differences in terms of bank soundness among the four bank ownership categories. The bivariate comparison test also showed mix results of significance and not significance when comparing *Ln(Z)* values. Therefore, outcome regarding bank soundness cannot be concluded using these analysis.

Table 3 Bivariate Comparison between Ownership Category

	GOV	BPD	GOV	FOR	GOV	DOM	BPD	FOR	BPD	DOM	FOR	DOM
	t-Statistic		*t-Statistic*		*t-Statistic*		*t-Statistic*		*t-Statistic*		*t-Statistic*	
Loss(%)	5.10	2.43	5.10	4.39	5.10	3.18	2.43	4.39	2.43	3.18	4.39	3.18
	*0.000***		*0.379*		*0.001***		*0.000***		*0.008***		*0.001***	
Ln(Z)	2.17	2.37	2.17	2.48	2.17	2.37	2.37	2.48	2.37	2.37	2.48	2.37
	*0.012***		*0.012***		*0.143*		*0.097*		*0.953*		*0.129*	
Ln(σ)	-5.15	-5.14	-5.15	-4.77	-5.15	-5.17	-5.14	-4.77	-5.14	-5.17	-4.77	-5.17
	0.969		*0.012***		*0.899*		*0.000***		*0.761*		*0.000***	
ROA(%)	2.85	3.56	2.85	2.67	2.85	1.83	3.56	2.67	3.56	1.83	2.67	1.83
	*0.007***		*0.752*		*0.003***		*0.002***		*0.000***		*0.001***	
Size (tril Rp)	121.17	6.00	121.17	18.18	121.17	8.16	6.00	18.18	6.00	8.16	18.18	8.16
	*0.000***		*0.000***		*0.000***		*0.000***		*0.407*		*0.000***	
Loan(%)	76.46	92.76	76.46	81.56	76.46	89.96	92.76	81.56	92.76	89.96	81.56	89.96
	*0.000***		*0.095*		*0.000***		*0.000***		*0.031***		*0.000***	
LDR(%)	73.05	65.52	73.05	96.22	73.05	76.03	65.52	96.22	65.52	76.03	96.22	76.03
	0.098		*0.004***		*0.454*		*0.000***		*0.000***		*0.000***	
Deposit	10.60	9.34	10.60	9.33	10.60	9.81	9.34	9.33	9.34	9.81	9.33	9.81
	0.30		*0.70*		*0.69*		*0.99*		*0.64*		*0.75*	
CAR(%)	17.58	21.88	17.58	30.64	17.58	28.49	21.88	30.64	21.88	28.49	30.64	28.49
	*0.001***		*0.001***		*0.042***		*0.000***		*0.013***		*0.452*	

*(** Indicates statistical significance at the 5% level)*
Source : Compiled by Author based on the statistical results

Regional banks according to bivariate and multivariate comparison tests have consistently showing the results as the best performer in terms of *ROA* and the lowest non-performing loan ratio. Possessing the best quality of asset would have given positive impact toward return of asset. Another contributing factor is the loan ratio where it is consistently significant compare to government, foreign and private domestic banks.

Foreign banks according to descriptive and bivariate comparison tests are the soundest banks. This due to the fact that foreign banks are the most capitalized banks in Indonesia. Compare to government and regional banks there is significant difference, but only slightly compare to private domestic banks. But the multivariate comparison test showed that the foreign banks also the most aggressive banks compare to other bank ownership categories. The aggressive risk taking behavior is reflected in the non-performing ratio which is just slightly better than the government-owned banks.

Table 4 Multivariate Comparison Test on Risk and Performance

Loss(%)

Annova Significance — 0.000**

Duncan[a,b]	N	Subset for alpha = 0.05		
		1	**2**	**3**
BPD	156	2.4256		
Domestic	263	3.1775		
Foreign	174		4.3909	
Government	37		5.0959	

Ln(Z)

Annova Significance — 0.062

Ln(σ)

Annova Significance — 0.000**

Duncan[a,b]	N	Subset for alpha = 0.05		
		1	**2**	**3**
Domestic	263	-5.1685		
Government	37	-5.1463		
BPD	156	-5.1413		
Foreign	174		-4.7661	

ROA(%)

Annova Significance — 0.000**

Duncan[a,b]	N	Subset for alpha = 0.05		
		1	**2**	**3**
Domestic	263	1.8281		
Foreign	174		2.6697	
Government	37		2.8468	
BPD	156			3.5566

*Duncan[a,b] (** Indicates statistical significant at the 5% level)*
a. Uses harmonic mean sample size = 93.052
b. The group sizes are unequal. The harmonic mean of the group sizes is used.
Source : Compiled by Author based on the statistical results

Size of banks proved to be a significant factor that strongly contributed to risk and performance. In the case of government banks, negative impact towards return on asset due to higher non-performing loan, seemed not significant. Therefore, the bivariate and multivariate comparison tests also showed that despite of possessing the lowest asset quality; government banks still performed better compare foreign and private domestic banks.

Table 5 Multivariate Comparison Test with Controlling Variables

Size(tril Rp)				
Annova Significance	0.000**			
		Subset for alpha = 0.05		
Duncan[a,b]	*N*	*1*	*2*	*3*
BPD	156	6.0037		
Domestic	263	8.1557		
Foreign	174		18.1821	
Government	37			121.1711
Loans(%)				
Annova Significance	0.000**			
		Subset for alpha = 0.05		
Duncan[a,b]	*N*	*1*	*2*	*3*
Government	37	76.4552		
Foreign	174		81.557	
Domestic	263			89.9564
BPD	156			92.7586
LDR(%)				
Annova Significance	0.000**			
		Subset for alpha = 0.05		
Duncan[a,b]	*N*	*1*	*2*	*3*
BPD	263	65.5201		
Government	37		73.0484	
Domestic	156		76.0313	
Foreign	174			96.224
Deposit				
Annova Significance	0.939			

*Duncan[a,b] (** Indicates statistical significant at the 5% level)*
a. Uses harmonic mean sample size = 93.052
b. The group sizes are unequal. The harmonic mean of the group sizes is used.
Source : Compiled by Author based on the statistical results

Regression Analysis

The result of the regression analysis pretty much confirmed the results of descriptive, bivariate and multivariate comparison tests. In terms of *LOSS*, the result showed that the regional banks have the best asset quality and the government-owned banks have the worse asset quality. Next in terms of *Ln(ó)*, the foreign and government-owned banks consider to be the most aggressive in risk taking behavior. But in regards of *Ln(Z)*, the result was not really conclusive to show foreign banks are the most sound banks. Finally, regression analysis also showed that the regional banks are the best performer in terms of ROA.

However, the regression analysis showed few inconsistencies that might have contributed to the overall results. Those inconsistencies are as follows:

- *CAR* has positive correlation with *Ln(Z)* and *ROA*. In contradiction *CAR* also has a positive correlation with *Loss* and *Ln(σ)*. According to Basel II, increasing CAR is to aim at increasing bank stability, hence increase *ROA*. And not to increase risk taking, but instead to control aggressiveness towards risk.
- Loan ratio has a negative correlation with *i* when the source of fund is used up then it should lower the aggressiveness in risk taking. But in contradiction, loan ratio has a negative correlation with *Loss*. It mean that increasing loan ratio will lower the non-performing loan
- Deposit ratio was not significant at all towards any of the dependent variables. Deposit is one the banks source of fund. When deposit increase the bank should be more controlled and regulated, to guarantee deposit rights and to protect banks from insolvency. Therefore, Deposit is expected to have positive correlation with *ROA* and *Ln(Z)*.

Table 6 Regression Analysis Result of All Data

	LOSS Prob.	Ln(σ) Prob.	Ln(Z) Prob.	ROA Prob.
Growth	0.015565	-0.010679	0.014321	-0.014207
	0.4497	0.0343**	0.005**	0.2697
Ln(Size)	0.105668	-0.051733	0.076147	0.351792
	0.2986	0.0378**	0.0025**	0.0000**
Loan	-0.031952	-0.008849	0.00181	-0.000185
	0.0048**	0.0014**	0.5164	0.9792
LDR	0.016714	0.004864	0.00243**	0.017931
	0.0001**	0.0000**	0.0228	0.0000**
Deposit	-0.017933	-0.001907	-0.003606	0.00094
	0.1033	0.4785	0.1849	0.8914
CAR	0.017266	0.007451	0.017591	0.017374
	0.0038**	0.0000**	0.0000**	0.0000**
Year	-0.18103	-0.01735	-0.0149773	-0.330073
	0.0369**	0.4190	0.0000**	0.0000**
Loss				-0.207691
				0.0000**
N	630	630	630	630
R-squared	0.063388	0.110985	0.238623	0.195131
Adjusted R-squared	0.052847	0.10098	0.230054	0.184762
F-statistic	6.013647	11.09298	27.84862	18.81925

*(** Indicates statistical significance is at 5% level)*
Source : Compiled by Author based on the statistical results

Table 7 Regression Analysis with Ownership Classification Variable

	LOSS	Ln(σ)	Ln(Z)	ROA
	Prob.	Prob.	Prob.	Prob.
Government	2.212676	0.550539	1.177909	0.450427
	0.0029**	0.0023**	0.0000**	0.3131
BPD	-0.371748	0.294712	0.183444	1.813549
	0.3297	0.0015**	0.046**	0.0000**
Foreign	1.020297	0.537006	0.065002	-0.041406
	0.0165**	0.0000**	0.5246	0.8709
Growth	0.017268	-0.009931	0.015681	-0.012283
	0.3970	0.0447**	0.0015**	0.3137
Ln(Size)	-0.11107	-0.147119	-0.018452	0.23611
	0.3942	0.0000**	0.5564	0.0025**
Loan	-0.024232	-0.009507	-0.001305	-0.020685
	0.0425**	0.0011**	0.6494	0.0039**
LDR	0.010042	0.003365	0.003102	0.025799
	0.0368**	0.004**	0.0074**	0.0000**
Deposit	-0.016869	-0.000478	-0.001222	0.008622
	0.1269	0.8583	0.6457	0.1925
CAR	0.011768	0.005599	0.017011	0.019648
	0.0542	0.0002**	0.0000**	0.0000**
Year	0.011768	-0.00405	-0.135342	-0.321192
	0.0542	0.8468	0.0000**	0.0000**
Loss				-0.188839
				0.0000**
N	630	630	630	630
R-squared	0.088181	0.150827	0.297204	0.282926
Adjusted R-squared	0.073451	0.137109	0.28585	0.270162
F-statistic	5.986288	10.99448	26.17672	22.16684

*(**Indicates statistical significance is at 5% level)*
Source : Compiled by Author based on the statistical result

Discussions

This research found that in Indonesian commercial banking, there is only one type of ownership structure which is concentrated. Only very few banks in Indonesia have dispersed ownership. But even so, the owners are usually either family or business group related. The implications of different bank owners with strong controlling right mean different behavior towards risk taking, hence different level of performance. The results indeed confirmed that there are significant differences in risk and performance, although their signs are not always consistent with the expectations and hypothesis. Public banks are expected to have the lowest quality of asset, which in part the results confirmed the expectation.

The results showed that government-banks have the highest non-performing ratio, therefore considered to possess the worse asset quality compare to other commercial banks. Nonetheless, as was mentioned before despite of having the highest NPL, government-owned banks performance in terms of *ROA* are better compare

to foreign and private banks. Again this result contradict with the previous researches, predicting private banks (foreign and domestics) are the better performers. Having such a huge assets compare to other banks most definitely contributed to the results. Positive correlation between size and *ROA* justify it. Bank size also contribute to banks stability, as the result showed that size positively correlated to bank's soundness, despite the fact that government-owned banks are the least capitalized among other banks.

For foreign-owned banks being the most capitalized are the soundest compare to other banks. This is consistent with variety of theories supporting *CAR* improves bank soundness. This could prove that by implementing good risk management practice, a bank can be aggressive but also sound at the same time. High-risk market has higher interest rate, therefore can impact positively towards performance (Iannota, Nocera and Sironi, 2007).

Looking at the result again the aggressive level between government-owned and foreign banks is not much different. The different lies within the reason of risk taking. The foreign bank aggressive in risk taking because of the outlook of Indonesian economy is very positive. The government-owned banks channeled national economic funding, in many cases they have to finance government projects even though they are not so profitable and with longer time period (La Porta, Lopez-De-Silanes and Shleifer, 2002). Foreign banks are expected to be the best performer, instead of the regional banks. But due to heavy business expansion in 2007, the result may not be reflected. It may need more time period for analysis to see the real performance of the foreign banks.

The results also showed that private banks are moderate in terms of performance and risk-taking compare to other banks. Far from the expectations that private domestic banks being heavily influenced by the owners in all aspect, should have been very aggressive in risk taking and competitive performers. Again, *Size* might be the contributing factor that affects the results.

CONCLUSION

The empirical result of this study after analysis can be concluded that the ownership structure in Indonesian commercial banking industry is homogeneous, which is concentrated. The implications of different ownership background with strong controlling-right are significantly different towards risk and performance. Risk-taking behavior and performance in terms of *ROA* is determined by the role of the controlling ownership. Moreover, there is a negative relationship between risk management and bank's performance in terms of ROA. Having concentrated structure of ownership with strong controlling-right tends to induce banks to increase risk. But the relationship between ownership and risk taking behavior depends on the role of the largest owner in managing the firms and regulations. However, this study found that the size of bank's asset also support stability and induce aggressiveness in risk taking that influence ROA, where NPL gives negative effect. The results of this study somewhat similar to the study of Laeven and Levine (2008) about bank risk taking. In general, empirical results showed that theIndonesian banking industry is stable and gradually improving.

However, this study has several limitations such as the inter-relationship between risk and performance and the risk taking behavior and performance of private domestic banks. Therefore there are few suggestions likes the measuring performance in several variables might be better in explaining the inter-relationship between risk and performance, improving the bank selection process, in order to control the same number of banks within each ownership categories.

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