UNIVERSITAS INDONESIA

OWNERSHIP STRUCTURE, RISK, AND THEIR IMPACT TOWARDS PERFORMANCE : EVIDENCE IN INDONESIAN COMMERCIAL BANKS

THESIS

Submitted in order to fulfill the requirement to obtain Magister Management degree in Finance

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STATEMENT OF ORIGINALITY

This thesis was done solely by myself and all data resources, quotes and references, were properly stated and justified

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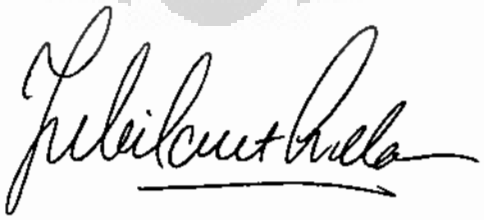

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ABSTRACT

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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.

ABSTRAK

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Judul : Struktur kepemilikan, resiko, dan pengaruh pada proforma Bank komersil Indonesia

Tujuan penulisan tesis ini adalah untuk menganalisa hubungan antara struktur kepemilikan, resiko dan performa dari industri perbankan komersial Indonesia. Tesis ini mempelajari apakah struktur kepemilikan mempunyai pegaruh moderat diantara hubungan tersebut diatas dan apakah mempunyai peranan penting dalam perilaku pengambilan resiko serta pengaruhnya terhadap performa bank yang diukur dengan ROA. Data yang digunakan dalam tesis ini adalah disusun berdasarkan sumber data laporan neraca dan rugi laba triwulan yang telah dilaporkan kepada Bank Indonesia. Data-data tersebut dianalisa dengan menggunakan metode "time-series regression analysis". Hasil dari tesis ini menjelaskan bahwa bentuk dari struktur kepemilikan perbankan di Indonesia adalah "homogeneous" dimana pemilik mempunyai hak mayoritas dalam mengendalikan suatu bank. Hubungan antara pemilik dan sikap dalam pengambilan resiko tergantung pada kepentingan dan peranan pemegang saham mayoritas serta peraturan yang berlaku. Besarnya modal yang ditanamkan juga menjadi salah satu faktor yang menentukan dan mendukung kestabilan suatu bank akan tetapi tidak mengurangi keinginan dalam pengambilan resiko. Selanjutnya, besarnya aset juga dapat mendukung stabilitas suatu bank namun disisi lain dapat juga menyebabkan peningkatan pada agresifitas pengambilan resiko yang akan mempengaruhi ROA. Penulisan tesis ini juga dapat menjelaskan korelasi negatif antara manajemen resiko dan performa berdasarkan ROA.

Kata kunci : struktur kepemilikan, resiko, agresifitas, ROA

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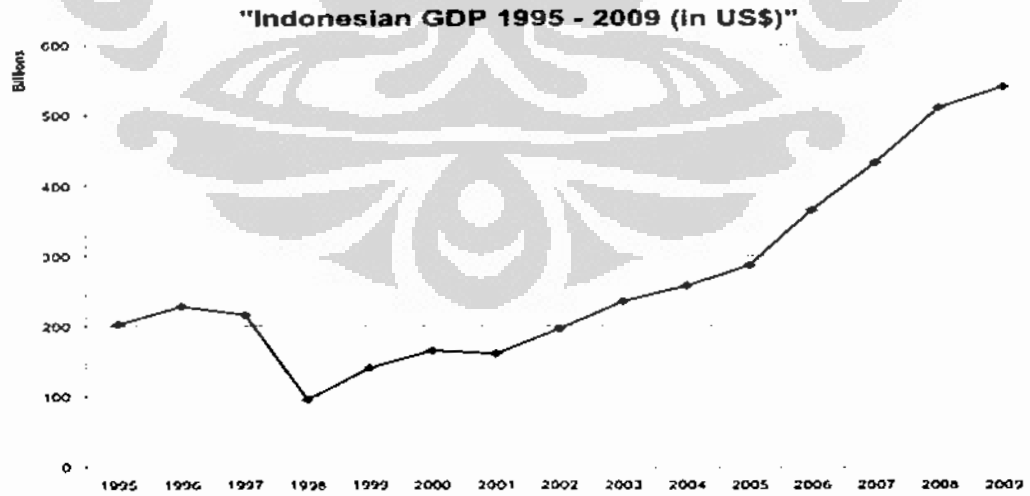
Chapter 1
INTRODUCTION

1.1. Research Background, Issues and Urgency

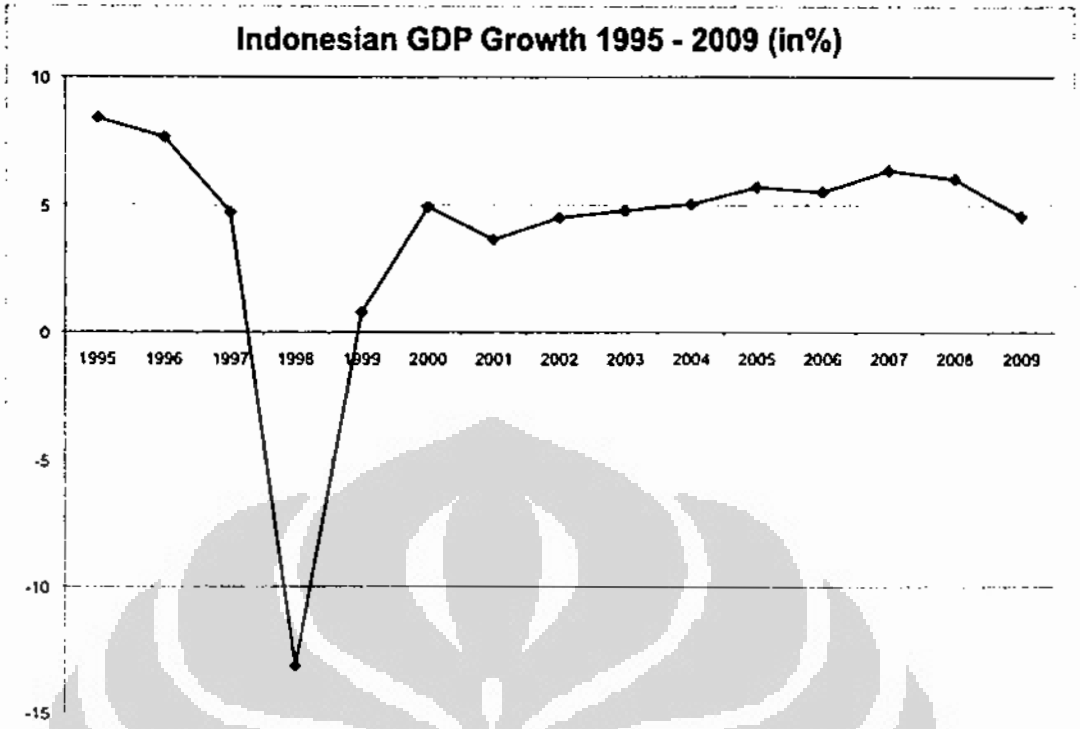
The studies of ownership structure, risk and performance have been the subject for many scholars around the world. However, interestingly the end results of the studies are vary, that probably are caused by the effect of different regulations and the nature of the industry (Magalhaes, Gutierrez, & Tribo,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

As can be seen in Graph 1.1 the Indonesian economy in the early 1990s, started to grow at an accelerated pace. By mid 1990s, the stage of the economy probably have reached its highest level since Indonesia has gained its independence. The growth rate of the Indonesian GDP was also at its peak (refer to Graph 1.2). 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).



Graph 1.1 : Indonesian GDP 1967-2008 (in US dollars).

Source : (World Bank, World Development Indicators)



Graph 1.2 : Growth rate of Indonesian GDP 1967-2008.

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, Kaaro, Mahadwartha, & Supriyatna, 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. Mismanagement 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 effected 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.

Indonesia as an emerging country comprise, the banking industry to be a primary role and be the source of fund for economic development (La Porta,

Lopez-De-Silanes, & Shleifer, 2002; Lang & So, 2002). 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. Furthermore, financial institutions and bank supervision system also underwent major reconstruction.

There are 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, & 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 (Jensen & Meckling, 1976; Demsetz & Lehn, 1985). Especially nowadays, the composition of bank owners in Indonesia come from various background (i.e. government, business groups, family-owned business, foreign, etc). There are indications that the variability of bank owners can effect bank performance and its behavior in taking risk. In Europe, Iannotta et al. (2007) conducted a research study to find significant differences in performance and risk of European banks with different ownership structure. The data sample consist of 181 large banks from 15 European countries over the period between 1999 – 2004. They endeavor to find

systematic differences in bank performances between mutual banks, public sector banks, private banks, and banks with different ownership concentration.

The results confirmed that there are significant differences in performance and risk although the signs are not always consistent as expected. To be specific, private banks appear to be more profitable than both mutual and public banks. On one hand the higher profit margins were caused from higher returns of their earning assets not because of cost efficiency. On the other hand, public and mutual banks are more efficient in their cost. Concerning the ownership concentration, the profitability of banks with more dispersed owners is not significantly better, compare to banks with concentrated type owners. The study also found that banks with higher ownership concentration are associated with better loan quality, lower asset and insolvency risks. Compare to banks with dispersed ownership are found to have higher operating risk per euro which confirmed with the agency theory (Jensen & Meckling, 1976).

Broader study was conducted by Magalhaes, Gutierrez, and Tribo (2007). The research investigated the effect of ownership concentration on the risk and performance of commercial banks, by controlling the shareholders protection laws, and other country and bank specific traits (Crystal, Dages, & Goldberg, 2002). The research used data sample of 818 banks in 40 countries during the period of 2000 to 2005. 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 new investment opportunities which reflects in decreasing performance (Magalhaes, Gutierrez, & Tribo, 2008). Furthermore, the above study also found banks behaviour 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 purpose of this research was to study the effect of ownership structure on performance and risk, of commercial banks in India during the period of 1995 –

2007. The study was to examine if there are any significant differences in the performance and risk among state-owned banks, domestic private banks, and foreign banks in an emerging type country such as India. 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. However, there aren't any significant differences between state-owned banks and domestic private banks except their sizes. The regression resulted that bank capital and demand deposits are positively associated and loans are negatively associated with profitability. The risk taking analysis of this study also showed foreign commercial banks in India have higher non-performing loan compare to other banks. The regressions resulted that, increasing size of the banks and higher growth rate of the economy reduce non-performing loan. But increasing demand deposits cause to increase risky loans.

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, Sugiarto, Purwanti, Hermanto, & Arianto, 2003) or ownership structure with corporate governance (Tandelilin, Kaaro, Mahadwartha, & Supriyatna, 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. There are few exceptions in the result where ownerships effected performance but it was not significant. Furthermore the results also consistent with the *Agency Theory* by (Jensen & 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 performs 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. The banking industry now has stronger infrastructure and more definitive regulations. Therefore it is very important to understand how these changes effect the banks performance as a whole and the banks behavior towards risk within the new business environment and new legal framework. Especially when the foreign investors became one of the key actor 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, & Goldberg, 2002). Consequently, the nature of competition also changed in Indonesian the banking market.

An empirical study to analyze the Indonesian banking industry in order to address several issues discussed above are quite important. 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. Understanding how different ownership structure implicate performance and the way banks manage their risk within the new business environment, is one way of taking those prevention steps. This study will give preliminary indicators about the soundness of Indonesian banking industry. Moreover, better insight in understanding the correlation between different ownership structure and risk management, and to help enriching the literature about ownership, risk and performance in Indonesian banking industry.

1.2. Research Questions

In general, ownership structure can be defined into two major dimensions (Iannotta, Nocera, & Sironi, 2007) namely: (a) the degree of ownership concentration within a firm may differ depends on more or less dispersed, and (b) the nature of the owners may different given the same degree of concentration. For example two firms may different if one firm has a government element holds majority in the ownership structure.

The Indonesian commercial banking industry, different ownership structure do coexists. Basically, there are three main classifications in Indonesian commercial banking industry which are government-owned banks (including regional development banks), private local banks (including family-owned banks), and foreign banks (Rokhim, 2005; Sato, 2005). Within each ownership classification there are differences in ownerships concentration. Moreover, in Indonesian banking sector, the majority of ownership is mostly concentrated. For example in the category of private banks, several of these banks are majority owned by foreigners, business groups or family-owned, and there are also several private banks that publicly listed. Nevertheless, regardless bank owners different backgrounds, most of the banks are very much similar in doing banking practices. They are competing with each other very much in the same market and the same legal framework.

Because of the variability of bank owners in Indonesia, it is important to get in depth to understand how different owners composition may determine bank performance (Bart, Caprio, & Levine, 2000). Are there any differences in bank performance between one ownership structure to another ? Or is there any particular type of ownership structure that can make the bank performance more superior compare to other type of ownership structure ? (Cornett, Guo, Khaksari, & Tehranian, 2000). Or maybe, there aren't any implication or effect at all between ownership structure and performance ? (Barth, Caprio Jr., & Levine, 1999).

1. Question : What are the types of ownerships structure and the effect in Indonesian commercial banking industry.

In today's modern banking practice, risk management also plays a key role in determining banks performances. Iannotta et al (2007) argued that banks with higher ownership concentration have lower assets risk and lower insolvency risk. Laeven (2004) showed that concentrated ownership in banks are associated with higher risk taking while dispersed ownership can decrease the risk.

Before the crisis, the Indonesian bank owners have great influence over business decision making. However, the banking reformation program after the 1997 crisis required all banks to re-address their perspective towards risk management. Therefore, bank owners influence over decision making is affected by the new requirement. Type of questions arises about how different ownership structure behave towards risk taking. Is there a particular type of ownership structure that make a bank to become more risk averse or risk taker ? (Laeven & Levine, 2008). Or is there any particular type ownership structure that is better in managing risk ? Or maybe there is possibility that there are no relations or correlations at all between type of ownership structure and risk ? (Magalhaes, Gutierrez, & Tribo, 2008).

2. Question : What are the implications that exist between different kind of ownership structure with risk management and performance in Indonesian commercial banking industry ?

If risk management is essential in today's modern banking practices, then it is also quite important to learn the inter-relationship between performance and risk management. The success of banks performances is partly determined by risk management factor. There are several indicators that show relationships or correlations between performance and risk (Tandelilin, Kaaro, Mahadwartha, & Supriyatna, 2007). These indicators are perfectly make sense because a bank can perform well due to good risk management or more aggressive in taking risk.

Riskier loans should produce higher interest rate income, with positive impact on income (Iannotta, Nocera, & Sironi, 2007). Hence, to find the type of correlation between risk and performance is an important element to understand the characteristics of risk that the banks are taken.

3. Question : What is the type of inter-relationship between risk and performance in Indonesian commercial banking industry.

1.3. Research Objectives

1) This study has the objective to address the issues and questions (discussed in section 1.2) concerning the relationships between ownership, risk and their impact towards performance in Indonesian commercial banking industry. The Indonesian financial system since prior the 1997 financial crisis, has underwent five phases of development (Hamada, 2003). Furthermore, since 2004 Indonesia can be said has entered phase sixth, which is the post crisis/restructuring period. The phases of development not only changed the business environment in the Indonesian commercial banking industry, but also changed its characteristics. 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. The first objective of this study is to find what type of ownership structures and types in the Indonesian commercial banks, and their impact in bank's business operation.

2) The role and influence of bank owners in banking management were significantly different. The regulations from the government also underwent lots of changes. For instance during the expansion period, the government eased some prudential regulations like those concerning rating and the capital-adequacy ratio, because they were widely condemned as excessively burdensome for banks (Hamada, 2003). On the other hand, during the restructuring period, the government was very strict to impose regulation about risk management practice

(Sato, 2005). 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 & Villar, 2005). Therefore the second objective of this study is to learn the effects of different type of the most current ownership structure towards risk and performance. This study endeavors to analyze and to compare of how different ownership type and structure perceive risk and the impact on performance in the post period of the 1997 financial crisis.

3) The third objective of this study is to confirm the previous results from many studies about the inter-relationship between risk and performance. Constantly in previous studies such as Tandelilin et. al (2004), the inter-relationship showed a negative one. This study will try to test the result once again using slightly different parameters and under different business environment.

1.4. Research Benefits

Previous researches on the subject of ownership, risk and performance were mostly conducted as cross border research. Iannotta et al (2007) conducted their research on selected commercial banks across Europe, whereas Nada Kobeissi conducted the research on commercial banks across Middle East and North African countries. Magalhaes et al (2008) made their research even on broader area, which covered on selected commercial banks in 40 countries around the world. However, Kaluru (2009) made his research based on Iannotta's model specifically on India's commercial banks. The common thing about all the studies above mentioned that they all emphasized on analyzing performance.

This study is focused specifically on Indonesian commercial banking. Based on Iannotta's research model and combined with Magalhaes' research model, this study emphasized on ownership and risk instead on performance. This study will analyze the risk taking behavior of different ownership structure

and its impact towards performance on commercial banks that operate in the same market and legal framework. Therefore, the outcome of this study would be more specific and not influence by different operating environment. As the occurrence of financial crisis is more frequent, to create a stable financial system is important for any country (particularly countries that depend on banking system). Understanding risk-taking behavior is important for regulators and banks to create such system to prevent the collapse of commercial banks that can stimulate economic pandemonium.

1.5. Research Methods and Models Variables

The data resources are used from banks accounting historic data (2004-2009), therefore the methodology of time series panel data analysis was chosen. This method was also used in the studies of Iannotta et al (2007), Magalhaes et al (2008), and Kalluru (2009). The main reason this method used because time dimension is recognized in panel data analysis. SPSS and Eviews software are used to aid running the analysis.

There are five main variables in this paper that study the correlation between ownership structure, risk and performance. Those five main variables are ownership, loan loss, earnings volatility, Z-score and return on asset (ROA). Ownership is to classify the structure. Loan loss, earnings volatility and Z-score is to measure risk factors. ROA is to measure performance.

The description of those main variables mentioned for this study are as follows :

1. The type ownership and is related to the presence of certain institutions or groups or even individuals which have the controlling factor within a bank (Magalhaes, Gutierrez, & Tribo, 2008). In Indonesian banking industry the ownership can be classified into three different groups : government, domestic (business affiliate and family-owned) and foreign. Whereas ownership concentration refers to the distribution of shares owned by certain number of individuals or families, institutions or business groups (Tandelilin, Kaaro, Mahadwartha, & Supriyatna, 2007). The Indonesian

banking industry can be characterized as highly concentrated. In general based on the data from Bank Indonesia, 80% of the commercial bank in Indonesia are highly concentrated (Bank Indonesia, 2010). The ownership of Indonesian commercial banks are either dominated by government, business group affiliated, family-owned and recently foreign private investors. In this paper, the type of ownership is defined in by the controlling factor.

2. Risk in this study is measured in three different ways :
    a. First, loan loss is a variable to measure the quality of asset (Iannotta, Nocera, & Sironi, 2007). Risky loans produce high interest income which give a positive effect on income, but on the other hand poor asset quality should increase banks' cost of funding which give negative impact on income.
    b. Second, earning volatility is measuring risk from which the main results concerning bank risk taking behavior (Magalhaes, Gutierrez, & Tribo, 2008).
    c. Third, Z-score is to asses the level of insolvency risk, or its often referred as a measure of stability, as it represents the inverse probability of insolvency of a firm (Magalhaes, Gutierrez, & Tribo, 2008).
3. Performance in this study is measured by ROA, which measured bank's ability to transform its assets into earnings (Magalhaes, Gutierrez, & Tribo, 2008; Kobeissi, 2002). Using ROA as a variable in this study, is also to maintain consistency in order to find inter relationships between risk and performance. Because higher performance is also the result of bank's ability to take higher risk.

1.6. Research Report Outline

In order to improve the readability of this report, the outline of this report is divided into five chapters. The contents of each chapter are summarized as follows :

- Chapter 1 : the first section presents the background of the research, brief story about previous researches in ownership structure, risk and performance and the urgency the study. The second section presents the issues surrounding the particular topics and the questions of why this particular research need to be done. The third section presents the objective of the research and finally the fourth section presents the benefit of the study. Introduction of the main variables use in this study is presented in section five.
- Chapter 2 presents the theoretical framework of the research. This chapter discussed the literature reviews, for both previous empirical research and analytical research. A brief history about ownership structure changes in Indonesia is described in the first section of this chapter. The next section described about the definition of ownership, risk and performance in banking. Several theories related to the latter subjects are discussed in this section.
- Chapter 3 presents data, hypothesis, and methodology. In the first section of this chapter describes about the description and sources of the data used in this study. The second section describes about the background of the hypothesis formulation and hypothesis of the possible implication and effect of ownership structure towards performance and managing the risk. The last section in this chapter is about research methodology.
- Chapter 4 presents empirical result, result summary and discussion.
- Chapter 5 presents conclusion, research limitation, suggestions for future research and research implication.
- Finally at the end of this research report, there are references and appendices for list of tables and graphics, data, statistical printouts such as regression analysis and factor analysis.

CHAPTER 2
LITERATURE REVIEW

2.1. Why Banking Industry is Important to The Economy

Banks play very important roles in the economic life of the nation, particularly for developing nation. The health of the economy is closely related to the soundness of its banking system (Saha, 2008). Banks borrowing, lending and related activities facilitate the process of production, distribution, exchange and consumption of wealth. Today's modern banking industry is very accommodating in utilizing the resources of the country. Because the banks have the ability to mobilize the savings of the people for investment purposes. Therefore, banks become effective partners in the process of economic development. Otherwise, then a big portion of capital wealth in a country would remain idle.

According to Saha (2008) over the years, the role of banking industry is significantly increased in the aspect of an economy. The banking industry forming a big portion of the financial sector with the primary function as financial intermediary generating money model. From the macro economic models, banks have been found to be a part of the supply side of the economy. However, in today's modern banking practice the banking industry has transformed into a multi tasking entity.

Furthermore Saha (2008) argued that a proper financial sector is very important for the economic growth of the developing and underdeveloped countries. The commercial banking industry, which forms one of the backbones of the financial sector must be well organized and efficient for dynamics of a growing economy. In particular, no underdeveloped country can progress without first setting up a sound commercial banking system. The importance of a sound

commercial banking system for commercial developing and underdeveloped countries may depicted as follows :

- Capital Formation : collect savings and to make them available for productive purposes. In most cases savings is generally low in an underdeveloped country due to poverty. Even the potential savings of the country can not be realized due to lack of adequate banking facilities. Therefore development of a sound commercial banking is essential.
- Monetization : the banks by opening branches in rural and backwards areas, can promote the process of monetization in the economy. In Indonesia Bank Rakyat Indonesia (BRI), which is a government owned bank, has been doing this program for decades. The existence of non monetized sector can interfere the economic development
- Innovations : are prerequisite for economic progress. Therefore the banks must pay special attention to the financing of business innovations by providing adequate and cheap credit.
- Finance for priority sectors : agriculture and small industries are examples of priority sectors in economic development for a country like Indonesia. Therefore, for banks to extent credit facilities to such priority sectors are considered essential.
- Provision for medium and long term finance : the commercial banks should have the capabilities to grant medium and long term credit accommodation. For a sustainable economic development, business and industry require medium and long term loans for their proper establishment.
- Cheap money policy : The commercial banks in an underdeveloped economy should adopt cheap money policy to stimulate activity or to meet the threat of recession. In fact cheap money policy is the only policy which can help promote economic growth in underdeveloped countries.

Banks investment decisions are argued to influence economic growth and stability (Allen & Gale, 2000; Levine, 2006). This argument is so true for a country like Indonesia. Only few bank risk taking may prevent the progress of

economic growth. Whereas too much bank risk may threatens economic stability. Therefore it makes sense for the government and institutions to regulate banks with the aim of shaping and influencing bank risk taking and performance with the purpose to attain economic growth (Magalhaes, Gutierrez, & Tribo, 2008). To study the risk management in relation to bank performance is of great relevance.

2.2. Ownership in Banking Industry

The study of ownership and control and its impact on firm performance has been the subject of many research papers. However, there were not as many researches which study the relationship between ownership and the risk assumed by a firm. Investors and managers may have different risk preference. For example in banking industry, owner controlled banks show higher risk taking behavior than managers controlled banks (Saunders & Travlos, 1990).

It is reasonable to expect that risk and performance are affected by ownership structure or origin of capital (government, foreign or business affiliated etc). For example, several studies revealed that foreign banks are more profitable or cost efficient compare to domestic banks in transition and developing countries (Bonin, Hasan, & Wachtel, 2004; Kobeissi, 2002; Kalluru, 2009). Another study by Choi and Hasan (2005), specifically tested whether the involvement of foreign investors in the ownership structure influence performance and risk measures. In Indonesia, the role and influence of bank owners are significant in policy and business decision making (Rokhim, 2005).

The Indonesian financial system was developed in five phases of development (Hamada, 2003). Those five phases can be described as follows :

- The first phase of financial development was between 1966-1972. Before 1966, it can be said that Indonesia hardly had a financial system. The first phase of development was the phase of formative period.
- The second phase of development was between 1973-1982 where the policy of the financial system was based under the soaring oil price.

- The third phase of financial development between 1983-1991 was the period of financial reform.
- The fourth phase of financial development between 1992-1997 was the period of expansion. During this period the Indonesian banking industry grew exponentially.
- The fifth phase of financial development between 1998-2003 was the period of restructuring. The 1997 financial crisis collapsed the Indonesian financial system so it was forced to be totally restructured.

From 2004-present the Indonesian financial system can be said has entered into its sixth phase, which is the post-crisis period. This period marked by the entry of foreign ownership in the Indonesian banking industry.

During the phases of development, the Indonesian banking industry had been through several ownership structure changes (Sato, 2005). The changes primarily were due to the changes in government policies or regulations in order to address the economic issues. Because of these policies or regulations changes, the role and influence of bank owners in banking practice also changed. Therefore, the impact of different ownership structure towards risk and performance is expected to change also.

2.2.1. The Structure of Banking Ownership in Indonesia

The ownership structure of the Indonesian banking industry had been through three major changes since the independence of the nation (Sato, 2005). First was the transition period between 'Orde Lama' under the leadership of President Soekarno and 'Orde Baru' under the leadership of President Soeharto. Second major ownership structure change was during the 'Orde Baru' era in the early 1980s. Finally was the period after 1997/1998 Asian financial crisis.

During the period of 'Orde Lama', the banking sector in Indonesia were almost all fully owned by the government. When the 'Orde Baru' under the leadership of President Soeharto took over the control of the government, the first major ownership structure change took place. In 1966, was the emergence of

commercial banks in Indonesia (Hamada, 2003). New licenses or permissions for local and foreign investors were given in order to start up new private banks. Within the short period of time, the number or banks within the banking sector increased dramatically. In less than two years the number of state-owned and private banks reached 122 banks and the number of foreign banks that were allowed to operate reached 11 banks (Sato, 2005). By mid-1968, the central government decided to put a halt in giving new licenses or permissions for new entries to enter the banking sector. This policy was maintained over the next twenty years.

The emergence of commercial banks in 1966 marked the first structural change in banking ownerships in Indonesia. Nevertheless the government was still the major player in the Indonesian banking industry. During that twenty year period, the government-owned banks still controlled or owned 70% - 80% of the total commercial assets within the banking sector (Sato, 2005). The government at that time was trying to transform the banking industry from a government-owned business into a government-controlled business. The purpose of this transformation was to make the banking sector to play as a key role in order to jump start the economic development program.

Between 1973 - 1982, the primary revenue for the central government came from the oil sector, where Indonesia was one of the oil supplier to the world oil market. The Indonesian financial system had it's policy-based under soaring oil price (Hamada, 2003). When the era of oil boom came to an end in 1982, suddenly the banking sector was unable to maintain its role as the main source for economic development fund. The central government was forced to cut spending, borrowed from private banks, World Bank and IMF.

Under the guidance of The World Bank and IMF, the central government had to implement economic liberalization (Sato, 2005). In June 1983 (Paket Kebijakan Juni (Pakjun) 1983), the central government introduced its first financial liberalization program. This liberalization program removed all

restrictions regarding deposits and lending rates of all government-owned banks. Moreover, the program also removed credit ceilings in all banks within the Indonesian banking sector and replaced it with other monetary tools such as Bank Indonesia certificates and the reduction of the liquidity credit (Rokhim, 2005). Nevertheless, even so the banking sector shifted from government-controlled business into market orientation business, and new entries into the banking sector was still restricted by the government. Therefore, the supremacy of government-owned banks within the banking industry was still preserved.

Towards the end of 1988 (Paket Kebijakan Oktober (Pakto) 1988), the central government introduced the second financial liberalization which was executed in order to increase more savings and more investments, to stimulate growth and to improve the intermediary functions of the banks (Rokhim, 2005). It practically removed all restrictions that have been kept over the last two decades for new entries coming into the banking sector. To be more specific, the second financial liberalization : (1) liberalized the entry of private banks, (2) liberalized the entry of foreign investors through the joint venture, (3) minimum initial capital to established new private banks, and (4) the easiness for banks to open new branches.

Within five years, in 1993 the number of banks in Indonesia increased by 250% and the number of banks new branches increased by 500% (Sato, 2005). Consequently, due to the sharp increased in number of private banks, the government was no longer the major actor in the banking sector. The share of government-owned banks in total commercial banks assets was only 38%. While the share of private banks was about 52% (Sato, 2005). It is clear that this marked the second change in ownership structure within Indonesia's banking industry.

One of the new regulation stated in Pakto (1988), that in order to established a new private bank, it only required a certain minimum amount of initial capital. This conditionality opened up opportunities for business groups, conglomerates, or family owned business to enter the banking sector that was

prohibited from them before. They can easily set up new private banks to serve and support their business operations. Therefore the new major actor for the banking sector in early 1990s was shifted from government –owned banks to business group affiliated banks.

The excessively increase number of banks forced the central government to enhance the bank supervising system and to form supervisory institutions. For example Banking Act No.7 of 1992 provided the framework and the blanket to implement prudential regulations, administrative sanctions for noncompliant banks, criminal penalties for bank managers and employee conducting illegal practices, legal limit lending policy, supervising role for central banks and Ministry of Finance. However despite these efforts to develop bank supervising system, non-performing loan (NPL) was increasing and there were series of banking scandals occurred (Sato, 2005).

The series occurrence of the banking scandals may have caused by several reasons. First, the second financial liberalization caused excessive entry into the banking sector. The market characteristic changed from government-controlled market into competitive market. Since to the number of banks was increasing exponentially within short period of time, the level of competition was becoming very intense. The fierce competition resulted in high cost and higher market risk (Sato, 2005). The players within the banking sector were not ready nor prepared to face this kind of business environment. Second, the central bank were given limit authorization in supervising the banking industry (Tandelilin, Kaaro, Mahadwartha, & Supriyatna, 2007). Finally, all banks within the banking sector assumed that the government would always protect them (Sato, 2005).

One of the main problems with the central bank at that time, the central bank was part of the government structure (Tandelilin, Kaaro, Mahadwartha, & Supriyatna, 2007). Bank Indonesia (BI) who acted as the central bank had limited authority to conduct supervision. Most of or not all BI's policies were influenced by the ruling government. If something went wrong, due to unsuitable regulations

or illegal conducts by one of the banks for example, BI could not take the necessary steps or action without the approval of the central government. The level of control was very weak and slow due to bureaucracy.

As for the increasing NPL matter, it showed an early sign of how weak was the credit system analysis in Indonesian banking sector. The influence of Indonesian bank owners (particularly business affiliated or family-owned banks) were very strong when making decisions in granting credit. Iannotta et al (2007) were investigating the effect of different ownership structures towards banks assets and quality. Similar situation also happened with the government-owned banks where management decisions, most of the time were influenced by government's policies or government's political interests (Shleifer & Vishny, 1994). Before the crisis, the concept of risk management was unthinkable in Indonesian banking industry.

The Asian financial crisis spread to Indonesia by mid of 1997. On October 31st 1997, the central government signed an agreement with IMF, to prevent the crisis for worsening and to lead the nation out from its economic chaos. In the first letter of intent, it was stated that financial sector reform as one of three major policy initiatives that the central government seek for help and support from the IMF (Sato, 2005).

On November 1st 1997, the central government closed 16 private banks as the first step to do the financial reform. In total there were five steps of bank closure and bank nationalization (bank reconstruction process) between end of 1997 to March of 1999 (Enoch, 2000; Sato, 2005). The recapitalization of the reconstructed bank was completed at the end of year 2000. Finally, the government was able to sell almost all their shares in the nationalization bank (privatization) at the end of 2004.

The IMF and the World Bank have offered policy recommendations to emerging countries like Indonesia of how important to take advantage from

privatization and liberalization. This policy recommendations has taken place in a number of emerging banking systems (such as Argentina) in recent years as a response to systemic banking crises (Elosegui & Pinteris, 2004). Hence, in order to take benefit from the impact of privatization and to minimize the risk of early collapse, the process has to be designed carefully (The World Bank, 2001). The Indonesian Banking Restructuring Agency (IBRA), was the appointed institution that was set up as a 'bad bank', to reconstruct the nationalized (former) private banks which later on were privatized to domestic or foreign bank investor. The following is the summary of bank reconstruction process :

Table 2.1 : Result Summary of Bank Reconstruction Process

Type of Bank Reconstruction	Number of Banks	% from 1996 Total Asset
Closure :		
* Private Banks	67	16
Recapitalization :		
* Government-owned	7	36
* Private Banks	7	8
* Regional Banks	12	3
Nationalization		
* Private Banks	12	20

Source : (Sato, 2005; Bank Indonesia, 2010)

Table 2.1 above, showed the total number of banks (both government-owned and private banks) which underwent recapitalization and nationalization are 38 banks and accounted for 68% from the total commercial bank assets. From the ownership perspective, not one government-owned or one regional bank was closed down.

Next table below will show the comparison of between the ownership structure before and after the 1997 Asian financial crisis and at Year 2009 :

Table 2.2 : Ownership Structure

	Prior 1997 Crisis, Year 1996			After Reconstruction, Year 2000			Year 2009		
Ownerships	Banks	Assets*	% of T.Asset	Banks	Assets*	% of T.Asset	Banks	Assets*	% of T.Asset
Government	7	142	36.4	5	505	50.3	5	979	38.3
Private	164	201	51.7	81	350	35	63	1014	39.8
Foreign	41	37	9.2	39	123	12.2	27	340	14.1
Regional	27	11	2.8	26	25	2.5	26	200	7.87
Total	239	391	100.1	151	1003	100	121	2533	100.07

* Asset in trillion rupiah

Source : (Bank Indonesia, 2010),

Table 2.2 showed that the number of private banks and their asset percentage from the total asset decreased significantly, as a result of the nationalization of seven private banks and the closure of sixty-seven private banks. The nationalization of seven private banks have changed the ownership to the government-owned temporarily, which in later stages were sold off to foreign private bank or consortium of business groups. Most of the private banks that were forced to shut down were business group affiliated banks.

The reconstruction of banking sector in Indonesia after the crisis marked the third major bank ownerships structure change. Foreign owned private banks than became another major player in private banks classification replacing the business group affiliated banks. Over the last five years, lots of foreign private banks entered the Indonesian banking sector through buy out or joint venture or merger scheme.

Again from the Table 2.2 above, it showed that the percentage of government banks assets from the total commercial banks asset have decreased to 38.3%. This caused by the fact that at the end of 2004, the government sold of all the shares from banks that underwent nationalization processed. The private banks assets increased about 4% and the foreign as well as foreign joint venture increased by 2%. The 2% increased from the total commercial banks assets is quite significant, despite the short period of time (about two years) that the

foreign and foreign joint venture able to achieve. Significant increase in asset was also achieved by the regional banks.

2.2.2. Why Ownership is Matter

There are similarities between type and structured of banking ownerships. Both type and structured of banking ownership explain the controlling parties of the bank. Tandelilin (2007) defined that ownership type and structure basically concern about who is the major party which has more power to influence the policies and strategies of the bank. However, there is a small difference between type and structured. Structure of banking ownership is about the shareholders proportion. Whereas type of banking ownership is more concern about organizational backgrounds between parties, such as government owned bank, foreign owned bank, domestic bank (private or family owned).

Bank owners, always demand and require their board of management to be able to exploit all firms resources in order to achieve company's goals (Magalhaes, Gutierrez, & Tribo, 2008). In another words, the owners demand their managers to be able to produce profit and increase firm's value. Bank owners play a key role in selecting the board of management that can be suitable to serve their purpose. Therefore, different structure of ownership creates different characteristics of corporate culture. Consequently, it influences the management style, business strategy and business decision making, performance and risk taking.

2.3. Ownerships and Risk

One important issue after the bank reconstruction process after 1997/1998 financial crisis was that the government and IMF demanded and required all banks in Indonesia to implement management reform as well (Sato, 2005). Particularly, banks who need public fund injection. The management reform must be done in all aspects of banking management. For example such as, treasury management, personnel management, business strategy, risk management and etc.

In Indonesia before the 1997/1998 financial crisis, bank owners have great influence in management. Business decision making somewhat subject to "owner's approval". Although most of the banks had organization and procedures for credit management, they were generally had little conscious of risk management (Sato, 2005). Owners have particular interest to control risk management because they were more concerned about return on investment of the bank (Tandelilin, Kaaro, Mahadwartha, & Supriyatna, 2007). During the bank reformation process the government and IMF required bank owners to implement management reform. Establishing new risk management system was one of the management reform features in response to the new institutional environment. Therefore it directly effect how owners can influence risk management.

2.3.1. Risk Management

The role of risk management in today's modern banking practice is an integral part of banking decision making and performance. The banks motivation for risk management comes from financial risks the banks are facing that can lead to bank underperformance. By definition, financial risk in a banking organization is the possibility that the outcome of an action or event could bring up adverse impacts (State Bank of Pakistan, 2009). Such outcomes could either in a direct loss of earnings/capital or may result in the imposition of constraints on bank's ability to meet its business objectives. Most banks can distinguish between expected losses and unexpected losses. The expected losses are those that the bank knows with reasonable certainty that will occur such as default rate of corporate or credit card portfolio. And the unexpected losses are those associated with unforeseen events such as financial crisis or force majeure events (State Bank of Pakistan, 2009).

If banks can implement risk management program effectively, then they may have some advantages: (i) It is inline with obedience function toward the rule; (ii) It increases their reputation and opportunity to attract more wide customers in building their portfolio of fund resources; (iii) It increases their

efficiency and profitability (Tandelilin, Kaaro, Mahadwartha, & Supriyatna, 2007). Ceboyan et al (2004) find evidence that banks effective risk management program have greater credit availability, rather than reduced risk in the banking system. The greater credit availability leads to the opportunity to increase the productive assets and bank's profit.

The services of commercial banks are seek because of their ability to provide market knowledge, transaction efficiency and funding capability (Santomero, 1997). Commercial banks are in the risk business. In the process of providing financial services, commercial banks assume various kinds of financial risks. Performing these roles, commercial banks generally act as a principal in the transaction. Therefore, they use their own balance sheet to facilitate the transaction and to absorb the risks associated with it (Santomero, 1997).

Commercial banks in providing their service basically, the risk can be broken into six generic types (Santomero, 1997) which are :

- Systematic risk : is the risk of asset value change associated with systematic factors (such as interest rates, value of currencies)
- Credit risk : is the risk cause by non-performance by a borrower. This can affect banks (as the lender holding the loan contract), as well as other lenders to the creditor. The financial condition of the borrower as well as the current value of any underlying collateral is of considerable interest to its bank.
- Counterparty risk : is the risk that comes from non-performance of a trading partner. The non performance may arise from a counter party's refusal to perform due to an adverse price movement caused by systematic factors or from some other political or legal constraints that was not anticipated by the principals.
- Liquidity risk : is the risk of a funding crisis. Liquidity risk is associated with the event such as loss of confidence or a crisis of national proportion

fund. In general, core deposits are regarded as low cost funding sources. If financing gap is defined as the difference between a bank's average loans and average core deposit. Then when the economy is down and the financial market becomes more eager to the cash requirements, banks might have more exposure to the liquidity risk.

Furthermore according to Santomero (1997) there are also activities or source of uncertainty performed by commercial banks which do not have direct balance sheet implications such as (i) trust and investment management, (ii) private and public placement through "best efforts" or facilitating contracts, or (iii) the packaging, securitizing, distributing and servicing of loans in the areas of consumer and real estate debt primarily. These items according to Santomero (1997) are absent from the traditional financial statement because they rely on generally accepted accounting procedures rather than a true economic balance sheet. But still, the majority of the risks facing the banking firms is in the on-balance-sheet businesses. In Indonesia there is another type of source of uncertainty which is political risk (La Porta, Lopez-De-Silanes, & Shleifer, 2002). Over 50 out off 60 years of Indonesian banking history, the industry was heavily controlled by the government (Hamada, 2003).

The risks contained in commercial banks main activities are not all borne only by the banks. The banking industry can recognize that an institution need not engage in business in a manner that unnecessarily imposes risk upon nor should it absorb risk that can be efficiently transferred to other participants (Santomero, 1997). In another words, commercial banks should only accept risks that are uniquely a part of the banks array of services. A study by Elsewhere, Oldfield and Santomero (1997) argued that risks facing all financial institutions can be segmented into three separable types which are :

- Risk that can be eliminated or avoided by simple business practices. Risk avoidance involves actions to reduce the chances of idiosyncratic losses from standard banking activity by elimination risk that are superfluous to

the institution's business purpose. There are three types of actions; standardization of process, diversification, and the implementation of incentive-compatible contracts with the institution's management.

- Risk that can be transferred to other participants. For example interest rate risk can be transferred by interest rate products such as swaps or derivatives, or bank can buy or sell financial claims to diversify or concentrate the risks that result in form servicing its client base.
- Risk that must be actively managed at the firm level. Bank can buy or sell financial claims to diversify or concentrate the risks that result in form servicing its client base.

Issues of risk management in banking sector in a country like Indonesia, have greater impact not only on the bank but also on the economic growth. There is an evidence indicate that the past returns shocks from banking sector have significant impact not only on the volatilities of foreign exchange and aggregate stock markets, but also on their prices. Suggesting that bank can be a major source of contagion during crisis (Tandelilin, Kaaro, Mahadwartha, & Supriyatna, 2007; Tai, 2004).

So it is self-explanatory when the central bank of Indonesia in January 2006, announced a new rule about the implementation of risk management, to re-enforced the previous requirement set before the bank reconstruction process. The rule consists of 11 chapters and 21 articles regulating banks to control their risk exposure by implementing risk management based on the principals of international standard (Tandelilin, Kaaro, Mahadwartha, & Supriyatna, 2007). The rules also forces bank to make reports of the risk management both for subsidiaries and consolidated companies. This action indicates that risk management is an important factor to reduce risk exposure in Indonesian banking sector.

Therefore, it is strongly believed that risk management is very important in today's modern banking theory in order to be successful. According to

standard economic theory, managers of value maximizing firms have the obligation to maximize profit without the regard to the variability around its expected value. But there are quite number of literatures such as Stulz (1984), Smith, Smithson and Wolford (1990), Froot, Sharfstein and Stein (1993), Santomero (1995) and growing, stating that active risk management should be included in maximizing firms value. These articles include managerial self-interest, the non-linearity of the tax structure, the costs of financial distress and the existence of capital market imperfections.

2.3.2 Relation Between Ownership and Risk

To examine banks' risk taking behavior, it begins with relying on the traditional risk shifting theoretical hypothesis, by which owners in a limited liability firm have incentives to increase risk (Galai & Masulis, 1976; Esty, 1998). It means that if managers act on behalf the interest of owners, then in principle managers should seek to maximize owners wealth, by taking riskier projects. In the case of banks, study of risk shifting is of special relevance, as banks are in general highly levered respect to non financial firms, which means they experience stronger incentives to risk shifting practices (Magalhaes, Gutierrez, & Tribo, 2008).

Risk taking behavior is influenced by conflicts between owners and managers (Jensen & Meckling, 1976). Managers can pursue their own interests instead of maximizing owners wealth by enjoying private benefits of control or preserving specific acquired human capital (Demsetz & Lehn, 1985). Managers are expected to be more risk averse than owners because managers have to bear specific risk of the firms they manage. Therefore, a firm closely controlled by owners expected to take more risk compare to a firm where the manager's interest overcome owners interests. But interestingly, if an owner is part of the management of the firm, the owner will become more risk averse compare to owners who are not part of the management.

Furthermore, the theory of Demsetz & Lehn (1985) suggested that the ability of managers to adjust bank risk for their benefit not only depends on ownership structure, but also investor protection laws and bank regulations. Large shareholders have greater incentive and power to limit managerial discretion than small shareholders (Shleifer & Vishny, 1986). It means, owners with large voting rights have the authority to force managers to be more risk taker in order to maximize profits and firms value.

The conflict between owner and managers can lead to an agency problem whereby management operates the firm aligning with their own interests and not those of shareholders (Jensen & Meckling, 1976). It creates opportunities for managers to exploit firms resources to maximize their utilities rather than owners utilities. But *Agency Theory* suggests that there are several mechanism to reduce agency problems within the firm. For example, dividend policy can reduce management intention from making over investment decisions. Or incentive mechanism can compensate managers efforts to serve owners interests. Another good mechanism in solving conflict between owners and managers is the equity ownership by managers (Jensen & Meckling, 1976; Fama & Jensen, 1983). This type of mechanism, the interests of shareholders and managers converge as managers shareholding increase, resulting in more risk taking. However, there is a setback in this type of mechanism. As the managers equity ownership increases, it may provide them with voting power that can serve the purpose to pursue personal objectives. Resulting the mangers to be more risk averse, expropriation of shareholders and entrenchment.

However, Tandelilin et al (2007) indicate that private bank owners have the potential to shift agency problem between owners versus manager to owners versus suppliers of funds (mutual-owners). Further issue of agency problem is the interests of bank owners may oppose those of governmental regulators, who have their own purposes which mostly are not in line with maximizing bank value (Boot & Thakor, 1993). Shareholders may want managers to be more risk taker by giving motivation through improving incentive scheme. While the regulators

want managers to take less risk due to stability of financial system. In Indonesian banking industry, the managers of government-owned banks may have different incentives. The managers may also seek to advance their careers in political area by serving particular interest groups (Shleifer & Vishny, 1997). The managers in this case are more risk averse than is optimal from the taxpayer's point of view.

2.4. Ownership and Performance

Over the years, numerous studies have been debated the relationship between ownership and performance. However, the conclusions depend on various theoretical explanations. In the previous sections above it started to discuss about the *Agency Theory* and *management rewards theory* in relation with risk management and ownership that can effect performance. But there are also other theories such as privatization and liberalization (foreign entry) perspectives, property right theory and public choice theory in relating ownership and performance.

Privatization and liberalization (of foreign entry) has taken place in a number of emerging banking systems in recent years as a response to systemic banking crisis (Elosegui & Pinteris, 2004). As part of the effort to support the reconstruction process of the Indonesian banking industry, a new regulation was introduced: "Undang-Undang RI No. 10 Tahun 1998". Through this regulation the government issued Government Act No 29, 1999 (Peraturan Pemerintah No.29 Tahun 1999 Tentang Pembelian Saham Bank Umum). With this act the government granted the ownership of foreign investor in Indonesian banks up to 99% from previously 49% (Peraturan Pemerintah No.7 Tahun 1992 tentang Perbankan). The purpose of this regulation, was to speed up the process of reconstruction and transformation of the Indonesian banking industry from the collapse due to the crisis, by inviting foreign investors. The foreign investors are expected to bring new fresh capital that were needed, knowledge (management system, risk management, etc) and technology.

A study by the World Bank (2001) concluded that facilitating the entry of reputable foreign financial firms to the local market should be welcomed too: they bring competition, improve efficiency and lift the quality of financial infrastructure. A survey by the IMF (2000) on foreign also concluded that, the evidence on the effects of foreign bank entry suggest that the competitive pressures created by such entry lead to improvements in banking system efficiency and performance. But it is still unclear whether a greater foreign banks presence contributes to a more stable banking system and a less volatile supply of credit.

The property rights theory hypothesis that private enterprises perform better than public enterprises because of principle agent problems (Alchian, 1965; De Alessi, 1980). The argument of this theory is, the management of public enterprises consist of appointed politician or bureaucrats, whereas public enterprises management consist of executive with capital market background.

The public choice theory is supporting and complementing the property rights theory perspective. Public choice theory underlined that government ownership usually yields specific inefficiency factors irrespective of market conditions (Levy, 1987; Aharoni, 1986; Niskanen, 1975). Lack of capital market knowledge weakens the owners' control over management, making the management free to pursue their own interest instead of the bank's performance (Kalluru, 2009).

2.4.1. Measurement of Performance

Both economic and finance literature pays a lot of attention to the performance of banks. The performance of banks can be expressed in terms of efficiency, productivity, profitability, competition and concentration (Bikker & Bos, 2008). The main reason is because banks are as seen as special, given their major role in giving pivotal role in providing funding for firms or even channeling funding for national economic development for a country like Indonesia. Banks are regarded to be difficult to observe directly, particularly in the area of

competition and efficiency, since information on output prices (credit rates) is rare and figures on the costs of banking products are unavailable. Many literatures have tried to measure these unobservable variables by many methods. But none of which however, has been entirely conclusive.

Owners of a bank are entitled to its profits, therefore owners of a bank have their interest to maximize these profits. They can achieve this literally: (i) by using the most basic law of business, (ii) by maximizing revenue and (iii) by minimizing costs. Also, depending on the market power of the bank in the input and output markets respectively, they may be able to increase output prices or decrease input prices. Owners are indifferent to the distribution of profits, receiving a return on their investment in the bank either through an increase in the bank's share price or through dividends received (Bikker & Bos, 2008). In theory, the best indicator of the firm's (including banks) financial performance is its stock price and dividend.

Economic theory said that in perfectly competitive situation, profit maximization is equivalent to cost minimization. But there are other factors such as government regulation or economic shocks (crisis) can cause suboptimal performance. However those factors may not have the same impact on both cost minimization and profit maximization. Other possible explanations for deviations from profit maximization fall into two categories, which are incentive problems and inefficiency (Bikker & Bos, 2008). The first category includes all deviations that can be attributed to incentive problems. Wrong incentives causes banks to depart from purely cost minimizing and/or profit maximizing policy. For instance, aforementioned policy depend on owners degree of risk preference, role and influence towards management. The second category harbors all deviations that can be attributed to inefficiency. Inefficiency is defined as the suboptimal use of inputs given outputs or the suboptimal use of the outputs given inputs. A bank may produce at lower costs and with a higher profit than other banks, if it makes better use of its inputs and transforms the into outputs in the cheapest

possible way (Bikker & Bos, 2008). This approach may have proved more rewarding in explaining bank performance.

In measuring bank performance, Return on Equity (ROE) is the best accounting measures of the return to owners (Demirgüç-Kunt & Huizingga, 1999; Kobeissi, 2002). This ratio indicates how well the managers and employees are managing the bank to earn a high return for owners. ROE combines both operational performance and the effective use of financial leverage. On the other hand, Return on Assets (ROA) is the best accounting measures in measuring operational profitability (Magalhaes, Gutierrez, & Tribo, 2008). ROA measures the ability of managers and employees to manage all aspects of the day to day functions of the bank. In other words ROA measures the effective operational performance

2.4.2. Relation Between Ownership and Performance

Conflict of interests between managers and owners are more effecting firms with dispersed ownership structures. This conflict evolves from the difficulties of small shareholders to oversee managerial activities for corporate control, who have to rely on external monitoring through the market (Fama & Jensen, 1983). On the other hand, conflicts between managers and shareholders are not so obvious and less important in firms with concentrated ownership structure. The majority shareholders has strong control and incentives to monitor managers and even replace them in case they do not perform as expected (Franks, Mayer, & Renneboog, 2001).

Managerial activities are difficult to monitor in a firm with dispersed ownership structure. Whereas concentrated ownership structure would be more effective in principle to enhance firm's performance due to firmer controlling rights. However, there is a potential conflict of interests in a firm with concentrated ownerships, if the major shareholders might engage in activities that expropriate minority shareholders (Shleifer & Vishny, 1986). Therefore

concentration of ownership may have the possibility to cause negative impact on firm's performance.

Thus this theoretical hypotheses of monitoring and expropriation have slightly different perspective regarding the relationship between ownership and performance. Burkart et al. (1997) have the opinion that monitoring is purely beneficial by describing trade-off between the benefits of monitoring and the ones of managerial discretion. They also proposed that the ownership structure as a commitment device to delegate a certain degree of control. Managers initiatives to seek for specific investment in order to maximize firms value must be exploited.

The policy recommendations from the World Bank and IMF to encourage privatization and foreign entry in the emerging banking systems are based on the argument that foreign investors have the capability to improve the efficiency and solvency problems. There are lots of empirical evidence showed that private banks are more profitable and more efficient than government owned-banks (Iannotta, Nocera, & Sironi, 2007; Kalluru, 2009; Kobeissi, 2002). Moreover, it is argued that the presence of foreign banks in an emerging banking system like in Indonesia facilitates the transfer of improved risk management, technology and promotes competition, and hence the overall performance. (Moreno & Villar, 2005; Elosegui & Pinteris, 2004; Unite & Sulllivan, 2002; Claessens, Demirgüç-Kunt, & Huizinga, 2001).

The view of the World Bank and IMF regarding foreign entry issue, is supported by a research study of Moreno and Villar (2005), about the increased role of foreign bank entry in emerging markets (such as Asia, Latin America, Middle East, and North African countries). The study concluded that a larger foreign bank presence can enhance competitiveness of the banking sector. Competitive environment is desirable in order to enhance the efficiency of financial services, stimulate innovation and contribute to stability. Foreign bank

entry can also help countries recapitalize their banking systems after being hit by a crises, providing the basis for a revival of bank credit.

Moreno and Villar (2005) further suggested that foreign banks entry have positive impact on financial and economic stability by permitting greater diversification and by improving risk management techniques. As those techniques become more deeply rooted in the local banking culture, the stability of the local financial system should improved. But there are two issues sometimes raised facing the latter. First, better capability and extra resources of foreign banks might allow them to take more profit and to draw away good customers away from the domestic bank. And second issue is, foreign banks could concentrate their lending only on large enterprises, instead of small and medium sized enterprises. In developing economics like in Indonesia, the small and medium sized enterprises are the ones stimulating the economy. Nevertheless, foreign banks have the potential to contribute in making more capital or providing liquidity available when needed.

Foreign bank may penetrate to focus on the low credit risk segment of the market and attracted customers away from domestic banks. Facing increased competition from the foreign banks, the domestic banks are forced to target high credit risk segment of the market to compensate for their lost of market share. Thus, this situation may have positive significant implication towards the performance of domestic banks. High credit risk segment should produce higher interest income which give positive effect to net income (Iannotta, Nocera, & Sironi, 2007). This view is now happening in Indonesia, where domestic commercial banks are pursuing high credit risk such as credit with no collateral or known as 'Kredit Tanpa Agunan (KTA)'. Even though the percentage of loan loss is quite high, but the extremely high interest earning compensate the loss and yet still produce higher interest income (Tjatur, 2010). Interestingly, this phenomena still attract the foreign banks such as Standard Chartered, Royal Bank of Scotland (RBS), HSBC, and Citibank in Indonesia. For example in the first quarter of 2010, non performing loan in HSBC Indonesia reached Rp 2,93 trillion

(triple the amount of the same period in 2009), which about 10% of that amount comes from KTA. In the same period Standard Chartered Bank also post non performing loss to approximately Rp 977 billion compare to the same period in 2009 which only Rp 2,39 billion (Tjatur, 2010).

Looking only at the relation between risk taking behavior does not convey clear picture in terms of bank performance. It is also very important to understand how banks performance is related to ownership structure, legal investor protection and bank regulations (Magalhaes, Gutierrez, & Tribo, 2008). However the discussion in this paper will only limit to study the issues in relating ownership structure, risk taking and performance. Because the other issues related to legal investor protection and bank regulations would need a separate research study. For example, banks that have high levels of leverage and risk also face the costs of complying with existing regulatory standards. The threat of regulatory action increases the implicit costs of higher risk and attempt to change bank behavior (Elosegui & Pinteris, 2004).

CHAPTER 3
DATA, HYPOTHESES AND METHODOLOGY

3.1 Data

The analysis in this study 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, but only 105 banks that were selected in this study. One of reason for selecting the bank is, among 115 banks by end of 2009 several of them are not commercial bank such as Bank Ekspor Indonesia and JP. Morgan. Therefore those banks can not be compared to the normal commercial banking. Another reason is the number of banks each year over the study period were not the same. The difference in the number of banks is characterized by mergers, take over or bank closure within the industry. Since merger or takeover bank institutions can not be considered to have disappeared, then they have to be retained in the sample as individual entities within the classification.

The analysis were using data from quarterly income statement, quarterly balance sheet and ownership information collected from the central bank database (Bank Indonesia) between 2004-2009. The total number of observations during the period of study was 630 observations. Merger and takeover process during the study period changed the number of banks within classification. For instance, while there were 47 domestic banks in 2004, by 2009 the number decreased to 41 banks. The penetration of foreign private banks into the Indonesian banking industry over the past several years has increased the number of foreign banks from 25 banks in 2004 to 32 banks in 2009.

3.2 Hypothesis

There are two theories about government participation in the financial market which are the *development view* and the *political view*. The *development view theory* suggested that in a country where the economic institutions are not well developed, government ownership institution such banks play a major role to jump start both financial and economic development to foster growth, On the other hand *political view theory* argued that governments acquire control of enterprises and banks in order to provide employment and to serve its political interests. In both views, the government finances projects that would not get private financed (La Porta, Lopez-De-Silanes, & Shleifer, 2002; Sato, 2005).

While such arguments have some validity, recent evidence however point out to the cost of government ownership banks, suggesting that government have a depressing impact on overall growth (La Porta, Lopez-De-Silanes, & Shleifer, 2002). Greater government ownership of banks tends to be associated with lower bank efficiency, less saving and borrowing, lower productivity and slower growth. (Bart, Caprio, & Levine, 2000). On average, most studies showed that government banks have poorer loan quality and higher insolvency risk than other types of banks. And also most of the government banks are less profitable and riskier compare to other banks (Iannotta, Nocera, & Sironi, 2007). This finding from Iannotta (2000) consistent with the hypothetical theory of Barth et al (2000). On the other hand majority of researches indicated that private ownership of banks is associated with superior economic performance (Lang & So, 2002; Cornett, Guo, Khaksari, & Tehranian, 2000; Creane, Mobarak, & Sab, 2003).

Theoretically this is consistent with the *agency relationship theory* that was hypothesized by Jensen and Meckling (1976). Government ownership would be deemed inefficient due to the lack of capital market monitoring which according to the Agency theory would tempt the manager to pursue their own interest at the expense of the enterprise. On the other hand managers of private banks (both domestic and foreign) have greater intensity of environmental pressure and capital market monitoring which punishes inefficiencies and makes

private owned firms economically more efficient (La Porta, Lopez-De-Silanes, & Shleifer, 2002).

Based on several suggested theories above in regards of government ownership, and considering that government owned banks still dominate in Indonesia. Where government intervention is high in giving credit allocation, especially credit to finance high risk or low return long term projects to support the economic development agenda where private banks would have avoided (unless the project is guaranteed by the government). It would be expected that government banks will have inferior performance level and lower asset quality compared to private banks. Therefore this study suggested that :

Hypothesis 1 : Ownership structure in Indonesian banks is concentrated (homogeneous)

H_{02} : $\mu_{Concentrated} = \mu_{Disperse}$

H_{12} : $\mu_{Concentrated} < \mu_{Disperse}$

Hypothesis 2 : Government banks has the lowest quality of assets

H_{02} : $\mu_{LOSS\ Government\ Banks} = \mu_{Loss\ Non\text{-}Government\ Banks}$

H_{12} : $\mu_{LOSS\ Government\ Banks} < \mu_{Loss\ Non\text{-}Government\ Banks}$

Hypothesis 3 : Private (both foreign and domestic) banks perform better than government and regional.

H_{03} : $\mu_{ROA\ Private\ Banks} = \mu_{ROA\ Non\text{-}Private\ Banks}$

H_{13} : $\mu_{ROA\ Private\ Banks} > \mu_{ROA\ Non\text{-}Private\ Banks}$

There are many evidence from the studies around the world indicates foreign banks on average are less efficient compare to domestic banks (Kobeissi, 2002). But according to recent studies across Europe, United Kingdom, and United States found that domestic banks have both higher cost efficiency and profit efficiency than foreign banks (Berger, DeYoung, Genay, & Udell, 2000). It is important to notice that, most of this studies were done in developed countries

particularly United States. But on contrary, even more recent study in Europe done by Iannotta et al (2007) and Magalhaes et al (2005) indicated that partly or full foreign owned banks perform better and less riskier.

However, studies that were conducted in developing countries indicated that foreign banks are better performers and less riskier. Foreign banks have higher interest net margin and higher profitability even though they have higher overhead expense (Claessens, Demirgüç-Kunt, & Huizinga, 2001). Claessen et al (2001) reported that in many developing countries (example Egypt, Indonesia, Argentina and Venezuela), foreign banks are significantly have higher interest margins than domestic banks, therefore foreign banks have achieve significantly higher net profitability than domestic banks.

There are several reasons why there are the contradicting results between developed countries and developing countries in terms of banking performance and risk behavior. Different markets, competitive and regulatory environments between developed countries and developing countries make those differences (Claessens, Demirgüç-Kunt, & Huizinga, 2001). Within developing countries, the reasoning suggested for the improved performance of foreign over domestic banks included exemption from credit allocation, regulation and other restriction, market inefficiencies and outmoded banking practices that allow foreign banks better performance (Claessens, Demirgüç-Kunt, & Huizinga, 2001). Indonesia is still considered a developing countries, therefore:

Hypothesis 4 : Foreign banks perform better than government, regional and domestic banks.

H_{04} : $\mu_{ROA\ Foreign\ Banks} = \mu_{ROA\ Non\text{-}Foreign\ Banks}$

H_{14} : $\mu_{ROA\ Foreign\ Banks} > \mu_{ROA\ Non\text{-}Foreign\ Banks}$

Jensen and Meckling (1976) famous *Agency Theory* and Demsetz and Lehn (1985) management rewards theory are widely used to explain why different ownership type and ownership structure influence firms' characteristics and

behavior towards risk taking. The *Agency Theory* views that there is a relationship between ownership structure and performance: the cost of monitoring makes private or closely-held firms economically more efficient than publicly owned firms. The *Agency Theory* suggested that closely controlled firms are most like more risk taker compare to public owned firms. Managers of public owned firms, which are more disperse in ownership concentration, are expected to be more risk averse because they have to bear specific risks of the firms (Demsetz & Lehn, 1985).

In Indonesian banking industry, the majority of ownership structure is mostly concentrated, particularly government-owned banks. Furthermore in a developing country like in Indonesia, government-owned banks play a key role in national economic development (La Porta, Lopez-De-Silanes, & Shleifer, 2002). Where government-owned banks may face public policy to serve particular economic sectors (such as agricultural and small-medium enterprises) or high risk government projects which are considered essential from social point of view. Therefore the government-owned banks are somewhat 'forced' to be aggressive.

Hypothesis 5 : Government-owned banks are more risk taker compare to domestic and foreign bank

$$H_{05} : \mu_{LN(\sigma)\ Government\ Banks} = \mu_{LN(\sigma)\ Non\text{-}Government\ Banks}$$

$$H_{15} : \mu_{LN(\sigma)\ Government\ Banks} > \mu_{LN(\sigma)\ Non\text{-}Government\ Banks}$$

The World Bank (2001) and IMF (2000) have suggested that privatization and liberalization of foreign entry can improve efficiency and the local financial infrastructure by bringing competition. This perspective was further enhance by the study of Moreno and Villar (2005), suggested that foreign entry have positive impact on financial and economic stability through diversification and improved risk management. Therefore, there are indication that foreign-owned banks are more sound in terms of stability. Based on these perspective then :

Hypothesis 6 : Foreign banks are more stable in terms of stability compare to government and domestic banks.

H_{06} : $\mu_{LN(Z)\ Foreign\ Banks} = \mu_{LN(Z)\ Non\text{-}Foreign\ Banks}$

H_{16} : $\mu_{LN(Z)\ Foreign\ Banks} > \mu_{LN(Z)\ Non\text{-}Foreign\ Banks}$

Bank performance and risk management are naturally interrelated (Tandelilin, Kaaro, Mahadwartha, & Supriyatna, 2007). But the two represents the risk and return trade off. If a bank can manage its risk better, the bank will get advantage to increase their performance. Better risk management indicates that banks operate their activities at lower risk. Better bank performance also increase customers confidence, hence, increasing bank reputation and image from public point of view. The bank then will get access to get lower cost of capital and other sources of funds. Additionally the banks also get more opportunities to increase the productive assets, leading to higher bank profitability (Cebenoyan & Strahan, 2004). In controversy, Iannotta et al (2007) also pointed out that good performance can be the result of aggressive risk taking in banking practice. Risky asset yield higher interest income which result in positive impact to performance.

In Indonesia at present moment, most of banks implement risk management practice. Even though there are still few domestic banks that are pretty much controlled by the owners, and more risk taker compare to the average bank in the industry. Therefore this study suggested that :

Hypothesis 7 : There is a negative correlation between performance and risk management

H_{07} : $\rho_{Risk.Performance} = 0$

H_{17} : $\rho_{Risk.Performance} < 0$

3.3 Methodology

The methodology chosen to conduct for this kind of particular study is based on panel data analysis. More specifically, in many case the data is

performed using dynamic panel estimation such as Generalized Method of Moments (GMM). The GMM was chosen because the characteristics of the database, which consists of observations of historical bank accounting and ownerships variable. But the main justification for the use of panel data analysis is that, by introducing the time dimension. Panel data techniques are able to mitigate the influence of spurious characteristics in the relation between managers and owners (Magalhaes, Gutierrez, & Tribo, 2008).

But unfortunately in Indonesia, bank ownership changes quite often particularly during the reconstruction period (1998-2003) and over the past three years. Because of this phenomena, the number of banks within each ownership classification differ within each year during the period of this study (2004-2009). Panel data analysis would not be suitable to be used for analysis. 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. Next is to run bivariate comparison test, where all variables between bank ownership category are compared from one category to another (one to one basis comparison). The method for both of these tests are using Independent sample T-test. Following bivariate comparison test, next is to run multiple comparison test. In this test, each and all variables of four ownership categories are compared simultaneously. The method for multiple comparison test is using One-Way Annova. If the results from One-Way Annova show any significantly different from the variables then the Duncan test will determine the order of how different between the ownership categories.

Before running the regression analysis, testing the assumption is required. 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 non-multicolinearity test is correlation analysis for independent variables. If both

assumption tests are justified then the regression analysis are possible. The mathematical model for regression analysis are presented in section 3.4 below.

In this study, testing and analysis are using SPSS 15.0 software. And the regression analysis is using Eviews 5.1. The significant level used for all analysis is five-percent.

3.4. Model and Variables

3.4.1 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, Kaaro, Mahadwartha, & Supriyatna, 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 (largest proportion of ownership).

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

OS : is 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

3.4.2 Proxy Variables and Model for Risk

Risk management is representing management's 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 correlation 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, & Sironi, 2007; Magalhaes, Gutierrez, & Tribo, 2008). Riskier loan should produce higher net interest of income, but poor asset quality should increased banks cost of funding. This ratio also represents managerial risk taking behavior relative to all organization resources. Higher NPL indicates that banks take more risk in their operations and investment.
- *Ln(q)* is the log asset volatility in order to measure the risk aggressiveness (Iannotta, Nocera, & Sironi, 2007; Magalhaes, Gutierrez, & 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, & Sironi, 2007; Magalhaes, Gutierrez, & 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 as defined in 3.4.1
- *GROWTH* : It is the percentage increase/decrease of bank commercial asset from previous year. This variable represents the growth rate of the banking industry. The aggressiveness and quality of the assets within each

banking classification have indications that there are correlated with the banking industry. But the net impact of those correlations are uncertain.

- *YEAR* : is a dummy variable denoting the year of the a 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, & Sironi, 2007; Magalhaes, Gutierrez, & 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, & 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, & 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, & 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 to maintain 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 :

- $LOSS_{jt} = a + bOS_{jt} + cCF_{jt} + dGROWTH_{jt} + eYEARt + \varepsilon$ (Eq. 3.1)
- $Ln(\sigma)_{jt} = a + bOS_{jt} + cCF_{jt} + dGROWTH_{jt} + eYEARt + \varepsilon$ (Eq. 3.2)
- $Ln(Z)_{jt} = a + bOS_{jt} + cCF_{jt} + dGROWTH_{jt} + eYEARt + \varepsilon$ (Eq. 3.3)

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

3.4.3 Proxy Variables and Model for Performance

In defining bank performance, this study depend on a measure of bank performance popular in the literature (Claessens, Demirgüç-Kunt, & Huizinga, 2001; Demirgüç-Kunt & 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, & Tribo, 2008). Where risks are measured based on banks assets quality, aggressiveness and how banks managing and assessing their

earning assets. Hopefully with this consistency, the inter-relationships between performance and risk can be revealed.

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

- *OS* is the ownership type as defined in 3.4.1
- *GROWTH* : It is the percentage increase/decrease of bank commercial asset from previous year (as defined in 3.4.2).
- *YEAR* : is a dummy variable denoting the year of the a bank on a particular time. ($y2002 = 1, y2003 = 1, \ldots\ldots\ldots y2009 = 1$ 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 (as defined in 3.4.2)
  - *LOANS* : the ratio of loans to total earning assets (as defined in 3.4.2)
  - *LIQUID* : The ratio of liquid assets to total assets (as defined in 3.4.2)
  - *DEPOSITS* : the ratio of total deposits to total funding (as defined in 3.4.2)
  - *CAPITAL* : The ratio of book values of equity to total assets (as defined in 3.4.2)
  - *LOSS* : the ratio of loan loss to total loan (as defined in 3.4.2)

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

CHAPTER 4
ANALYSIS AND DISCUSSION

4.1. Result of Bank Selection

As was mentioned earlier in 3.1, the total number of banks in Indonesia by the end of Year 2009 was 115 banks. But not all of those banks are commercial bank. Therefore bank selection is required in this study. The result of the bank selection is presented in the table below.

Table 4.1.1 : 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)

Table 4.1 showed that the number of banks in each classification (except regional banks) are not the same, particularly for foreign and domestic banks. This is due to merger, take over and closure process in Indonesian banking industry. Since year 2000, foreign entry (due to Government Act 29, 1999) to the Indonesian banking industry had started to increase. It shown in table 4.1 the foreign-owned bank increased steadily through mergers and take-over (of domestic banks mainly), while the domestic-owned bank decreased. In 2007, a significant number of domestic banks were merged or taken over by foreign banks. For example Bank Hana (former PT. Bank Bintang Manunggal), Bank Andara (former PT. Bank Sri Partha), PT. Rabobank Indonesia took over PT. Bank Haga and PT. Bank Hagakita, and Bank Commonwealth took over PT. Bank Arta Niaga Kencana. On the other hand, in 2007 there was one foreign-owned bank, Finconesia became a domestic bank called PT. Bank Agris.

4.2 Descriptive Results

Table 4.2.1 reports sample descriptive statistics for both risk and performance with their components. First part in table 4.2.1 presented statistics for the entire sample, and the second part the statistics are broken down into per ownership category.

Table 4.2.1 : 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 *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*	Mean *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)

Next in table 4.2.2, reports the sample descriptive statistics for both risk and performance with all their components, of government-owned banks during the study period 2004-2009. The performance of Government-owned banks (*ROA*) is slightly declining. The probable cause is non-performing loan raised up to over nine-percent in 2005 but coming down steadily the following years. As the *Size* grew year by year, the aggressiveness in taking risk (*Ln(σ)*) also increased. The negative effect towards banks (*Ln(Z)*) soundness can be seen from the decrease value over the period.

Table 4.2.2 : Descriptive statistics for Government-owned banks

	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*
GOV											
2004	7	6	3.41	2.46	-4.47	3.75	80.54	68.26	69.69	7.36	17.51
			2.33	*0.27*	*0.89*	*2.61*	*86.03*	*20.81*	*16.34*	*4.02*	*4.27*
2005	6	6	9.30	2.38	-4.95	2.52	99.13	73.67	70.41	9.27	17.47
			9.35	*0.19*	*0.95*	*1.75*	*94.36*	*20.71*	*16.33*	*7.21*	*3.75*
2006	6	6	7.70	2.38	-5.24	2.59	108.39	74.91	69.26	7.87	20.24
			5.65	*0.26*	*1.12*	*1.48*	*99.69*	*20.40*	*18.34*	*6.73*	*5.59*
2007	6	6	4.65	2.21	-5.55	2.93	128.46	77.78	71.37	13.27	18.55
			2.60	*0.27*	*0.86*	*2.02*	*118.56*	*17.20*	*16.09*	*11.40*	*4.36*
2008	6	6	3.53	2.17	-5.48	2.66	146.03	81.83	80.41	12.51	15.55
			1.70	*0.27*	*0.78*	*1.40*	*134.56*	*13.85*	*16.04*	*9.71*	*4.36*
2009	6	6	2.92	1.37	-5.18	2.49	171.24	83.64	77.72	13.86	16.17
			1.38	*0.17*	*0.95*	*1.05*	*152.55*	*13.74*	*15.18*	*6.29*	*3.31*

(Statistical significance at the level of 5%)

(Source : Compiled by Author based on the statistical results)

Table 4.2.3, reports the sample descriptive statistics for both risk and performance with all their components, of regional (BPD) banks during the study period 2004-2009. Regional banks have steady performance (ROA) and growth (*Size*). Even though over the period of six years the size of the asset almost double, but still regional banks can maintain their loss percentage around two-percent and steady behavior towards risk taking (*Ln(σ)*). Therefore, soundness of regional banks are also steady.

Table 4.2.3 : Descriptive statistics for Regional banks

	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*
Reg											
2004	26	26	2.39	2.58	-5.03	3.96	3.02	91.34	61.57	7.33	19.99
			1.52	*0.26*	*0.69*	*1.62*	*3.05*	*13.27*	*20.25*	*4.67*	*5.64*
2005	26	26	2.76	2.52	-5.11	3.58	5.72	92.79	57.78	11.52	19.42
			2.85	*0.23*	*0.43*	*1.42*	*5.62*	*10.06*	*22.70*	*8.91*	*5.02*
2006	26	26	2.33	2.59	-5.47	3.39	6.12	93.41	48.99	10.69	25.15
			2.48	*0.29*	*0.45*	*1.19*	*5.45*	*9.70*	*20.22*	*7.83*	*8.78*
2007	26	26	2.24	2.39	-5.25	3.06	6.48	91.55	59.92	9.79	23.40
			2.00	*0.33*	*0.57*	*1.35*	*5.66*	*12.94*	*24.42*	*5.28*	*9.68*
2008	26	26	2.56	2.49	-5.40	3.69	7.07	93.06	78.24	7.74	21.47
			2.81	*0.26*	*0.98*	*1.13*	*6.30*	*11.02*	*27.55*	*5.40*	*6.51*
2009	26	26	2.27	1.65	-4.99	3.66	7.62	94.39	88.62	8.99	21.84
			2.03	*0.30*	*0.40*	*1.07*	*7.10*	*8.61*	*20.90*	*4.09*	*8.13*

(Statistical significance at the level of 5%)

(Source : Compiled by Author based on the statistical results)

The regional banks are closely associated with regional economy. The regional banks (BPD) are used by the local governments (PemDa) to channel economic funding for regional developments. The main source of funding is from regional state budget (APBD). The establishment of BPD is to be one of the pillars for regional development, that has the aim to stimulate the regional economy such as infrastructure, SME, and agriculture sector. Most of the projects are usually government based projects that are 'guaranteed' by the regional government. Therefore the steady results low non-performing loan, and constants result of risk taking behavior and bank's soundness, in general are explainable.

Table 4.2.4, reports the sample descriptive statistics for both risk and performance with all their components, of Foreign-owned banks during the study period 2004-2009. The number of foreign banks in Indonesian banking industry increased by 30% and their size increased by 100% over the period of six years. But their performance (*ROA*) somewhat decreasing due to the expansion of the business. Bank soundness (*Ln(Z)*) is also decreasing even though the aggressiveness behavior towards risk is quite stable. Surprisingly, their loss percentage is higher compare to regional and domestic banks.

Table 4.2.4 : Descriptive statistics for Foreign-owned banks

	Total Obsv.	No.of Banks	Loss(%)	Ln(Z)	Ln(σ)	ROA(%)	Size (tri Rp)	Loan(%)	LDR(%)	Dep	CAR(%)
			Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*
FOR											
2004	25	25	5.53	2.83	-4.47	3.55	11.24	75.74	91.42	8.56	30.75
			5.49	*0.52*	*0.84*	*1.51*	*13.84*	*19.86*	*57.02*	*14.72*	*19.91*
2005	27	27	4.99	2.68	-4.69	3.07	15.39	78.17	98.42	7.57	26.67
			3.59	*0.46*	*0.63*	*1.82*	*16.63*	*18.40*	*44.05*	*9.51*	*15.14*
2006	27	27	4.36	2.69	-4.84	3.46	17.07	81.16	103.17	5.16	31.12
			3.19	*0.51*	*0.60*	*2.33*	*18.96*	*17.08*	*40.16*	*5.22*	*19.00*
2007	31	31	3.56	2.45	-5.07	2.52	18.65	85.37	97.25	6.32	28.54
			3.05	*0.55*	*0.80*	*2.47*	*23.45*	*12.77*	*44.21*	*5.07*	*19.64*
2008	32	32	3.30	2.60	-4.83	2.54	22.46	82.92	99.72	8.87	29.02
			2.88	*0.55*	*0.96*	*2.65*	*27.29*	*13.79*	*53.69*	*9.14*	*20.55*
2009	32	32	4.91	1.76	-4.64	1.25	22.16	84.24	87.78	18.32	37.12
			6.32	*0.93*	*0.83*	*5.93*	*26.78*	*17.36*	*50.99*	*40.63*	*37.55*

(Statistical significance at the level of 5%)

(Source : Compiled by Author based on the statistical results)

Since the central government allowed foreign banks to become major shareholders in Indonesian commercial banking, between 2004-2009 foreign

banks asset grew more than 250%. In particular between 2006-2009, where their asset grew close to 200%. The foreign banks assessed/recognized that the Indonesian macro-economy on its upward trend (refer to Graph 1.1) and certainly the vast potential of its banking market. This seemed to be one of the reasons for the aggressiveness of foreign banks in risk-taking behavior, and as the consequences the NPL is rising which also effected the bank's soundness. The declining *ROA* is because the newly acquired assets may need longer time period to be justified.

Table 4.2.5, reports the sample descriptive statistics for both risk and performance with all their components, of private domestic banks during the study period 2004-2009.

Table 4.2.5 : Descriptive statistics for Domestic banks

	Total Obsv.	No.of Banks	Loss(%)	Ln(Z)	Ln(σ)	ROA(%)	Size (tri Rp)	Loan(%)	LDR(%)	Dep	CAR(%)
			Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*	Mean *Std.Dev*
DOM											
2004	47	47	2.75	2.53	-5.14	2.61	5.35	88.24	70.21	11.26	25.59
			2.19	*0.59*	*0.91*	*1.65*	*21.83*	*15.40*	*20.57*	*10.67*	*29.04*
2005	46	46	3.73	2.45	-5.14	1.77	6.24	89.48	73.98	10.76	25.62
			2.89	*0.60*	*1.04*	*1.71*	*22.74*	*15.61*	*22.53*	*11.02*	*31.18*
2006	46	46	3.77	2.40	-5.03	1.62	6.94	90.33	70.25	8.45	25.85
			2.90	*0.56*	*1.01*	*1.92*	*26.56*	*14.05*	*18.47*	*7.66*	*23.66*
2007	42	42	2.96	2.45	-5.31	1.99	9.03	91.11	76.30	8.53	36.22
			2.75	*0.71*	*1.03*	*2.58*	*34.24*	*12.65*	*21.67*	*9.26*	*57.73*
2008	42	42	2.78	2.68	-5.38	1.45	10.05	91.42	88.99	8.06	29.20
			2.79	*0.86*	*1.11*	*1.42*	*39.18*	*11.26*	*30.28*	*9.35*	*18.09*
2009	41	41	3.01	1.63	-5.02	1.44	12.09	89.39	78.26	11.70	29.36
			4.47	*0.98*	*0.98*	*1.91*	*45.04*	*13.53*	*22.35*	*19.18*	*18.82*

(Statistical significance at the 5% level)

(Source : Compiled by Author based on the statistical results)

The number of domestic banks decreased about 10% over the period of six years. But their total asset grew more than double and their performance somewhat decreasing, which is quite understandable the soundness of the bank somewhat decreasing. The loss percentage is quite stable and their aggressive behavior is also pretty much stable.

Even though the private domestic banks asset grew more than double in six years, but the growth is solely dominated by Bank Central Asia (BCA). In

2004 there were 47 private banks with total asset of about Rp 251 trillion, in which Rp 148 trillion belonged to BCA. By the end of 2009 there were 41 private banks with the total asset more than Rp 500 trillion, in which Rp 280 trillion belonged to BCA. There were two other banks that also made significance improvement in asset, Bank Mega and Panin Bank. Bank Mega increased its asset by more than double (from Rp 18 trillion to Rp 39 trillion) and Panin Bank increased in asset by 350% (from Rp 22 trillion to Rp 76 trillion). But the other 38 private domestic banks are somewhat stagnant and not significantly made any improvement. It seemed the aggressiveness from the foreign banks, made it difficult for private domestic banks to compete due to size difference and source of funding. Several of these private banks were even taken over the foreign banks.

4.3 Bivariate Comparison Test

Table 4.3.1 presented the result for t-tests for equality of Government vs. BPD, Government vs. Foreign, Government vs. Domestic, BPD vs. Foreign, BPD vs. Domestic, and Foreign vs. Domestic. The purpose of this test is to compare banks in pair directly between four different ownership structures. All variables, independent and dependent, are compared one-to-one.

Table 4.3.1 : 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)

4.3.1 GOV vs. REG

Comparing between the government banks, GOV vs. REG, the result shows that regional banks performs better in terms of ROA significantly. This seem to be explained that government-owned banks has a lower asset quality compare to BPD. In another words, government-owned banks have a higher non-performing loan (*LOSS*) compare to regional banks. There is no significantly difference in terms of return on asset volatility ($Ln(\sigma)$), but there is a significantly difference in terms of bank soundness between ($Ln(Z)$) GOV and BPD. The regional banks are more sound compare to the big government banks. This seem can be explained that the regional banks (BPD) are better capitalized compare to the big government banks (GOV).

Other significant difference between GOV vs. BPD are *Size* (total asset in trillion Rp) and *Loan* ratio. The government banks (GOV) has a much bigger asset compare to BPD. And in Loan ratio, the BPD has a higher credit distribution ratio compare to GOV. Three other variables, liquidity ratio (*LDR*), Deposit and $Ln(\sigma)$, are not significantly different between government-owned banks and regional banks

4.3.2 GOV vs. FOR

Comparing between big government banks and foreign-owned, GOV vs. FOR, performance in terms of *ROA* is not significantly different. But in terms of return on asset volatility $Ln(\sigma)$ and the soundness of the bank Ln(Z), they are significantly different. Government-owned banks have a lower Ln(Z) compare to foreign-owned banks. Which means that that the foreign banks are more sound compare to government-owned banks. This seem can be explained that foreign banks are better capitalized compare to government-owned banks.

Size does make the difference in capitalization. A government bank like Bank Mandiri has a total asset of Rp 370 trillion, whereas a foreign bank like

Citibank only about Rp 50 trillion. The CAR of Bank Mandiri is about 15%, and for Citibank the *CAR* is about 30%. In terms the amount of equity, it is a huge difference. Citibank only needs Rp 15 trillion to cover its weighted risk credit exposure, whereas Bank Mandiri needs Rp 55 trillion. Nevertheless in many studies also found that, foreign banks are easier to raise capital or liquid funds on international financial market to expand their assets with strong capitalization. For example, in 2007 Bank Niaga took over Bank Lippo. The two banks merged and recapitalized to form as CIMB Niaga.

On the other hand, on the volatility of return on asset *Ln(σ)*, government-owned bank are smaller (more negative) compare to foreign owned. Which means that foreign-owned banks have a higher return on asset volatility. The aggressive expansion and penetration of foreign banks in Indonesian banking market over the last few years, might be the explanation. Three other variables which are *Loan* ratio, *Deposit* and *LOSS*, are not significantly different between government owned banks and foreign banks.

4.3.3 GOV vs. DOM

Comparing between government-owned banks and private domestic banks, GOV vs. DOM, performance in terms of *ROA* there is a significantly different. The government-owned banks have a higher *ROA* compare to private domestic banks. Even though, government-owned banks have higher non-performing ratio compare to private domestic banks that have should give a negative effect towards performance. This phenomena may have caused by the fact that government-owned banks have a much higher asset value compare to private-domestic banks.

In 2009, Bank Mandiri's earning before tax was about Rp 10,5 trillion. The total earning before tax for the 41 private domestic banks is about Rp, 12 trillion, where BCA alone already reached Rp 8.8 trillion. However, even the government-owned banks have higher non-performing loan ratio, but their assets

are more productive that can compensate the negative effect to contribute into a positive effect towards performance. Therefore, performance in terms of ROA the results indeed showed that government-owned banks are higher compare to private domestic banks.

Other variables that are significantly different between government-owned banks and private domestic banks, are the *Loan* ratio and *CAR* ratio. Private domestic banks have a higher loan ratio compare to government-owned banks. Which means private domestic banks give more credit to the market compare to government owned banks. This condition can be understandable because government-owned banks have more diversification in their business products. But the private banks are better capitalized compare to government-owned banks. Again this may be the cause of such a huge gap in terms of asset size, as was explained in 4.3.2. In terms of equity, private domestic bank need only a much smaller amount to cover its risk weighted credit exposure compared to government banks. So it seems that private domestic banks are 'better' capitalized.

There are four other variables that are not significantly different between government-owned banks and private domestic banks. Those four variables are liquidity ratio (*LDR*), Deposit, return of asset volatility *Ln(σ)*, and the soundness of the bank *Ln(Z)*. This is one of the setbacks when try to compare small group of banks with huge controlling asset and a group with high number of banks but only controlling smaller asset.

4.3.4 REG vs FOR

Comparing between regional banks and foreign-owned banks, REG vs. FOR, performance in terms of *ROA* there is significantly different. Regional banks have a higher *ROA* compare to foreign banks. This seem to be explained simply by the fact that foreign-owned banks have a higher non-performing loan

compare to regional banks. Having higher non-performing loan has a negative effect towards *ROA* due to poorer asset quality.

In terms of Risk, foreign-owned banks have a higher *Ln(σ)* value, which means their return on asset volatility is higher compare to regional banks. From this point of view, foreign banks can be said are more aggressive in taking risk. The nature of the business between foreign banks and regional banks are very different. BPD is more like a 'paymaster' for the regional government to manage funding for government secure projects. Few BPDs do involve in the commercial market like the foreign banks, but only in a small portion due to the limited source of funding from savings deposits. Therefore BPD it is very difficult for BPD to finance commercial credits/investment for long period of time. Nowadays, BPDs found much more safe instrument to invest rather than commercial market, with the product such as *Sertifikat Bank Indonesia (SBI)*.

On the other hand, foreign banks are more diversify in doing their business practice. With strong source of funding, foreign banks involve in both corporate and commercial markets such as consumer's market, small medium enterprise (SME), and agriculture. For example, Rabobank Indonesia gives credit to SME and agribusiness (food products particularly) sectors. Bank Andara is focusing in micro-finance, wide array of private and public institutions ranging from commercial and rural banks, to cooperatives and village-owned institutions (foreign banks goes to village). These activities might explain why the non-performing loan is higher compare to regional banks. Rapid expansion of foreign banks may also cause this effect.

Other variables that are significantly different are the *Size*, *Loan* ratio, *liquidity* ratio (*LDR*), and *CAR*. In terms of *Size* foreign banks are bigger compare to regional banks. And in terms of *LDR* and *CAR*, foreign banks *liquidity* ratio are higher and better capitalized. But in terms of *Loan* ratio regional banks are significantly higher. Two other variables, Deposit and *Ln(Z)*, are not significantly different.

4.3.5 REG vs. DOM

Comparing between regional banks and private domestic banks, REG vs. DOM, performance in terms of *ROA* it is significantly different. Regional banks have a higher *ROA* compare to private domestic banks. This is again in a simple way can be explained by the fact that regional banks have lower non-performing loan ratio compare to private domestic banks. It means regional banks have higher quality of asset which give a positive impact towards performance. But in terms of risk taking behavior, *Ln(σ)* and *Ln(Z)*, there are not significantly different between these two bank categories.

Other variables that are significantly different are *Loan* ratio, *liquidity* ratio (*LDR*), and *CAR*. Regional banks have higher loan ratio, whereas private domestic banks have higher liquidity ratio. In terms of *CAR*, private domestic banks are better capitalized compare to regional banks. The other two variables which are *Size* and *Deposit*, are not significantly different.

4.3.6 FOR vs. DOM

Comparing between foreign-owned banks and private domestic banks, FOR vs. DOM, performance in terms of *ROA* it is significantly different. Foreign-owned banks can be said are performing better compare to private domestic banks by having higher *ROA* value. Even though foreign-owned banks have higher non-performing loan compare to private domestic banks. This phenomena may also contributed from the cost efficiency factor or the proportion of high credit risk. Because high credit risk usually associated higher interest rate, which may produce higher net interest margin for the banks. In many studies, foreign banks are known to have superior management system, technology and competitive source of funding (Elosegui et al (2004); Moreno et al (2005)). All of these factors are positively contributed towards cost efficiency.

In terms of risk taking behavior *Ln(σ)*, foreign-owned banks have less negative value, which means higher return on asset volatility compare go private domestic banks. This can be easily to understand, by the fact that over the past few year foreign-owned banks have acquired or take over private domestic banks. As it was mentioned in 4.2.4 and 4.2.5, that the number of foreign banks increased by 30% and the number of private domestic banks decreased by 10% from 2007. According to data from central banks, the number of foreign banks branch offices have increased almost 200% since 2007 (Bank Indonesia, 2010). This showed an indication about the aggressiveness of foreign-owned banks activities in recent years.

Other variables that are also significantly different are *Size*, *Loan* ratio, and *liquidity* ratio (*LDR*). In terms of *Size* and *liquidity*, foreign-owned banks are bigger and higher respectively. But in terms of *Loan* ratio, private domestic banks are higher compare to foreign-owned. In general, foreign-owned banks have more involvement in other markets than just commercial banking market. Three other variables, *Deposit*, *CAR* and *Ln(Z)*, are not significantly different between these two bank categories

4.4 Multivariate Comparison Tests

After having analyzed the bivariate comparison test, it is also important to analyze multivariate comparison test. The objective of multivariate comparison test is to get more in depth understanding the conditions of the variables when compared among four ownership categories simultaneously. Table 4.4.1 and table 4.4.2 below presented the results of multivariate comparison test.

Table 4.4.1 : Multivariate comparison test on risk and performance

Loss(%)				
Annova Significance	0.000**			
		Subset for alpha = 0.05		
Duncan[a,b]	***N***	***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**			
		Subset for alpha = 0.05		
Duncan[a,b]	***N***	***1***	***2***	***3***
Domestic	263	-5.1685		
Government	37	-5.1463		
BPD	156	-5.1413		
Foreign	174		-4.7661	
ROA(%)				
Annova Significance	0.000**			
		Subset for alpha = 0.05		
Duncan[a,b]	***N***	***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)

4.4.1 Risk and Performance

From table 4.4.1 in terms of risk variables only *Ln(Z)* is not significantly different when compared between the four banks categories. This might be that the prudential level of all banks in Indonesia are the same. The significant level from one-way annova is 6.2% which is above the statistical significance level of 5%. But the variables of non-performing loan (*Loss*) and return on asset volatility *Ln(σ)* are statistically significant.

Government-owned banks have the highest non-performing loan ratio (*Loss*) among the four bank ownership categories. That means, government-owned banks have the worse quality of asset. This was predicted earlier in hypothesis 1 in section 3.2. The three biggest banks in Indonesia Bank Mandiri, Bank BRI and Bank BNI (which happen to be state banks) are used by the government for channeling economic funding. In many occasions, they are forced to finance government projects, such as utility projects, infrastructure projects and social projects, which have lower or even minus rate. Therefore it is quite understandable if government-owned banks have the poorest quality of asset.

Government-owned banks in Indonesia not only play a key role in national development program, but also as trouble shooter for the government. For example, in some cases the government banks have the obligation or forced to buy bad assets from the 'bad bank' (BPPN) that was set up during the crisis. Another example, Bank Mandiri is result from merger of the four previous state banks, has to manage and to carry the burden of the bad assets from the previous banks before the merger. However the results still show that, government-owned banks are performing relatively good compare to other banks despite having to absorb those assets.

The second highest non-performing ratio among the four bank categories is the foreign-owned banks. This is a little surprising because foreign-owned banks are very well known about their risk management process. But their recent aggressive activities in high risk credit market such as non-collateral credit facility (KTA) may have contributed to the result despite of high returns. Private domestic banks and regional banks are the lowest non-performing loan among the four ownership categories respectively. More focus and less diversified business activities may have contributed to the results.

The top performers in terms of *ROA*, again come to a surprise, are the regional banks followed by the government-owned banks (both are state-owned).

This result indicates that more focus and less diversified in banking practices may yield higher return on asset for regional banks. As for government owned banks, having such a huge asset may proved to have positive impact to *ROA*. Successfully in implementing restructuring program after the crisis and implementing good corporate governance, may also have contributed to the results. But in order to justify the idea, another analysis involving corporate governance aspects and measuring performance in terms of profit and cost, may need to be done. The two lowest performers in terms of *ROA* are the foreign-owned banks followed by the private domestic banks.

4.4.2 Controlling Variables

Table 4.4.2 presents the multivariate comparison test of the controlling variables. It can be seen from table 4.4.2 that, *Deposit* is the only controlling variables not statistically significance. In another words, deposit ratio among four ownership categories are within the same level or has no effect. From the bivariate analysis also showed that the source of funding (*Deposit*) is not statistically significance towards performance (*ROA*) and risk. It might be statistically significance towards profit, income or cost.

Size prove does matter, as it can be seen with the case of the government-owned banks. Even though government-owned banks have higher non-performing loan compare to foreign-owned and private domestic banks, still perform better in terms of *ROA*, Foreign-owned banks is the second biggest in terms of size, followed by private domestic banks and regional banks repectively.

Regional banks have the highest loan ratio, followed by private domestic banks, foreign-owned banks and government banks respectively. As for liquidity ratio foreign banks category is the highest, followed by private domestic banks, government owned banks and regional banks categories respectively

Table 4.4.2 : Multivariate comparison test on 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			
CAR(%)				
Annova Significance	0.001**			
	Subset for alpha = 0.05			
Duncan[a,b]	***N***	***1***	***2***	***3***
Government	37	17.58		
BPD	156		21.8771	
Domestic	263			28.4872
Foreign	174			30.6359

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)

Foreign-owned banks category is the most capitalized compare to the other three categories. The Basel II Accord, suggested that sufficient capital adequacy ratio should increased bank stability. In several studies, such as Kaluru

(2009) and Iannotta et al (2007), also found that foreign banks are more prudent compare to government-owned banks or private domestic banks. From, the previous multivariate comparison test in dependent variables, could not justify foreign banks are the most sound banks. Probably another analysis approach such as regression analysis can show it. The second highest capitalized bank category is the private domestic, followed by regional banks and government-owned banks respectively.

4.5 Assumption Tests

In order to run a regression analysis, the data has to through assumption tests. There two assumption tests to be conducted, stationary assumption test and non-multicolinearity assumption test.

4.5.1 Stationary Assumption Test

This test is a requirement in order to run time-series regression analysis. The test is done with Augmented Dickey-Fuller test statistic (ADF). If the results of the show the probability is less that 0.05, then the data is valid under stationary assumption test. The type of data tested under stationary assumption test are all dependent variables. The result of this test showed in table below.

Table 4.5.1 : Stationary assumption test

	Loss		Ln(s)		Ln(Z)		ROA	
	t-Statistic	Prob.*	t-Statistic	Prob.*	t-Statistic	Prob.*	t-Statistic	Prob.*
Augmented Dickey-Fuller Test Statistic	-14.8321	0	-22.1245	0	-7.89089	0	-9.46201	0

(Statistic significance level at 5%)

(Source : Compiled by Author based on the statistical results)

The result in the table above showed that all dependent variables are valid under stationary test. All dependent variables have the probability values less than 0.05. Therefore time series regression analysis is possible.

4.5.2 Non-multicolinarity Assumption Test

The VIF method of correlation analysis between independent variables is used in this test. Correlation analysis was done by pairing the independent variables. There are six independent variables that are used in this study, therefore there are 15 units value of correlation. If these groups of independent variables have a value more than 10 then those group of data have multicolinearity problems. The next table presents the non-multicolinearity test.

Table 4.5.2 : Non-multicolinearity test

	Tolerance	VIF
Growth	0.981	1.019
Ln(Size)	0.623	1.605
Loan	0.656	1.524
LDR	0.854	1.171
Deposit	0.883	1.132
Car	0.871	1.149

(Source : Compiled by Author based on the statistical results)

The result in the table above showed that all dependent variables are valid under non-multicolinearity test. There are no independent variables have a value more than 10 in the correlation matrix.

4.6 Regression Analysis

The bivariate and multivariate comparison tests, unfortunately can not answers all research questions and hypothesis that were raised earlier in this study. Therefore, further analysis is needed to reveal the unanswered questions and hypothesis and to confirm the previous results. In chapter three, this study proposed a mathematical model for regression analysis. There were four mathematical model, consist of three mathematical models to measure risk and one mathematical model to measure performance.

For the three risk mathematical models, the independent variables are *Loss*, *Ln(σ)* and *Ln(Z)*. And the dependent variables are growth, year and controlling factors : *size*, *loan*, *deposit*, *liquidity* (*LDR*), and capital (*CAR*). As for the performance model the independent variable is *ROA*, and the dependent variables of growth, year and controlling factors : *size*, *loan*, *deposit*, *liquidity* (*LDR*), capital (*CAR*) and *Loss* (NPL). Each model was estimated two times. First, all data was regressed using all variables mentioned. And second, a dummy variable was added to the equation to separate and to classify ownership. The next table below is the result of the first regression from all four models.

Table 4.6.1 : Regression analysis results of LOSS

	LOSS *Prob.*	**Ln(σ)** *Prob.*	**Ln(Z)** *Prob.*	**ROA** *Prob.*
Growth	0.015565 *0.4497*	-0.010679 *0.0343***	0.014321 *0.005***	-0.014207 *0.2697*
Ln(Size)	0.105668 *0.2986*	-0.051733 *0.0378***	0.076147 *0.0025***	0.351792 *0.0000***
Loan	-0.031952 *0.0048***	-0.008849 *0.0014***	0.00181 *0.5164*	-0.000185 *0.9792*
LDR	0.016714 *0.0001***	0.004864 *0.0000***	0.00243** *0.0228*	0.017931 *0.0000***
Deposit	-0.017933 *0.1033*	-0.001907 *0.4785*	-0.003606 *0.1849*	0.00094 *0.8914*
CAR	0.017266 *0.0038***	0.007451 *0.0000***	0.017591 *0.0000***	0.017374 *0.0000***
Year	-0.18103 *0.0369***	-0.01735 *0.4190*	-0.0149773 *0.0000***	-0.330073 *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)

4.6.1 Risk Model : LOSS (Eq. 3.1)

The purpose of this model is to try to find the correlation between non-performing loan and the banks controlling factors and growth of the bank industry. From Table 4.6.1, there four variables : Loan, LDR (liquidity), CAR (capital) and Year that have significance value less than 0.05. The regression results for *LOSS* (Eq. 3.1) showed that Loan and Year has negative coefficient towards *LOSS*. This mean that increasing loan, can reduce non-performing loan and it has the tendency to reduce between 2004-2009. This result somehow can be said contradictive as anticipated. Whereas, *LDR* and *CAR* have positive coefficients towards *LOSS*. As what the theory suggested that higher capitalization for banks, should improve bank's stability and soundness. On the other hand, if deposit ratio is increasing then the non-performing loan would also increase. Higher deposit ratio will induce banks to be more aggressive.

4.6.2 Risk Model : Ln(σ) (Eq. 3.2)

The purpose of this model is to try to find the correlation between banks aggressiveness behavior (risk taking) and banks controlling factors and the growth of banks industry. Table 4.6.1 showed that there five variables : *Growth*, *Size*, *Loan*, *LDR*, and *CAR* that have significance value less than 0.05.

Growth, Size and Loan have negative coefficient values towards *Ln(σ)*. When the bank industry's growth rate is increasing then banks don't have to be aggressive in taking risk to increase market share. The industry's market will be big enough for all banks to grow. Therefore, as the size of banks increase then their risk taking behavior also believe to decrease. Increasing *Loan* ratio means that fund availability for loan is limited. Automatically a bank will have limitation to finance loan, and hence bank's aggressiveness in risk-taking reduce. However, if *Deposit* and *CAR* have positive coefficient values towards *Ln(σ)*. Therefore increasing *Deposit* and *CAR* will induce a bank to be more aggressive in risk taking behavior. With more fund available (particularly from deposit) a bank is forced to be aggressive in order to give good return for its customers.

4.6.3 Risk Model : Ln(Z) (Eq.3.3)

The purpose of this model is to try to find the correlation between banks soundness and banks controlling factors and the growth of banks industry. Table 4.6.1 showed that there five variables : *Growth*, *Size*, *LDR*, *CAR* and *YEAR* that have significance value less than 0.05. All except YEAR have positive coefficient values towards Ln(Z). When the bank industry has positive growth rate, it indicates in general the macro-economy condition is good. When the economy is in the good state, most of the banks will also grow and well funded. A well-funded bank in most cases will have good liquidity and better capitalized. Therefore, positive correlations of these variables support banks soundness. However, the soundness of the banks seem to decline over the period of the study.

4.6.4 Performance Model : ROA (Eq.3.4)

The purpose of this model is to try to find the correlation between banks performance in terms of *ROA* and banks controlling factors and the growth of banks industry. Table 4.6.1 showed that there five variables : *NPL*, *Size*, *LDR*, *CAR* and *YEAR* that have significance value less than 0.05.

Size, LDR and CAR have positive correlation values towards ROA. When the bank's size increase then performance in terms of ROA will also increase. As expected, bigger asset will yield higher return on asset. However increasing the size of a bank also means higher capitalization value of a bank. Because by regulation, a bank must maintained a certain level of CAR. Therefore as the bank's size increase then capitalization and liquidity automatically increase that will give positive impact towards return on asset.

LOSS and Year both have negative coefficient values towards ROA. As expected that *LOSS* which is one of the proxies for risk have a negative impact on performance. Higher non-performing loan means lower quality of assets than can reduce or have a negative impact on return on assets. The negative value of

variable Year towards ROA, means that during the period of the study ROA has a tendency to decline.

4.6.4 Regression Analysis with Ownership Classification Variables

The mathematical models Eq. 3.1-3.4 have the objective to compare the asset quality (*LOSS*), risk taking behavior (*Ln(σ)*), insolvency (*Ln(Z)*) and performance of banks in Indonesia with different ownership. The results are expected to justify and complement the results of bivariate and multivariate comparison tests. Private domestic bank category is used as the reference.

Table 4.6.2 : Regression analysis with ownership classification variable

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

As shown in table 4.6.2 from the perspective of risk, the *LOSS* column showed government banks and foreign banks are having significantly positive values. Those values indicate that government and foreign banks have poorer asset quality than private domestic banks. Whereas the regional banks are having a not significantly have negative value, therefore it indicates that regional banks may have better asset quality compare to private banks. On contrary, Kalluru (2009) found that foreign banks in India have significantly higher non-performing loan compare to government and private domestic banks.

In column *Ln(σ)* showed that either government, regional and foreign have significantly positive values. These values indicate that those three bank categories are more aggressive towards risk-taking behavior compare to private domestic banks. Next in the column of *Ln(Z)*, the government and regional banks have significantly positive values, and foreign banks have a not significantly positive values. In terms of bank soundness, government and regional banks indicate to be more sound compare to private domestic banks. And foreign banks may have the indication to be more sound compare to private domestic banks. According to the results of Iannotta (2007) there are no significant difference of aggressiveness among different ownership structure. Furthermore, government banks have the highest insolvency risk.

From the performance perspective, the *ROA* column showed that the government banks have a not significant positive value. On the other hand, foreign banks have a not significant negative value. These two results indicate that the government banks may be better performer, whereas the foreign banks may be the worse performer compare to private domestic banks. But the regional banks have a significant positive value, which indicate that regional banks are performing better in terms of *ROA* compare to private domestic banks. This result is contradictive with the results from Kobeissi (2002), where private banks (particularly private foreign banks) are the top performers in terms of ROA.

4.7 Results Summary and Discussion

4.7.1 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 bank 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

4.7.2 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 can not be concluded using these analysis.

Regional banks according to bivariate and multivariate comparison tests consistently showing the result 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.

Size of banks proved to be a significant factor that strongly contribute 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. For

comparison at the end of year 2009, Bank Mandiri alone has a total asset of about Rp 370 trillion. The total assets of 47 private domestic banks in the same year is about Rp 495 trillion, in which Bank Central Asia asset alone already about Rp 280 trillion. That means Bank Mandiri asset alone is bigger than the total asset of 46 private domestic banks. 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.

Foreign banks according to descriptive and bivariate comparison tests are the most sound 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.

4.7.3 Regression Analysis

The result of the regression analysis pretty much confirmed the results of descriptive, bivariate and multivariate comparison tests. In terms of *LOSS* (Eq. 3.1) 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 $Ln(\sigma)$ (Eq. 3.2), the foreign and government-owned banks consider to be the most aggressive in risk taking behavior. But in regards of $Ln(Z)$ (Eq. 3.3), 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 (Eq.3.4).

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 $Ln(\sigma)$. 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*. Which mean by 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)*.

4.7.4 Discussions

Referring to the first research question, this study 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. Bank Sinar Harapan Bali is an example as the bank which has dispersed ownership structure. Concentrated structure of ownership allow bank owners to have strong controlling rights. Therefore bank owners have strong influence in choosing the board of management, type of business or market the bank will engage, business policies and in some cases business decision making. In Indonesia, there are three types of bank owners, government, foreign and private. Private bank owners are usually either individual family, family business related, or company that is under controlled certain group of people who has common interest. These three types of bank owners obviously have different traits and characters. Each of them have different perspective towards the business practice and risk, even though they are in the same market and legal framework. The differences in perspective will determine source funding, performance and survivability.

Changing ownership in Indonesian commercial banking is the other effect of having concentrated structure. During the period of this study, bank's ownership change was very significance. It seemed that decisions for bank owners to either take over another bank and to sell are easily achieved. The number of banks in the ownership categories is very fluctuating very year. This is one of the limitation in this study in order to properly analyzed the bank's behavior and performance. Not enough period of time to fully learn the effect bank's characteristics after ownership changed. This is particularly significant in the case of a foreign bank taking over private domestic bank. Since this study used public information, the data of a bank prior being take over does not reflect the characteristic of the new owner. In some cases it even effect the future performance for the bank which took over.

The implications of different bank owners with strong controlling rights, mean different behavior towards risk taking, hence different level of performance. After controlling bank specific variables, asset quality, bank's growth and year, this study tested for systematic differences in risk taking behavior and performance. Several hypothesis were develop to test the data in order to find those differences. 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. During the study period there were several irregular events that might have contributed to the results.

Public banks are expected to have the lowest quality of asset, which in part the results confirmed the expectation. Government-owned banks have the highest non-performing loan ratio, but regional banks (BPD) which also owned by the government has the lowest non-performing loan ratio. Performance in terms of *ROA*, both government-owned banks and regional banks are better compare to foreign and private domestic banks. This performance result again is not as expected in the hypothesis.

Regional banks even though classified as commercial banking, but their nature and characteristic of the business is slightly different due to source of funding and business practice. The main source of funding comes from the regional government budget (APBD) and not to dependent from public deposit. The accountability for the bank managers is very high, and they have to be prudent in managing the fund. The flexibility in risk taking is very limited. On the other side, the business model for regional banks is more simple and focus compare to government, foreign and private domestic banks. So it is quite explainable due to these facts, the regional banks have the highest quality and earning asset.

The results showed that government-banks have the highest non-performing ratio, therefore considered to possessed the worse asset quality compare to other commercial banks. But this result might be influenced by couple of highly irregular events during the study period. A noticeable abnormality in 2005 might contributed to the result, when both Bank Mandiri and Bank BNI as the two largest posted NPL ratios of 26% and 13%. According to their 2005 annual reports, such an extremely high NPL was caused by new loan reclassification guidelines from the central bank (PBI No.7/2/PBI/2005). The weight of the new classification guidelines fell particularly on corporate borrowers (main customers), borrowers with restructured loans, and borrowers of foreign currency loans. On top of that, in 2005 Bank Mandiri was forced to purchased loan from Indonesian Restructuring Agency (IBRA) comprised 31.4% of the bank's total corporate and commercial loan. It took both Bank Mandiri and Bank BNI three years to bring down their NPL below 5% as regulated. Because there are only six banks in government-owned category, where Bank Mandiri and Bank BNI owned more than 60% of total asset in that category, this abnormality certainly effected the performance of the group.

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 hypothesis

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.

The results showed that, foreign-owned banks being the most capitalized, are the most sound compare to other banks. This is consistent with variety of theories supporting *CAR* improves bank soundness. But at the same time, the results also showed that the foreign banks are the most aggressive in risk taking behavior. This result might be influenced by two noticeable factors which are :

- Since 2005 (particularly in 2007), foreign-banks aggressively expand their business, by merger or taking over private domestic banks.
- Foreign banks also aggressively engaged in high risk market such as credit card and non-collateral loan. HSBC and Citibank for example since 2006 aggressively entering those markets. HSBC in 2009 has a non-performing loan worth of Rp 2,93 trillion which 90% coming from credit card business and 10% from the non-collateral loan (Tjatur, 2010).

This could be a prove that by implementing good risk management practice, a bank can be aggressive but also sound at the same time. Foreign banks indicate they have superiority in risk management. Even by engaging in high risk market, but if risk can be properly managed bank soundness can still be achieved. High risk market has higher interest rate, therefore can impact positively towards performance (Iannotta, Nocera, & Sironi, 2007).

This study has expected the government-owned banks to be the most aggressive in risk taking. But actually, 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 banks aggressive in risk taking because of the outlook of Indonesian economy is very positive. So it is a matter of business opportunity. Whereas the government-owned banks are

'forced' to be aggressive. Because the role of government-owned banks are for channeling 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, & 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 in terms of *ROA*.

Not many things can be said about private domestic banks. The results 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 effecting the results. For illustration, in 2009 the total asset of foreign banks close to Rp 710 trillion and the total asset for government-owned banks exceeded Rp 1,000 trillion. Whereas the total asset of private domestic banks only about Rp 490 trillion consist of 47 banks. From Rp 490 trillion, Bank Central Asia (BCA) owned Rp 280 trillion. That means, Bank Mandiri's asset alone which estimated about Rp 370 trillion, is bigger than the total of 46 private domestic banks which is only Rp 210 trillion. Therefore, any contributing factors towards risk and performance in the private domestic banks category, would hardly can significantly reflected. Unless one extreme case such as BCA to collapse. This is also one of the limitations in the study that need to be addressed in future research.

CHAPTER 5
CONCLUSION

5.1 Conclusion

This study 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, the effect of different ownerships in Indonesian commercial banking. 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. The empirical result of this study after analysis can be concluded as follows:

1. Ownership structure in Indonesian commercial banking industry is homogeneous, which is concentrated. This result confirmed with first hypothesis. Therefore, bank owners have strong controlling-right:
    a. To influence in choosing the board of management
    b. To determine type of business or market the bank will engage
    c. To influence business policies and in some cases business decisions making.
    d. Changing ownership is relatively easy and frequent
2. 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* determined by the role of the controlling ownership.
    a. Government-owned banks have the lowest asset quality and aggressive in risk taking due to their role in national economic development. These findings confirmed the second and fifth hypothesis.

b. Regional banks and government-owned banks are performing better in terms of ROA. These findings did not confirm with the third hypothesis.
c. Foreign-owned banks are the most prudent banks but also aggressive in risk-taking due to business opportunities. These findings confirmed with sixth hypothesis, but did not confirm with the fourth hypothesis.

3. There is a negative relationship between risk management and bank's performance in terms of ROA. This result confirmed with the seventh hypothesis. Furthermore this study also found that there were significant findings bank size does not only support bank's stability, but also induce aggressiveness in risk taking.

Summing up, 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 (as illustrated in paragraph above risk taking behavior between foreign and government banks). Inline with Basel II, that capital requirements do induce and support bank's stability, but do not reduce bank risk taking. 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 (2008) about bank risk taking.

In general, empirical results showed that theIndonesian banking industry is stable and gradually improving. There are three main reasons:

1. The restructuring banking program initiated by the government with the help from IMF seemed to work in a positive way
2. The foreign entry makes the Indonesian banking markets competitive and forced the government and private domestic banks to be efficient and prudent.

3. The superiority of foreign banks in risk-management seemed to give positive impact. As the results showed, that NPL has the tendency to decline over the study period. By end of 2009, NPL ratio is below 5% in all ownership categories.

5.2. Suggestion for Further Research.

This study has several limitations. Due to those limitations, this study could not comprehensively explain two things:

1. The inter-relationship between risk and performance.
2. Risk taking behavior and performance of private domestic banks.

Therefore in order to improve and better in explaining the relationship between ownership, risk and performance, there are few suggestions:

1. Measuring profit and cost, and find the correlation with bank controlling variables in this study so performance could be better explained. Measuring performance in several variables might be better in explaining the inter-relationship between risk and performance
2. Improve the bank selection process, in order to control the same number of banks within each ownership categories. So panel data analysis would be possible to conduct. The reason of using panel data analysis is because the characteristic of the data available is historical bank accounting data. Furthermore panel data techniques are able to mitigate the influence of spurious characteristics in the relation between owners and managers by introducing time dimension (Magalhaes, Gutierrez, & Tribo, 2008).
3. Conduct the study in three different periods : the expansion period (1992-1997), the restructuring period (1998-2003), and the post crisis period (2004-2009). If done so, the risk taking behavior and performance of banks can be explained in lots more detail.

5.3 Research Implications

1. For academic, the study hopefully can broaden the basic understanding about the relation between ownership, risk and performance of commercial banking in Indonesia. In particular, about how important risk-management to be applied in commercial banking. Commercial banks are in the risky business. There are six basic types of risk, but with risk management those risk can be selected to which risks can be eliminated, risks that can be transferred and risks that have to be actively manage. Understanding risk-management is essential.
2. In today's business environment level of competition is very high. Due to this fact, number of uncertainties are also increasing. As for the banks, this study proved that by implementing risk-management is not only to improve bank's soundness. But also to increase the aggressive capability towards risk taking, by properly balance and manage risk, to enhance performance. Risk-management will not only enhance bank's competitive capability in terms of managing risk, but also in terms of cost and business opportunities.
3. And for the regulators, the results of the study can be indicators and additional information about risk-taking behavior of Indonesian commercial banking. It is important for the regulators (particularly in Indonesia), to create financial stability in the banking industry. Because the banking industry is the channeling and source of funding for the national economy. The Indonesian economy through out its history, relied on the banking industry instead of the capital market. Therefore another collapse in banking industry due to financial crisis, can not be afforded and must be avoided at all cost.
4. For the customers, this study can give general information about commercial banking involvement in the national economy. The customers can choose and select the commercial banking that suit their business needs or coordinating institutions for their investment. Every customer has different level of risk preference. Therefore, it is quite important for

the customers to understand risk-taking behavior from different type of commercial banking in Indonesia.

REFERENCES

Aharoni, Y. (1986). *The Evolution and Management of State-Owned Enterprises.* Cambrige, Massachusetts: Ballinger Publishing.

Alchian, A. (1965). Some Economics of Property Rights. *Il Politico , 30* (4), 816-829.

Allen, F., & Gale, D. (2000). *Compariong Financial Systems.* Cambrige, MA: MIT Press.

Bank Indonesia. (2010). *Bank Sentral Republik Indonesia*. Retrieved 2010 йил 10-August from Statistik Perbankang Nasionalxx: http://www.bi.go.id/web/id/Statistik/Statistik+Perbankan/Statistik+Perbankan+Indonesia/

Bank Indonesia, Direktorat Penelitian dan Pengaturan Perbankan. (2003). Kumpulan ketentuan perbankan tahun 2002.

Bart, J. R., Caprio, J., & Levine, R. (2000). Banking Systems Around the Globe: Do Regulation and Ownership Affect Performance and Stability ? (F. Mishkin, Ed.) *National Beurau of Economics.*

Barth, J. R., Caprio Jr., G., & Levine, R. (1999). *Banking System Around the Globe : Do Regulation and Ownership Affect Performance and Stability ?* Working Papers, World Bank.

Barth, J. R., Nolle, D. E., Phumiwasana, T., & Yago, G. (2003). A Cross Country Analysis of Bank Supervisory Framework and Bank Performance. *Financial Markets, Institutions & Instruments , 12*, 67-120.

Berger, A. N., DeYoung, R., Genay, H., & Udell, G. F. (2000). Globalization of Financial Institutions: Evidence from Cross Border Banking Performance. *Brooking Papers on Economic Activity , 2*, 23-158.

Berger, A., Clarke, G., Cull, R., Klapper, L., & Udell, G. (2005). Corporate governance and bank performance: A joint analysis of the static, selection, and dynamic effects of domestic, foreign, and state ownership. *Jorunal of Banking & Finance , 29*, 2179-2221.

Bikker, J. A., & Bos, J. W. (2008). *Book Performance : A theoretical and empirical framework for the analysis of profitability, comeptition and efficiency* (Vol. 48). Taylor and Francis.

Bonin, J. P., Hasan, I., & Wachtel, P. (2004). *Bank performance, efficiency and ownership in transition countries.* BOFIT. BOFIT.

Bonin, J. P., Hasan, I., & Wachtel, P. (2004). *Privitization matters : Bank efficiency in transition countries.* Institute for Economies in Transition. BOFIT.

Boot, A. W., & Thakor, A. V. (1993). Self-Interested Bank Regulation. *American Economic Review , 83* (2), 206-212.

Cebenoyan, A. S., & Strahan, P. E. (2004). Risk Management, Capital Structure and Lending at Banks. *Journal of Banking and Finance , 28*, 19-43.

Choi, S., & Hasan, I. (2005). Ownership, Governance, and Bank Performance: Korean Experience. *Financial Markets, Institution and Instruments , 14* (4), 215-242.

Claessens, S., Demirgüç-Kunt, A., & Huizinga, H. (2001). How does foreign entry affect domestic banking markets ? *Journal of Banking & Finance , 25*, 891-911.

Cornett, M., Guo, M. L., Khaksari, S., & Tehranian, H. (2000). *Performance differences in privately-owned versus state-owned banks: an international comparison.* Working Paper, World Bank, Southern Illinois University at Carbondale, Suffolk University and Boston College.

Creane, G., Mobarak, & Sab. (2003). *Evaluating Financial Sector Development in the Middle East and North Africa: New Methodology and Some New Result.* IMF.

Crystal, J. S., Dages, B. G., & Goldberg, L. S. (2002). Has Foreign Bank entry Led to Sounder Banks in Latin America ? *Current Issues in Economic and Finance , 8* (1).

De Alessi, L. (1980). The Economic Ptoperty Rights: A Review of the Evidence. (R. O. Zerbe, Ed.)

Demirgüç-Kunt, A., & Huizingga, H. (1999). Determinant of Commercial Bank Interest Margins and Profitability: Some International Evidence. *World Bank Economic Review , 13*, 379-408.

Demsetz, H., & Lehn, K. (1985). The Structure of Corporate Ownership: Causes and Consequences. *Journal of Political Economy , 93*, 1155-1177.

Elosegui, P., & Pinteris, G. (2004). *Privatization, Foreign Entry, and Bank risk in Emerging Banking Systems: Evidence from Argentina.* Centro para la Estabilidad Financiera.

Enoch, C. (2000). *Interventions in Bank during Banking Crises: The Experience of Indonesia.* International Monetary Fund. Washington DC: IMF.

Esty, B. (1998). The Impact of Contingent Liability on Commercial Bank Risk Taking. *Journal of Financial Economics , 47*, 189-218.

Fama, E., & Jensen, M. (1983). Separtion of Ownership and Control. *Journal of Law and Economics , 26*, 301-325.

Franks, J., Mayer, C., & Renneboog, L. (2001). Who Disciplines Management of Poorly Performing Companies ? *Journal of Financial Intermediation , 10*, 209-248.

Galai, D., & Masulis, R. (1976). The Option Pricing Model and the Risk Factor of Stock. *Journal of Financial Economics.*

Hadad, M. D., Sugiarto, A., Purwanti, W., Hermanto, M. J., & Arianto, B. (2003). *Kajian Mengenai Struktur Kepemilikan Bank di Indonesia.* Bank Indonesia. Jakata: Publikasi Bank Indonesia.

Hamada, M. (2003 йил 09). Transformation of the Financial Sector in Indonesia. *Research Paper No.6.*

Iannotta, G., Nocera, G., & Sironi, A. (2007). Ownership structure, risk and performance in the European banking industry. *Journal of Banking & Finance* , 2127-2149.

Jensen, M., & Meckling, W. (1976). Theory of the firm: Managerial behavio and agency costs, and ownership structure. *Journal of Financial Economics , 3*, 305-360.

Kalluru, S. R. (2009). Ownership Structure, Performance and Risk in Indian Commercial Banks. *The IUP Journal of Applied Finance August 2009 , 15* (8), 31-45.

Kobeissi, N. (2002). *Ownership Structure and Bank Performance: Evidence from the Middle East and North Africa.* Long Island University, Department of Management. C.W.Post.

Konishi, M., & Yukihiro, Y. (2004). Factors Affecting Bank Risk Taking: Evidence from Japan. *Journal of Banking and Finance , 28*, 215-232.

La Porta, R., Lopez-De-Silanes, F., & Shleifer, A. (2002). Government ownership of banks. *Journal of Finance , LVII* (1), 265-301.

Laeven, L., & Levine, R. (2008). *Corporate Governance, Regulation and Bank Risk Taking.* Working Paoer, IMF.

Lang, L. H., & So, R. W. (2002). *Ownership Structure and Economic Performance.* Working Paper.

Levine, R. (2006). Finance and Growth: Theory and Evidence. (P. Aghion, & S. Durlauf, Eds.) *The Netherlands: Elsevier Science.*

Levy, B. (1987). A Theory of Public Enterprise Behavior. *Journal of Economic Behavior and Organization , 8* (1), 75-96.

Magalhaes, R., Gutierrez, M., & Tribo, J. A. (2008). *Banks' Ownership Structure, Risk and Performance.* Retrieved 2010 йил 16-08 from Social Science Research Network: http://ssrn.com/abstract=1102390

Moreno, R., & Villar, A. (2005). *The Increased Role of Foreign Bank Entry in Emerging Markets.* Bank for International Settlement. Bank for International Settlement.

Niskanen, W. (1975). Bureaucrats and Politicians. *Journal of Law and Economics , 18* (3), 617-643.

Rokhim, R. (2005). *Related Lending and Banking Soundness.* Working Paper.

Saha, S. K. (2008). *Roles of Banks in Indian Economy.* Research Paper, Calcutta Business School, West Bengal.

Santomero, A. M. (1997). *Commercial Bank Risk Management: an Anlysis of the Process.* Working Paper, The Wharton Financial Instituions Center.

Sato, Y. (2005). Bank Restructuring and Financial Institution Reform in Indonesia. *The Developing Economies , 43* (1), 91-120.

Saunders, A., & Cornett, M. M. (2006). *Financial Institutions Management: A Risk Management Approach.* Boston: McGraw-Hill.

Saunders, M. E., & Travlos, N. G. (1990). Ownership structure, deregulation and bank risk taking. *Journal of Finance , 45*, 643-654.

Shleifer, A., & Vishny, R. W. (1997). A Survey of Corporate Governance. *Journal of Economics , 109* (4), 995-1025.

Shleifer, A., & Vishny, R. W. (1986). Large Shareholders and Corporate Control. *Journal of Political Economy , 94*, 461-488.

Shleifer, A., & Vishny, R. W. (1994). Politicians and Firms. *Quarterly Journal of Economics , 109*, 995-1025.

State Bank of Pakistan. (2009). *Risk Management: Guidelines for Commercial Banks & DFIs.* Publications, State Bank of Pakistan.

Tai, C.-S. (2004). Can Bank be A Source of Contagion During the 1997 Asian Crisis ? *Journal of Banking and Finance , 28*, 399-421.

Tandelilin, E., Kaaro, H., Mahadwartha, P. A., & Supriyatna. (2007). *Corporate Governance, Risk Management, and Bank Performance: Does Type of Ownership Matter?* EADN Working Paper No.34.

The World Bank. (2001). *Finance for Growth: Policy Choices in a Volatile World.* Oxford University Press.

Tjatur. (2010 йил 2-Juni). *Kredit Macet Bank Asing Membengkak.* Retrieved 2010 йил 28-September from Tribunenews: www.tribunenews.com

Unite, A., & Sulllivan, M. (2002). *The Impact of Liberalization of Foreign Bank Entry on the Philippine Domestic Banking Market.* Philippine APEC Study Center Network. Philippine APEC Study Center Network.

Year 2004
All Banks

No.	Bank	Size (in Rp million)	Ln Size	Controlling Factors: Loans	LDR (%)	Deposit	CAR (%)	NPL Gross (%)	ROA (%)	Z-Score	LN Z-Score	Volatility: σ	LN σ	EBT (in Rp million)
1	PT BANK NEGARA INDONESIA (PERSERO) TBK	135,946,164	18.73	54.48%	55.10%	5.38	17.17%	4.60%	2.45%	11.12				3,136,090
2	PT BANK RAKYAT INDONESIA (PERSERO), TBK	107,040,172	18.49	70.24%	75.69%	7.13	17.89%	4.19%	5.77%	13.43				6,021,515
3	PT BANK TABUNGAN NEGARA (PERSERO)	26,743,114	17.10	53.09%	67.90%	2.60	15.89%	0.22%	1.83%	10.06				460,796
4	PT BANK MANDIRI (PERSERO), TBK	240,436,505	19.30	45.02%	51.84%	4.23	25.28%	7.43%	3.19%	16.16				7,429,696
5	PT BANK AGRONIAGA, TBK	2,154,200	14.58	97.06%	89.88%	4.21	15.52%	4.53%	2.72%	13.36				34,890
6	PT BANK ANTARDAERAH	596,205	13.30	99.56%	60.13%	4.63	18.21%	5.79%	1.05%	9.80				9,064
7	PT BANK ARTHA GRAHA	8,631,452	15.97	89.72%	81.71%	4.62	9.75%	3.11%	0.49%	5.81				47,574
8	PT BANK BUKOPIN	18,415,438	16.73	95.93%	85.17%	7.05	15.41%	3.43%	1.51%	9.83				306,445
9	PT BANK BUMI ARTA	1,645,190	14.31	86.44%	28.30%	21.21	33.62%	2.22%	2.75%	20.65				40,752
10	PT BANK CENTRAL ASIA TBK	148,750,288	18.82	40.68%	30.60%	53.67	23.93%	1.28%	3.21%	15.42				4,506,050
11	PT BANK CIMB NIAGA, Tbk	30,437,555	17.24	81.68%	85.37%	4.37	10.29%	3.18%	2.91%	7.49				749,341
12	PT BANK DANAMON INDONESIA Tbk	57,637,257	17.87	58.00%	72.49%	4.36	27.00%	4.62%	4.51%	17.89				2,164,560
13	PT BANK EKONOMI RAHARJA, Tbk	10,223,926	16.13	74.92%	46.49%	40.39	12.90%	0.72%	1.92%	8.41				185,349
14	PT BANK GANESHA	497,255	13.72	87.78%	76.50%	2.60	17.96%	5.61%	1.45%	13.02				31,397
15	PT BANK HANA	180,691	12.10	86.71%	83.29%	7.64	21.08%	0.47%	3.13%	13.75				4,658
16	PT BANK HIMPUNAN SAUDARA 1906, Tbk	561,735	13.24	93.95%	89.41%	6.24	11.33%	0.34%	3.49%	8.41				19,587
17	PT BANK ICB BUMIPUTERA Tbk	3,802,123	15.15	91.60%	83.76%	5.46	10.16%	3.37%	1.27%	6.49				44,784
18	PT BANK ICBC INDONESIA	461,718	13.05	99.87%	75.17%	5.20	70.95%	1.62%	2.54%	41.73				31,689
19	PT BANK INDEX SELINDO	687,854	13.44	84.77%	63.87%	40.55	11.17%	2.04%	1.90%	7.42				31,243
20	PT BANK INTERNASIONAL INDONESIA Tbk	25,794,487	17.39	48.72%	43.62%	7.39	20.89%	4.01%	2.35%	13.19				815,213
21	PT BANK KESAWAN Tbk	1,533,428	14.24	70.87%	52.32%	14.29	12.58%	5.79%	0.37%	7.35				5,171
22	PT BANK MASPION INDONESIA	1,762,341	14.38	87.58%	68.39%	13.54	12.88%	0.89%	1.63%	8.12				28,089
23	PT BANK MAYAPADA INTERNATIONAL Tbk	2,356,240	14.75	87.89%	77.76%	6.54	14.43%	3.11%	2.10%	9.79				25,428
24	PT BANK MEGA, Tbk	18,646,794	16.74	55.32%	48.80%	31.46	13.53%	1.98%	2.99%	9.38				457,798
25	PT BANK MESTIKA DHARMA	2,942,583	14.89	99.73%	92.51%	14.35	22.64%	2.01%	7.66%	17.20				200,594
26	PT BANK METRO EXPRESS	376,385	12.84	99.94%	50.23%	4.71	75.65%	3.93%	3.59%	44.99				32,808
27	PT BANK NUSANTARA PARAHYANGAN,Tbk	2,322,737	14.66	76.67%	52.39%	23.15	12.86%	0.80%	1.96%	8.43				40,175
28	PT BANK OCBC NISP, Tbk	17,801,215	16.69	72.99%	77.34%	5.57	15.11%	1.01%	2.90%	10.00				390,328
29	PT BANK PERMATA Tbk	31,597,908	17.27	61.97%	57.20%	10.81	11.40%	1.60%	2.30%	7.78				690,357
30	PT BANK SBI INDONESIA	330,051	12.71	92.53%	62.01%	13.88	21.09%	2.59%	1.18%	8.94				1,519
31	PT BANK SINARMAS	461,332	13.04	88.39%	41.69%	7.31	81.78%	9.86%	1.55%	47.31				6,472
32	PT BANK SWADESI Tbk	628,734	13.63	99.39%	54.11%	10.47	25.95%	2.46%	2.34%	16.06				18,193
33	PT BANK UOB BUANA, Tbk	16,353,680	16.61	83.10%	58.55%	4.73	22.12%	1.61%	2.66%	14.07				412,738
34	PT PAN INDONESIA BANK, Tbk	22,963,063	16.95	34.19%	72.93%	3.85	40.19%	7.72%	5.63%	26.01				1,179,185
35	PT ANGLOMAS INTERNASIONAL BANK	175,149	12.07	100.00%	90.00%	7.30	15.00%	3.00%	3.00%	10.22				4,385
36	PT BANK ANDARA	292,395	12.59	100.00%	70.87%	3.48	18.56%	0.69%	1.01%	11.12				3,142
37	PT BANK ARTOS INDONESIA	186,437	12.14	100.00%	82.24%	7.81	19.15%	1.18%	1.09%	11.49				1,005
38	PT BANK BARCLAYS INDONESIA	539,965	13.20	95.16%	86.59%	4.70	13.49%	3.64%	2.68%	9.18				13,256
39	PT BANK BCA SYARIAH	628,523	13.35	100.00%	80.78%	14.52	16.23%	2.77%	2.20%	10.46				11,533
40	PT BANK BISNIS INTERNASIONAL	150,255	11.92	97.16%	68.00%	6.03	29.00%	0.82%	0.92%	16.99				2,333
41	PT BANK DIPO INTERNATIONAL	537,447	13.20	100.00%	93.03%	15.18	14.30%	3.42%	5.06%	10.99				37,294
42	PT BANK FAMA INTERNASIONAL	263,345	12.48	100.00%	84.82%	7.70	15.35%	2.34%	2.22%	9.98				5,019
43	PT BANK HARDA INTERNASIONAL	1,019,170	13.83	87.04%	63.88%	11.01	12.48%	3.18%	1.31%	7.83				10,793
44	PT BANK INA PERDANA	177,595	12.09	99.99%	82.42%	1.83	18.35%	4.48%	2.71%	11.96				4,230
45	PT BANK JASA JAKARTA	1,869,048	14.43	91.36%	80.79%	26.78	26.67%	0.31%	4.56%	22.03				76,734
46	PT BANK KESEJAHTERAAN EKONOMI	326,722	12.70	100.00%	121.97%	2.67	33.75%	3.18%	8.60%	22.63				22,376
47	PT BANK MAYORA	217,346	12.29	58.22%	39.91%	12.11	17.03%	1.31%	0.82%	10.13				3,395
48	PT BANK MITRANIAGA	325,632	12.69	74.50%	55.21%	8.51	16.44%	2.00%	1.52%	10.76				5,597
49	PT BANK MULTI ARTA SENTOSA	339,609	12.74	100.00%	73.91%	12.04	22.06%	1.60%	2.23%	13.79				7,159
50	PT BANK PUNDI INDONESIA	1,493,537	14.22	100.00%	69.90%	13.74	14.69%	9.67%	1.06%	8.94				17,763
51	PT BANK SAHABAT PURBA DANARTA	63,901	11.07	83.32%	24.49%	4.27	179.00%	4.29%	3.32%	102.89				3,379
52	PT BANK SINAR HARAPAN BALI	156,830	12.02	100.00%	65.65%	4.26	17.44%	1.25%	3.49%	11.88				3,727
53	PT BANK TABUNGAN PENSIUNAN NASIONAL	3,614,047	15.10	97.06%	94.94%	14.34	19.56%	2.41%	8.82%	16.15				288,501
54	PT BANK VICTORIA INTERNATIONAL, Tbk	2,004,900	14.51	57.68%	54.72%	7.63	14.92%	5.22%	1.34%	9.35				20,925
55	PT BANK YUDHA BHAKTI	1,325,303	14.10	68.56%	62.12%	13.49	16.18%	2.67%	1.98%	11.45				55,003
56	PT CENTRATAMA NASIONAL BANK	424,044	12.96	100.00%	93.04%	9.64	12.94%	1.39%	4.26%	9.77				15,451
57	PT LIMAN INTERNATIONAL BANK	146,269	11.89	100.00%	54.70%	3.11	93.61%	1.86%	3.33%	54.96				4,529
58	PT PRIMA MASTER BANK	382,758	12.86	100.00%	82.04%	11.29	11.29%	0.69%	0.88%	6.93				7,413
59	BPD KALIMANTAN SELATAN	1,283,721	14.07	76.90%	47.80%	6.26	21.05%	2.56%	3.87%	14.04				38,307
60	BPD KALIMANTAN TIMUR	4,202,323	15.25	88.67%	36.60%	9.03	31.97%	3.21%	5.15%	21.06				168,023
61	BPD SULAWESI TENGGARA	438,550	12.99	100.00%	75.40%	4.65	23.10%	4.52%	6.95%	17.06				27,040
62	BPD YOGYAKARTA	1,436,346	14.18	96.83%	62.59%	11.53	17.07%	1.16%	3.90%	11.91				56,016
63	PT BANK DKI	6,885,880	15.74	70.47%	51.61%	2.03	22.87%	3.78%	3.85%	15.37				242,069
64	PT BANK LAMPUNG	1,037,126	13.85	99.91%	73.31%	3.41	14.40%	1.31%	4.21%	10.57				36,409
65	PT BANK ACEH	4,188,021	15.25	92.25%	41.82%	13.83	16.35%	1.81%	1.29%	10.02				37,574
66	PT BANK KALTENG	1,085,278	13.90	98.91%	32.19%	9.04	18.50%	4.40%	2.32%	11.87				24,273
67	PT BPD JAMBI	664,776	13.41	99.97%	55.66%	10.30	27.32%	0.83%	4.86%	18.27				29,118
68	PT BPD SULAWESI SELATAN	2,411,112	14.70	99.99%	69.31%	2.24	24.87%	2.21%	6.33%	17.71				135,447
69	PT BPD RIAU KEPRI	5,305,956	15.48	70.47%	22.49%	16.01	29.16%	3.10%	3.25%	17.83				86,599
70	PT BPD SUMATERA BARAT (BANK NAGARI)	3,098,326	14.95	98.95%	94.72%	2.62	15.84%	3.44%	4.46%	11.53				134,999
71	PT. BPD JAWA BARAT DAN BANTEN	13,317,306	16.40	99.39%	84.90%	4.90	14.32%	0.32%	3.24%	9.97				385,853
72	PT. BPD KALIMANTAN BARAT	1,445,885	14.18	89.73%	56.96%	7.33	15.53%	0.76%	3.48%	10.79				44,579
73	PT BPD MALUKU	835,531	13.64	74.57%	47.71%	2.44	25.38%	4.15%	3.01%	14.98				7,638
74	PT BPD BENGKULU	433,953	12.98	99.93%	68.07%	17.29	10.18%	3.36%	3.64%	7.65				15,605
75	PT BPD JAWA TENGAH	6,451,873	15.68	91.42%	78.59%	4.43	18.91%	0.89%	3.63%	13.93				335,492
76	PT BPD JAWA TIMUR	8,883,241	15.98	95.40%	45.45%	6.41	15.99%	0.51%	2.61%	10.54				330,660
77	PT BPD NUSA TENGGARA BARAT	1,146,358	13.95	87.68%	94.65%	2.09	18.31%	1.52%	4.73%	13.06				42,339
78	PT BPD NUSA TENGGARA TIMUR	1,015,863	13.83	100.00%	80.88%	11.37	15.48%	0.49%	5.34%	11.82				51,116
79	PT BPD SULAWESI TENGAH	276,686	12.53	100.00%	44.01%	16.47	14.44%	9.42%	1.56%	9.08				7,703
80	PT BPD SULAWESI UTARA	1,060,826	13.87	99.72%	87.47%	4.64	19.28%	1.21%	6.41%	14.59				57,945
81	PT. BPD BALI	3,128,379	14.96	99.70%	96.20%	3.66	19.83%	0.58%	5.71%	14.50				157,461
82	PT. BPD PAPUA (d/h BPD IRIAN JAYA)	2,503,817	14.73	46.67%	42.90%	7.92	32.77%	2.56%	4.07%	15.22				71,949
83	PT. BPD SUMATERA SELATAN DAN BANGKA BELITUNG	2,584,184	14.76	99.63%	77.10%	4.89	15.74%	3.42%	3.88%	10.00				40,559
84	PT. BPD SUMATERA UTARA	3,560,302	15.09	98.00%	52.42%	3.90	31.07%	4.31%	4.27%	20.12				147,366
85	PT ANZ PANIN BANK	2,825,330	14.85	92.75%	89.07%	23.78	22.48%	4.28%	5.93%	16.13				148,660
86	PT BANK COMMONWEALTH	2,347,818	14.67	34.96%	9.51%	12.44	32.52%		0.47%	18.73				27,326
87	PT BANK ACRIS	1,065,255	13.88	97.47%	142.66%	8.47	29.85%	3.73%	1.33%	17.65				33,673
88	PT BANK BNP PARIBAS INDONESIA	900,316	13.71	97.41%	312.93%	8.44	24.93%	23.21%	4.79%	16.87				29,815
89	PT BANK DBS INDONESIA	5,238,570	15.47	75.50%	108.57%	2.05	15.15%	0.69%	2.27%	9.87				84,736
90	PT BANK KEB INDONESIA	2,274,450	14.64	41.23%	195.66%	1.11	48.97%	11.02%	3.87%	29.79				80,698
91	PT BANK MIZUHO INDONESIA	3,303,224	14.48	79.33%	96.65%	3.04	19.71%	0.42%	1.83%	12.23				106,221
92	PT BANK OCBC - INDONESIA	1,770,293	14.39	47.70%	73.82%	2.03	65.51%	10.38%	2.77%	50.12				36,497
93	PT BANK RESONA PERDANIA	3,323,933	15.02	88.34%	148.09%	1.53	23.91%	10.24%	2.88%	15.21				99,967
94	PT BANK UOB INDONESIA	3,207,858	14.98	86.83%	68.13%	4.06	43.13%	7.38%	2.44%	26.33				70,730
95	PT BANK WINDU KENTJANA INTERNATIONAL, Tbk	511,567	13.15	87.11%	58.39%	1.27	43.10%	1.79%	6.59%	20.21				29,350
96	PT BANK WOORI INDONESIA	2,731,772	14.82	65.45%	68.81%	1.26	58.47%	6.15%	5.51%	36.30				131,653
97	PT. BANK CHINA TRUST INDONESIA	2,935,100	14.89	92.60%	124.54%	2.82	20.41%	4.75%	3.46%	13.55				98,147
98	PT BANK SUMITOMO MITSUI INDONESIA	4,644,591	15.39	95.29%	135.13%	1.27	31.12%	4.20%	2.40%	30.95				133,041
99	ABN AMRO BANK	15,189,582	16.54	57.85%	44.00%	6.87	23.77%	14.00%	4.85%	16.25				727,906
100	CITIBANK N.A.	24,553,775	17.02	73.78%	60.46%	41.44	17.63%	17.63%	5.47%	13.12				1,332,101
101	DEUTSCHE BANK AG.	18,818,729	16.75	31.36%	27.09%	2.34	18.10%	1.50%	5.72%	13.52				1,078,804
102	STANDARD CHARTERED BANK	14,638,070	16.50	46.70%	59.65%	4.45	9.16%	2.87%	4.28%	7.63				570,130
103	THE BANGKOK BANK COMP. LTD	1,244,068	14.03	47.62%	104.56%	1.36	49.91%	13.03%	3.23%	31.35				54,295
104	THE BANK OF TOKYO MITSUBISHI UFJ LTD	9,110,763	16.02	94.83%	114.21%	5.16	18.55%	0.17%	3.30%	12.22				249,431
105	THE HONGKONG & SHANGHAI B.C.	16,307,591	16.61	64.93%	81.00%	65.09	10.39%	2.00%	5.00%	8.74				713,599
	Mean	11,296,277	14.59	84.60%	72.63%	9.43	24.96%	3.52%	3.25%	16.01				277,571
	Median	1,849,846	14.43	91.60%	69.61%	6.41	18.55%	2.67%	2.86%	12.03				42,339
	Standard Deviation	22248827.89	1.72	17.90%	34.07%	10.44	22.35%	3.65%	1.76%	12.66				1,100,051
	Min	63,901	11.07	31.36%	9.51%	0.44	9.16%	0.17%	0.37%	5.61				1,325
	Max	240,436,505	19.30	100.00%	312.93%	65.09	179.00%	23.21%	8.82%	102.89				7,429,696
	Total Asset	1,186,101,061												

Year 2004
Government-owned

No.	Bank	Size (in Rp million)	Ln Size	Controlling Factors: Loans	LDR (%)	Deposit	CAR (%)	NPL Gross (%)	ROA (%)	Z-Score	LN Z-Score	Volatility: σ	LN σ	EBT (in Rp million)
1	PT Bank Mandiri Tbk	240,436,505	19.30	45.02%	51.84%	4.23	25.28%	7.43%	3.19%	16.16	2.7828	0.0120	-4.4237	7,429,696
2	PT Bank Negara Indonesia	135,946,164	18.73	54.48%	55.10%	5.38	17.17%	4.60%	2.45%	11.12	2.4085	0.0072	-4.9354	3,136,090
3	PT Bank Rakyat Indonesia Tbk	107,040,172	18.49	70.24%	75.69%	7.13	17.89%	4.19%	5.77%	13.43	2.5977	0.0171	-4.0661	6,021,515
4	PT Bank Tabungan Negara	26,743,114	17.10	53.09%	67.90%	2.60	15.89%	0.22%	1.83%	10.06	2.3086	0.0047	-5.3619	460,796
5	PT Bank Bukopin	18,415,438	16.73	95.93%	85.17%	7.05	15.41%	3.43%	1.51%	9.83	2.2858	0.0027	-5.9192	306,445
6	PT Bank Permata	31,597,908	17.27	61.97%	57.20%	10.81	11.40%	1.60%	2.30%	7.78	2.0513	0.0333	-3.4018	690,357
7	PT Bank Tabungan Pensiun Nasional	3,614,047	15.10	97.06%	94.94%	14.34	19.56%	2.41%	8.82%	16.15	2.7796	0.0209	-3.8675	288,501
	Mean	80,544,764	17.53	68.26%	69.69%	7.36	17.51%	3.41%	3.75%	12.07	2.4582	0.0140	-4.5680	2,821,920
	Median	31,597,908	17.27	61.97%	67.90%	7.05	17.17%	3.43%	2.45%	11.12	2.4085	0.0120	-4.4237	690,357
	Standard Deviation	86030719.26	1.43	20.81%	16.34%	4.02	4.27%	2.37%	2.61%	3.25	0.2733	0.0108	0.8664	3001604.497
	Min	3,614,047	15.10	45.02%	51.84%	2.60	11.40%	0.22%	1.83%	7.78	2.0513	0.0027	-5.9192	288,501
	Max	240,436,505	19.30	97.06%	94.94%	14.34	25.28%	7.43%	8.82%	16.16	2.7828	0.0333	-3.4018	7,429,696

Year 2004
Government-Regional

No.	Bank	Size (in Rp million)	Ln Size	Controlling Factors: Loans	LDR (%)	Deposit	CAR (%)	NPL Gross (%)	ROA (%)	Z-Score	LN Z-Score	Volatility: σ	LN σ	EBT (in Rp million)
1	BPD Kalimantan Selatan	1,283,721	14.07	76.90%	47.80%	6.26	21.05%	2.56%	3.87%	14.04	2.6416	0.0102	-4.5838	38,307
2	BPD Kalimantan Timur	4,202,323	15.25	88.67%	36.60%	9.03	31.97%	3.21%	5.15%	21.06	3.0481	0.0076	-4.8837	168,023
3	BPD Sulawesi Tenggara	438,550	12.99	100.00%	75.40%	4.65	23.10%	4.52%	6.95%	17.06	2.8364	0.0084	-4.7791	27,040
4	BPD Yogyakarta	1,436,346	14.18	96.83%	62.59%	11.53	17.07%	1.16%	3.90%	11.91	2.4770	0.0019	-6.2906	56,016
5	PT BPD Sumatera Barat (Bank Nagari)	3,098,326	14.95	98.95%	94.72%	2.62	15.84%	3.44%	4.46%	11.53	2.4446	0.0022	-6.1375	134,999
6	PT. Bank Aceh	4,188,021	15.25	92.25%	41.82%	13.83	16.35%	1.81%	1.29%	10.02	2.3041	0.0134	-4.3106	37,574
7	PT. Bank DKI	6,885,880	15.74	70.47%	51.61%	2.03	22.87%	3.78%	3.85%	15.37	2.7324	0.0087	-4.7500	242,069
8	PT. Bank Kalteng	1,085,278	13.90	98.91%	32.19%	9.04	18.50%	4.40%	2.32%	11.82	2.4699	0.0032	-5.7462	24,273
9	PT. Bank Lampung	1,037,126	13.85	99.91%	73.31%	3.41	14.40%	1.31%	4.21%	10.57	2.3577	0.0076	-4.8587	36,409
10	PT. BPD Bali	3,128,379	14.96	99.70%	96.20%	3.66	19.83%	0.58%	5.71%	14.50	2.6742	0.0099	-4.6173	157,461
11	PT. BPD Bengkulu	433,953	12.98	99.93%	68.07%	17.29	10.18%	3.36%	3.64%	7.65	2.0401	0.0025	-5.9974	15,605
12	PT. BPD Jambi	664,776	13.41	99.97%	55.66%	10.30	27.32%	0.83%	4.86%	18.27	2.9053	0.0027	-5.9184	29,118
13	PT. BPD Jawa Barat dan Banten	13,317,306	16.40	99.39%	84.90%	4.90	14.32%	0.32%	3.24%	9.97	2.2996	0.0044	-5.4272	385,853
14	PT. BPD Jawa Tengah	6,451,873	15.68	91.42%	78.59%	4.43	18.91%	0.89%	3.62%	13.93	2.6343	0.0155	-4.1696	335,492
15	PT. BPD Jawa Timur	8,883,241	15.98	95.40%	45.45%	6.41	15.99%	0.51%	2.61%	10.54	2.3571	0.0065	-5.0387	330,660
16	PT. BPD Kalimantan Barat	1,445,885	14.18	89.73%	56.96%	7.33	15.53%	0.76%	3.48%	10.79	2.3789	0.0030	-5.8172	44,579
17	PT. BPD Maluku	835,531	13.64	74.57%	47.71%	2.44	25.38%	4.15%	3.01%	14.98	2.7069	0.0169	-4.0816	7,638
18	PT. BPD Nusa Tenggara Barat	1,146,358	13.95	87.68%	94.65%	2.09	18.31%	1.52%	4.73%	13.06	2.5712	0.0052	-5.2591	42,339
19	PT. BPD Nusa Tenggara Timur	1,015,863	13.83	100.00%	80.88%	11.37	15.48%	0.49%	5.34%	11.82	2.4699	0.0035	-5.6580	51,116
20	PT. BPD Papua (d/h BPD Irian Jaya)	2,503,817	14.73	46.67%	42.90%	7.92	32.77%	2.56%	4.07%	15.22	2.7224	0.0057	-5.1707	71,949
21	PT. BPD Riau Kepri	5,305,956	15.48	70.47%	22.49%	16.03	29.16%	3.10%	2.25%	17.83	2.8811	0.0182	-4.0049	86,599
22	PT. BPD Sulawesi Selatan	2,411,112	14.70	99.99%	69.31%	2.24	24.87%	2.21%	6.33%	17.71	2.8744	0.0069	-4.9779	135,447

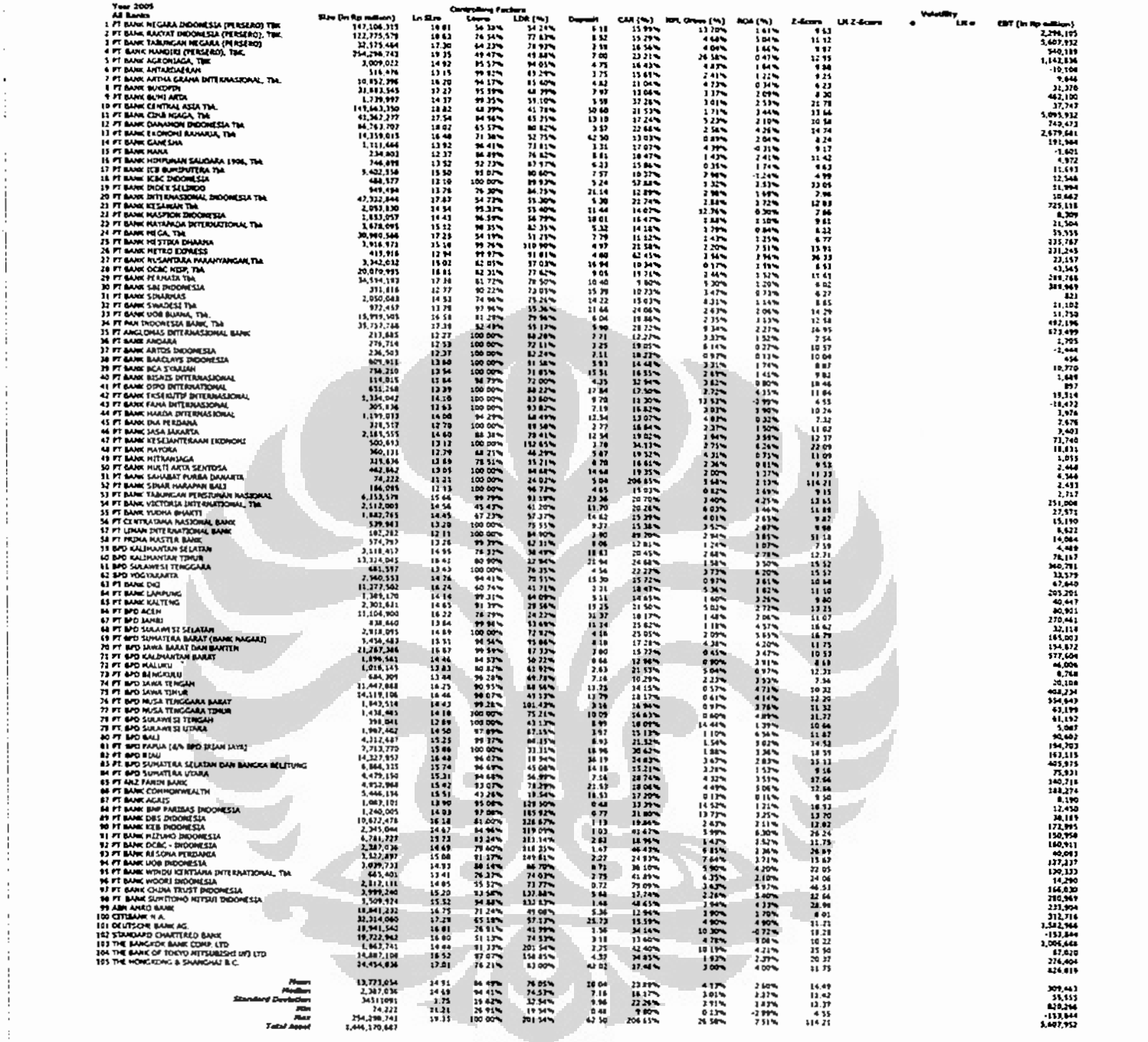
23 PT. BPD Sulawesi Tengah	276,648	12.53	100.00%	44.01%	16.43	14.44%	5.42%	1.56%	9.04	2.2045	0.0164	-4.1096	3,702
24 PT. BPD Sulawesi Utara	1,060,626	13.87	99.72%	67.47%	4.64	19.28%	3.21%	6.41%	14.59	2.6801	0.0157	-4.4450	57,945
25 PT. BPD Sumatera Utara	3,568,392	15.09	98.00%	52.42%	5.90	31.07%	4.31%	4.37%	20.12	3.0010	0.0128	-4.3617	147,386
26 PT. BPD Sumatera dan Bangka Belitung	2,584,184	14.76	99.65%	77.10%	4.89	15.74%	3.42%	1.88%	19.00	2.2030	0.0045	-5.3981	40,559
Mean	3,016,909	14.48	91.34%	61.57%	7.33	19.99%	2.39%	2.96%	12.60	2.5779	0.0061	-5.0299	104,206
Median	1,920,499	14.44	98.46%	59.78%	6.08	18.71%	2.39%	1.99%	13.51	2.6027	0.0072	-4.9307	52,566
Standard Deviation	3047561.226	0.95	13.37%	20.25%	4.67	5.64%	1.52%	1.62%	3.51	0.2578	0.0050	0.4478	108214.968
Min	276,648	12.53	44.43%	22.49%	2.03	10.18%	0.32%	1.01%	7.85	2.0601	0.0019	-6.2906	3,702
Max	13,317,308	16.40	100.00%	94.20%	17.29	31.97%	5.42%	6.95%	21.08	3.0481	0.0182	-4.0049	343,853

Year 2004
Foreign-owned

			Controlling Factors								Volatility		
	Size (in Rp million)	Ln Size	Loans	LDR (%)	Deposit	CAR (%)	NPL Gross (%)	ROA (%)	Z-Score	LN Z-Score	σ	LN σ	EBT (in Rp million)
1 ABN AMRO BANK	15,109,582	16.54	57.85%	46.00%	6.87	23.77%	14.00%	4.85%	16.25	2.7861	0.0176	-4.0384	727,900
2 PT BANK AGRIS	1,065,135	13.88	97.47%	143.66%	8.47	29.85%	2.73%	1.23%	17.65	2.8705	0.0214	-4.4769	11,673
3 CITIBANK N.A.	24,553,775	17.02	73.78%	60.46%	41.46	17.63%	5.47%	5.47%	11.12	2.3730	0.0025	-5.9753	1,332,101
4 DEUTSCHE BANK AG	18,818,719	16.75	31.36%	32.09%	2.34	18.10%	1.50%	5.72%	13.52	2.6045	0.0371	-3.2944	1,078,804
5 PT ANZ PANIN BANK	2,625,330	14.83	92.75%	89.09%	22.79	22.48%	4.28%	5.93%	16.13	2.7807	0.0141	-4.2639	148,880
6 PT BANK BNP PARIBAS INDONESIA	900,316	13.71	97.81%	312.93%	0.44	24.93%	23.21%	4.79%	16.07	2.8250	0.0406	-3.2030	39,615
7 PT BANK CHINA TRUST INDONESIA	2,935,100	14.89	92.60%	124.54%	2.82	20.41%	4.75%	3.46%	13.55	2.6064	0.0107	-4.5409	96,147
8 PT BANK CIMB Niaga	30,437,555	17.24	81.68%	85.37%	8.37	10.29%	3.10%	2.91%	7.48	2.0142	0.0099	-4.6130	749,341
9 PT BANK COMMONWEALTH	2,347,848	14.67	34.96%	9.51%	12.46	32.52%	0.00%	0.47%	18.71	2.9302	0.1694	-1.7754	77,326
10 PT Bank Danamon Indonesia Tbk	57,637,257	17.87	58.00%	72.49%	4.36	27.00%	4.02%	4.51%	17.89	2.8843	0.0113	-4.4791	3,164,560
11 PT BANK DBS INDONESIA	5,238,520	15.47	75.50%	106.57%	2.05	15.15%	0.69%	2.23%	9.87	2.2893	0.0117	-4.4466	84,738
12 PT Bank ICBC Indonesia	465,718	13.05	99.87%	75.17%	5.20	70.95%	1.62%	2.54%	41.73	3.7311	0.0068	-4.9920	11,689
13 PT Bank Internasional Indonesia	33,794,487	17.34	46.72%	43.62%	7.39	20.89%	4.01%	2.35%	13.19	2.5796	0.0089	-4.7247	815,213
14 PT BANK KEB INDONESIA	2,274,450	14.64	81.23%	105.64%	3.11	48.50%	11.02%	3.97%	29.79	3.3942	0.0183	-4.1109	80,696
15 PT BANK MIZUHO INDONESIA	5,302,224	15.48	79.23%	96.65%	3.04	19.73%	0.42%	1.63%	12.23	2.5039	0.0056	-5.1904	104,228
16 PT BANK OCBC - INDONESIA	1,770,293	14.39	67.70%	71.62%	2.03	65.51%	20.38%	2.77%	50.12	3.9145	0.0069	-4.9723	36,497
17 PT Bank OCBC NISP Tbk	17,801,215	16.69	77.99%	77.34%	9.57	15.11%	1.01%	2.50%	10.00	2.3026	0.0047	-5.3466	390,328
18 PT BANK RESONA PERDANIA	3,323,913	15.02	88.34%	146.09%	1.53	22.91%	10.24%	2.84%	15.21	2.7220	0.0074	-4.9105	99,962
19 PT BANK SUMITOMO MITSUI INDONESIA	4,844,151	15.39	95.29%	115.53%	1.27	52.12%	4.20%	2.40%	30.95	3.4325	0.0097	-4.6361	133,041
20 PT BANK UOB INDONESIA	3,207,658	14.98	86.83%	66.83%	4.08	43.93%	7.38%	2.44%	26.33	3.2706	0.0115	-4.4674	70,730
21 PT BANK WOORI INDONESIA	2,731,772	14.82	65.45%	69.61%	1.26	50.42%	6.15%	5.51%	36.30	3.5917	0.0097	-4.6394	321,653
22 STANDARD CHARTERED BANK	14,638,070	16.50	46.70%	59.61%	4.45	9.16%	2.87%	4.28%	7.63	2.0322	0.0130	-4.3419	370,130
23 THE BANGKOK BANK COMP. LTD	1,244,068	14.03	87.82%	104.56%	1.34	49.81%	13.03%	3.23%	31.31	3.4438	0.0244	-3.7145	54,295
24 THE BANK OF TOKYO MITSUBISHI UFJ LTD	9,110,763	16.02	94.83%	114.21%	3.16	18.15%	0.17%	3.38%	12.22	2.5034	0.0058	-5.1504	249,431
25 THE HONGKONG & SHANGHAI B.C	16,387,551	16.61	84.93%	61.00%	65.09	10.29%	2.00%	5.00%	8.74	2.1677	0.0050	-5.2983	713,999
Mean	13,243,868	15.52	75.74%	91.42%	8.56	30.75%	5.53%	3.55%	19.47	2.8303	0.0189	-4.4653	436,351
Median	4,844,151	15.39	81.23%	77.34%	4.08	23.77%	4.02%	3.38%	16.13	2.7807	0.0107	-4.5409	321,653
Standard Deviation	13836694.43	1.28	19.86%	57.02%	14.72	19.91%	5.49%	1.51%	11.24	0.5246	0.0327	0.8364	680952.3659
Min	465,718	13.05	31.36%	9.51%	0.44	9.16%	0.00%	0.47%	7.48	2.0142	0.0025	-5.9753	11,673
Max	57,637,257	17.87	99.87%	312.93%	65.09	65.51%	23.21%	5.93%	50.12	3.9145	0.1694	-1.7754	3,164,560

Year 2004
Domestic

			Controlling Factors								Volatility		
	Size (in Rp million)	Ln Size	Loans	LDR (%)	Deposit	CAR (%)	NPL Gross (%)	ROA (%)	Z-Score	LN Z-Score	σ	LN σ	EBT (in Rp million)
1 PT Anglomas Internasional Bank	175,149	12.07	100.00%	90.00%	7.30	15.00%	3.00%	3.00%	10.22	2.3243	0.0085	-4.7645	4,385
2 PT Bank Agroniaga Tbk	2,154,300	14.58	97.06%	89.68%	4.21	15.52%	4.33%	1.72%	10.36	2.3376	0.0056	-5.1910	38,098
3 PT Bank Andara	292,395	12.59	100.00%	70.17%	3.48	18.56%	0.69%	2.01%	11.11	2.4080	0.0031	-5.7811	3,142
4 PT Bank Antar Daerah	196,205	12.19	99.56%	68.12%	4.63	16.21%	1.79%	3.05%	9.80	2.2823	0.0041	-5.4930	9,066
5 PT Bank Artha Graha Internasional Tbk	8,652,452	15.97	89.72%	82.71%	4.63	9.75%	3.11%	6.49%	5.81	1.7603	0.0007	-7.3107	47,574
6 PT Bank Artos Indonesia	186,437	12.14	100.00%	82.34%	7.81	19.15%	3.18%	2.09%	11.49	2.4416	0.0069	-4.9712	1,805
7 PT Bank Barclays Indonesia	539,963	13.20	95.16%	86.59%	4.70	17.49%	3.68%	2.68%	9.16	2.2171	0.0069	-4.9788	13,256
8 PT Bank BCA Syariah	628,523	13.35	100.00%	80.78%	14.52	14.23%	3.77%	2.20%	10.46	2.3479	0.0063	-5.0726	11,533
9 PT Bank Bisnis Internasional	150,255	11.92	97.15%	88.00%	6.03	29.00%	0.80%	0.92%	16.99	2.8325	0.0030	-5.8108	1,325
10 PT Bank Bumi Arta	1,645,190	14.31	96.46%	78.30%	21.21	33.62%	2.33%	2.75%	20.65	3.0277	0.0011	-6.8307	40,792
11 PT Bank ICB Bumiputera Tbk	3,802,123	15.15	91.60%	83.76%	5.46	10.16%	3.37%	1.27%	6.49	1.8703	0.0129	-4.3535	44,784
12 PT Bank Central Asia Tbk	148,750,288	18.82	40.64%	30.60%	53.67	23.95%	3.28%	1.21%	15.42	2.7357	0.0036	-5.6332	4,504,050
13 PT Bank Dipo International	537,947	13.20	100.00%	93.63%	15.18	14.30%	3.43%	3.06%	10.99	2.3972	0.0118	-4.4429	27,204
14 PT Bank Ekonomi Raharja Tbk	10,323,976	16.15	74.92%	46.49%	40.39	12.90%	0.72%	1.92%	8.41	2.1299	0.0010	-6.8779	103,349
15 PT Bank Fama Internasional	262,345	12.48	100.00%	84.82%	7.70	15.25%	2.34%	3.32%	9.90	2.3001	0.0072	-4.9286	3,019
16 PT Bank Ganesha	897,255	13.71	87.70%	76.50%	2.60	17.96%	5.61%	1.45%	11.02	2.3997	0.0082	-4.8000	11,397
17 PT Bank Hana	180,691	12.10	86.71%	83.29%	7.64	21.08%	0.47%	3.57%	13.75	2.6207	0.0082	-4.7985	4,459
18 PT Bank Harda Internasional	1,019,577	13.83	97.04%	63.66%	33.01	12.48%	3.18%	1.31%	7.63	2.0579	0.0043	-5.4562	10,793
19 PT Bank Himpunan Saudara Tbk	561,735	13.24	93.95%	89.41%	6.24	11.37%	0.34%	3.49%	8.41	2.1299	0.0088	-4.7311	19,197
20 PT Bank Ina Perdana	177,195	12.09	99.99%	42.42%	3.61	18.35%	4.48%	2.71%	11.96	2.4813	0.0481	-3.0340	4,230
21 PT Bank Index Selindo	687,854	13.44	84.77%	61.83%	40.55	13.37%	2.04%	3.90%	7.42	2.0043	0.0022	-6.0957	11,243
22 PT Bank Jasa Jakarta	1,889,844	14.45	91.36%	80.79%	26.76	18.62%	0.51%	4.36%	12.03	2.4870	0.0051	-5.2822	76,734
23 PT Bank Kesawan Tbk	1,533,928	14.24	70.67%	52.32%	14.26	12.58%	5.79%	0.27%	7.35	1.9950	0.0011	-6.7779	5,173
24 PT Bank Kesejahteraan Ekonomi	328,722	12.70	100.00%	121.97%	2.63	33.21%	3.18%	1.60%	22.63	3.1151	0.0068	-4.9929	22,376
25 PT Bank Maspion Indonesia	1,762,342	14.38	87.58%	68.39%	13.54	13.60%	0.89%	1.62%	8.12	2.0949	0.0038	-5.5744	28,009
26 PT Bank Mayapada Internasional Tbk	2,558,260	14.75	87.89%	73.74%	6.54	14.43%	7.11%	2.10%	9.39	2.2391	0.0070	-4.9676	25,426
27 PT Bank Mayora	217,346	12.29	56.22%	39.91%	32.28	17.02%	1.51%	0.62%	10.17	2.3160	0.0026	-5.9690	1,595
28 PT Bank Mega Tbk	18,666,794	16.74	55.32%	48.00%	31.44	13.57%	1.96%	2.99%	9.38	2.2385	0.0012	-6.7200	457,798
29 PT Bank Mestika Dharma	2,942,583	14.89	99.72%	92.51%	14.15	22.64%	2.01%	7.66%	17.20	2.8451	0.0074	-4.9022	204,594
30 PT Bank Metro Express	379,385	12.84	99.94%	50.23%	4.71	75.85%	1.92%	3.59%	44.99	3.8064	0.0187	-4.0939	12,808
31 PT Bank Mitraniaga	323,823	12.69	74.50%	35.31%	8.51	16.46%	2.00%	2.52%	10.78	2.3773	0.0103	-4.5740	5,597
32 PT Bank Multi Arta Sentosa	339,809	12.74	100.00%	73.91%	32.04	22.08%	1.60%	3.12%	12.79	2.6240	0.0038	-5.5734	7,159
33 PT Bank Nusantara Parahyangan Tbk	2,322,727	14.66	76.67%	52.39%	29.15	12.86%	0.80%	1.98%	8.42	2.1313	0.0017	-6.3973	40,175
34 PT Bank Pundi Indonesia	1,493,537	14.22	100.00%	87.98%	12.74	14.69%	9.67%	1.06%	8.94	2.1900	0.0261	-3.6450	17,763
35 PT Bank Sahabat Purba Danarta	63,901	11.07	83.32%	24.49%	4.27	179.00%	4.25%	2.22%	102.89	4.6337	0.0082	-4.7984	1,379
36 PT Bank SBI Indonesia	330,851	12.71	92.53%	62.81%	33.88	11.05%	3.59%	1.10%	6.94	1.9378	0.0036	-5.6311	3,519
37 PT Bank Sinar Harapan Bali	166,830	12.02	100.00%	85.85%	4.26	17.44%	1.25%	3.49%	11.88	2.4751	0.0093	-4.6907	5,737
38 PT Bank Sinarmas	461,332	13.04	88.39%	41.69%	7.15	81.73%	9.96%	1.55%	47.31	3.8566	0.0073	-4.9557	6,473
39 PT UOB Buana Tbk	5,238,520	15.47	75.50%	106.37%	2.05	15.15%	0.69%	2.23%	9.87	2.2893	0.0035	-5.6484	84,738
40 PT Bank Swadesi Tbk	828,734	13.63	99.79%	54.11%	10.47	25.95%	2.66%	2.34%	16.06	2.7765	0.0066	-5.0189	18,193
41 PT Bank Victoria International, Tbk	2,004,900	14.51	57.68%	54.72%	7.83	14.92%	8.23%	3.54%	9.33	2.2349	0.0049	-5.3190	28,925
42 PT BANK WINDU KENTJANA INTERNATIONAL, Tbk	511,567	13.15	87.11%	56.39%	1.27	43.10%	1.79%	6.59%	28.21	3.3390	0.0626	-2.7700	29,350
43 PT Bank Yudha Bhakti	1,325,303	14.10	66.54%	62.12%	13.49	16.18%	2.67%	3.98%	11.43	2.4377	0.0103	-4.5475	55,003
44 PT Centratama Nasional Bank	424,048	12.96	100.00%	93.04%	9.66	12.94%	1.39%	4.26%	9.77	2.2789	0.0097	-4.6327	15,451
45 PT Liman International Bank	146,288	11.89	100.00%	56.70%	3.11	93.61%	1.84%	3.23%	54.98	4.0070	0.0106	-4.5431	4,329
46 PT Pan Indonesia Bank Tbk	22,963,063	16.95	54.19%	72.93%	3.85	40.19%	7.71%	3.67%	26.01	3.2587	0.0207	-3.8773	1,179,115
47 PT Prima Master Bank	382,718	12.86	100.00%	62.04%	11.29	11.29%	0.69%	0.87%	6.92	1.9337	0.0050	-5.2921	7,412
Mean	5,334,090	13.69	88.24%	70.21%	11.36	25.59%	2.75%	3.01%	16.01	2.5326	0.0090	-5.1426	156,283
Median	596,205	13.30	95.16%	72.93%	7.81	16.21%	2.04%	2.23%	10.46	2.3479	0.0066	-4.9929	13,256
Standard Deviation	21832603.8	1.53	15.40%	20.57%	10.67	29.04%	2.19%	1.65%	16.63	0.5941	0.0112	0.9109	472512.1763
Min	63,901	11.07	40.64%	24.49%	1.27	9.75%	0.34%	0.37%	5.81	1.7603	0.0007	-7.3107	1,325
Max	144,750,288	18.82	100.00%	121.97%	53.67	179.00%	9.96%	7.66%	102.89	4.6337	0.0626	-2.7706	4,504,050



Year 2005

All Banks	Size (in Rp million)	Ln Size	Loans	LDR (%)	Deposit	CAR (%)	NPL Gross (%)	ROA (%)	Z-Score	LR Z-Score	Volatility σ	Volatility LR σ	EBT (in Rp million)
1 PT BANK NEGARA INDONESIA (PERSERO) Tbk	147,106,315	18 81	56 38%	54 24%	6 18	15 99%	13 70%	1 61%	9 63				2,296,195
2 PT BANK RAKYAT INDONESIA (PERSERO), Tbk.	122,775,579	18 63	76 54%	77 63%	8 52	15 29%	4 64%	5 04%	11 12				5,607,932
3 PT BANK TABUNGAN NEGARA (PERSERO)	32,575,464	17 30	64 23%	78 93%	3 59	16 56%	4 06%	1 66%	9 87				540,189
4 PT BANK MANDIRI (PERSERO), Tbk.	254,298,743	19 35	49 47%	49 86%	7 00	23 21%	26 58%	0 47%	12 95				1,142,836
5 PT BANK AGRONIAGA Tbk	3,009,022	14 92	95 57%	94 05%	4 75	16 43%	4 87%	1 64%	9 86				-10,106
6 PT BANK ANTARDAERAH	516,496	13 15	99 92%	83 29%	3 75	15 65%	2 41%	1 22%	9 25				9,646
7 PT BANK ARTHA GRAHA INTERNASIONAL, Tbk.	10,852,398	16 20	94 17%	83 60%	4 62	11 04%	4 73%	0 34%	6 23				31,376
8 PT BANK BUKOPIN	31,883,545	17 27	95 59%	66 79%	7 97	13 06%	3 37%	2 09%	8 30				462,100
9 PT BANK BUMI ARTA	1,739,997	14 37	99 35%	59 10%	5 58	37 28%	3 01%	2 53%	21 78				37,747
10 PT BANK CENTRAL ASIA Tbk.	149,663,350	18 82	68 39%	61 78%	50 60	31 53%	1 71%	3 44%	33 66				5,095,932
11 PT BANK CIMB NIAGA, Tbk	43,362,277	17 54	84 96%	65 25%	13 10	17 24%	5 23%	2 10%	10 58				749,473
12 PT BANK DANAMON INDONESIA Tbk	84,763,707	18 02	65 57%	80 82%	3 57	22 66%	2 56%	4 26%	14 74				2,679,681
13 PT BANK EKONOMI RAHARJA, Tbk	14,359,015	16 48	71 36%	52 75%	42 50	13 03%	0 89%	2 04%	8 26				191,984
14 PT BANK GANESHA	1,111,666	13 92	96 41%	71 81%	3 25	17 07%	4 39%	-0 31%	9 17				-1,601
15 PT BANK HANA	234,803	12 37	86 49%	76 62%	8 81	18 47%	1 43%	7 41%	31 42				4,972
16 PT BANK HIMPUNAN SAUDARA 1906, Tbk	746,898	13 52	92 73%	87 97%	6 23	15 86%	0 35%	1 74%	9 63				11,693
17 PT BANK ICB BUMIPUTERA Tbk	5,402,356	15 50	95 07%	80 60%	7 57	10 37%	7 98%	-1 24%	4 99				12,566
18 PT BANK ICBC INDONESIA	488,577	13 10	100 00%	89 93%	9 24	57 88%	1 32%	3 53%	33 05				51,994
19 PT BANK INDEX SELINDO	949,494	13 76	76 30%	84 75%	21 14	12 89%	2 98%	1 69%	7 96				10,662
20 PT BANK INTERNASIONAL INDONESIA Tbk	47,522,844	17 67	54 73%	55 30%	5 30	22 74%	2 84%	3 72%	12 83				725,118
21 PT BANK KESAWAN Tbk	2,053,130	14 54	95 31%	55 90%	11 44	14 07%	12 76%	0 30%	7 86				8,309
22 PT BANK MASPION INDONESIA	1,853,057	14 43	96 59%	56 79%	10 01	16 47%	1 84%	1 10%	9 61				21,504
23 PT BANK MAYAPADA INTERNATIONAL Tbk	3,678,095	15 12	98 35%	82 35%	5 32	14 18%	3 79%	0 84%	8 22				59,553
24 PT BANK MEGA, Tbk	30,980,566	17 25	54 19%	51 25%	7 79	11 12%	1 43%	1 25%	6 77				335,767
25 PT BANK MESTIKA DHARMA	3,916,973	15 18	99 26%	310 90%	4 97	21 58%	2 20%	7 51%	15 91				231,245
26 PT BANK METRO EXPRESS	413,918	12 94	99 97%	91 81%	4 80	62 45%	2 56%	2 96%	36 33				23,157
27 PT BANK NUSANTARA PARAHYANGAN,Tbk	3,342,632	15 02	62 85%	57 03%	16 94	19 34%	0 17%	1 19%	8 61				43,545
28 PT BANK OCBC NISP, Tbk	20,070,995	16 81	82 31%	77 62%	9 05	19 71%	2 44%	1 52%	11 41				288,788
29 PT BANK PERMATA Tbk	34,594,193	17 36	81 72%	78 50%	10 40	9 80%	9 30%	1 20%	8 02				388,969
30 PT BANK SBI INDONESIA	351,816	12 77	90 22%	73 05%	15 78	10 73%	3 47%	0 73%	6 27				823
31 PT BANK SINARMAS	2,050,048	14 53	74 96%	75 26%	14 22	15 03%	8 31%	1 14%	8 85				21,102
32 PT BANK SWADESI Tbk	972,457	13 78	97 96%	55 36%	11 66	24 06%	2 63%	2 06%	14 29				11,750
33 PT BANK UOB BUANA, Tbk.	15,999,305	16 58	81 29%	79 96%	6 04	19 86%	2 35%	3 33%	12 58				492,196
34 PT PAN INDONESIA BANK, Tbk	35,757,748	17 39	82 49%	55 17%	5 90	28 72%	9 34%	2 27%	16 95				873,499
35 PT ANGLOMAS INTERNASIONAL BANK	213,685	12 27	100 00%	88 20%	7 71	12 27%	3 33%	1 52%	7 54				1,705
36 PT BANK ANDARA	779,714	13 53	100 00%	72 11%	3 25	19 05%	8 14%	0 27%	10 57				-2,444
37 PT BANK ARTOS INDONESIA	236,503	12 37	100 00%	82 24%	7 11	18 23%	0 97%	0 13%	10 06				456
38 PT BANK BARCLAYS INDONESIA	809,918	13 64	100 00%	51 58%	5 93	14 48%	3 31%	1 74%	8 87				10,770
39 PT BANK BCA SYARIAH	756,210	13 54	100 00%	71 85%	15 31	16 55%	2 89%	1 41%	9 82				1,689
40 PT BANK BISNIS INTERNASIONAL	114,015	11 64	98 79%	72 00%	4 25	32 94%	3 82%	0 80%	10 46				897
41 PT BANK DIPO INTERNATIONAL	655,268	13 39	100 00%	88 22%	17 84	17 50%	2 72%	4 35%	11 84				19,316
42 PT BANK EKSEKUTIF INTERNASIONAL	1,334,042	14 10	100 00%	83 60%	9 70	11 30%	13 52%	-0 99%	6 55				-18,472
43 PT BANK FAMA INTERNASIONAL	305,836	12 63	100 00%	93 82%	7 19	16 82%	3 03%	3 90%	10 76				1,976
44 PT BANK HAGA INTERNASIONAL	1,199,013	14 00	94 29%	68 49%	12 54	13 07%	4 83%	0 32%	7 32				2,676
45 PT BANK INA PERDANA	318,517	12 70	100 00%	88 58%	3 77	18 64%	2 37%	1 50%	11 02				3,403
46 PT BANK JASA JAKARTA	2,185,555	14 60	88 36%	78 41%	12 54	19 82%	3 94%	3 59%	12 37				73,740
47 PT BANK KESEJAHTERAAN EKONOMI	500,693	13 12	100 00%	152 65%	3 78	34 13%	3 75%	6 26%	22 09				18,831
48 PT BANK MAYORA	360,131	12 79	88 21%	46 29%	5 87	19 52%	4 31%	0 75%	11 09				1,015
49 PT BANK MITRANIAGA	319,636	12 69	78 51%	55 21%	8 78	16 61%	2 36%	0 81%	9 58				2,468
50 PT BANK MUTI ARTA SENTOSA	462,862	13 05	100 00%	84 68%	14 64	19 35%	2 00%	1 37%	11 33				6,566
51 PT BANK SAHABAT PURBA DANARTA	74,222	11 21	100 00%	24 02%	5 84	206 65%	3 68%	2 13%	114 21				2,453
52 PT BANK SINAR HARAPAN BALI	184,095	12 13	100 00%	98 72%	4 65	19 03%	0 82%	3 69%	9 15				2,717
53 PT BANK TABUNGAN PENSIUNAN NASIONAL	6,153,579	15 64	99 79%	93 19%	23 36	20 70%	3 40%	4 25%	13 65				251,006
54 PT BANK VICTORIA INTERNATIONAL, Tbk	2,512,003	14 56	45 47%	41 20%	11 70	20 28%	6 03%	1 46%	11 88				27,571
55 PT BANK YUDHA BHAKTI	1,882,765	14 45	67 23%	57 37%	14 62	15 39%	4 01%	2 65%	9 82				15,190
56 PT CENTRATAMA NASIONAL BANK	539,963	13 20	100 00%	75 55%	9 32	15 38%	3 52%	2 07%	9 98				8,622
57 PT LIMAN INTERNATIONAL BANK	182,282	12 11	100 00%	84 90%	3 90	89 20%	2 94%	3 85%	51 18				14,084
58 PT PRIMA MASTER BANK	574,793	13 26	99 39%	84 06%	12 81	19 24%	1 24%	1 07%	7 59				4,489
59 BPD KALIMANTAN SELATAN	3,118,417	14 95	78 33%	38 49%	18 83	29 45%	2 68%	2 98%	12 71				78,167
60 BPD KALIMANTAN TIMUR	13,324,045	16 41	80 90%	32 94%	21 94	24 68%	1 58%	3 50%	15 52				340,791
61 BPD SULAWESI TENGGARA	681,597	13 43	100 00%	76 35%	4 56	22 27%	3 73%	6 20%	15 52				33,579
62 BPD YOGYAKARTA	2,960,553	14 76	94 41%	70 55%	15 30	15 72%	0 97%	3 61%	10 64				67,640
63 PT BANK DKI	11,277,582	16 24	60 74%	41 71%	3 31	18 47%	5 36%	1 62%	11 10				205,201
64 PT BANK LAMPUNG	1,349,170	14 16	99 31%	84 08%	5 15	14 65%	1 60%	3 25%	9 80				40,447
65 PT BANK KALTENG	2,301,631	14 65	91 39%	29 56%	13 25	21 50%	5 02%	2 72%	13 25				80,901
66 PT BPD ACEH	11,104,900	16 22	78 29%	24 22%	31 37	18 17%	1 48%	2 06%	11 07				270,441
67 PT BPD JAMBI	838,660	13 64	99 96%	53 69%	11 34	25 62%	1 18%	4 57%	16 62				32,118
68 PT BPD SULAWESI SELATAN	2,918,095	14 89	100 00%	72 92%	4 16	25 05%	2 09%	5 65%	16 79				183,003
69 PT BPD SUMATERA BARAT (BANK NAGARI)	3,456,683	15 51	94 56%	95 86%	8 18	17 28%	4 38%	4 20%	11 75				154,872
70 PT BPD JAWA BARAT DAN BANTEN	21,267,346	16 87	99 59%	87 33%	3 80	15 73%	0 45%	3 47%	10 53				577,604
71 PT BPD KALIMANTAN BARAT	1,899,561	14 46	84 93%	50 23%	8 66	12 96%	0 90%	3 91%	8 63				46,006
72 PT BPD MALUKU	1,018,145	13 83	80 82%	61 92%	2 63	21 53%	5 04%	0 97%	12 20				8,768
73 PT BPD BENGKULU	684,309	13 44	96 28%	69 78%	7 16	10 29%	2 23%	3 93%	7 56				20,108
74 PT BPD JAWA TENGAH	11,447,868	16 25	90 95%	88 56%	13 75	14 15%	0 57%	4 73%	10 32				468,234
75 PT BPD JAWA TIMUR	14,119,106	16 46	98 07%	93 33%	13 79	18 17%	0 61%	4 14%	12 26				554,649
76 PT BPD NUSA TENGGARA BARAT	1,843,518	14 43	99 28%	101 42%	3 16	16 94%	0 97%	3 78%	11 32				63,199
77 PT BPD NUSA TENGGARA TIMUR	1,438,983	14 18	100 00%	75 21%	10 09	16 63%	0 60%	4 89%	11 27				61,192
78 PT BPD SULAWESI TENGAH	398,041	12 89	100 00%	43 13%	8 99	18 09%	14 44%	1 39%	10 66				5,047
79 PT BPD SULAWESI UTARA	1,967,462	14 50	97 89%	87 15%	3 97	15 13%	1 10%	6 36%	11 87				90,683
80 PT BPD BALI	4,312,687	15 25	99 37%	84 15%	8 93	21 52%	1 54%	3 02%	14 52				194,703
81 PT BPD PAPUA (4% BPD IRIAN JAYA)	7,713,779	15 86	100 00%	73 31%	18 96	30 62%	1 88%	3 36%	18 55				163,115
82 PT BPD RIAU	14,327,957	16 48	96 07%	78 94%	36 19	24 83%	3 67%	2 83%	15 13				405,975
83 PT BPD SUMATERA SELATAN DAN BANGKA BELITUNG	6,864,335	15 74	96 49%	68 08%	14 18	15 23%	3 29%	1 53%	9 16				75,931
84 PT BPD SUMATERA UTARA	4,479,150	15 31	94 68%	56 99%	7 16	28 74%	4 32%	3 51%	17 66				340,718
85 PT ANZ PANIN BANK	4,952,968	15 42	93 07%	78 29%	21 53	18 06%	4 49%	5 06%	12 66				188,274
86 PT BANK COMMONWEALTH	5,446,134	15 51	43 26%	19 54%	18 53	37 09%	0 13%	0 11%	9 50				8,190
87 PT BANK AGRIS	1,083,101	13 90	95 08%	128 30%	0 48	33 39%	14 52%	1 21%	16 53				12,450
88 PT BANK BNP PARIBAS INDONESIA	1,240,005	14 03	97 06%	185 92%	0 77	31 80%	13 73%	3 25%	13 70				38,189
89 PT BANK DBS INDONESIA	19,617,478	16 18	81 60%	126 67%	1 19	19 86%	2 67%	2 11%	12 82				173,995
90 PT BANK KEB INDONESIA	2,345,044	14 67	84 96%	319 09%	1 03	43 47%	5 99%	6 30%	26 26				150,958
91 PT BANK MIZUHO INDONESIA	6,781,727	15 73	83 24%	311 14%	2 63	18 96%	14 47%	2 52%	11 79				160,911
92 PT BANK OCBC - INDONESIA	2,387,036	14 69	79 60%	118 25%	1 67	46 43%	9 85%	1 36%	26 89				40,093
93 PT BANK RI SONA PERDANIA	3,127,497	15 08	91 17%	149 81%	2 27	24 93%	7 64%	3 71%	15 69				127,237
94 PT BANK UOB INDONESIA	3,039,733	14 93	88 14%	86 70%	8 71	36 10%	5 90%	4 20%	22 05				139,333
95 PT BANK WINDU KENTJANA INTERNATIONAL, Tbk	645,401	13 41	76 23%	74 03%	2 79	41 89%	6 35%	2 10%	24 06				14,290
96 PT BANK WOORI INDONESIA	2,312,111	14 05	55 32%	73 77%	0 72	79 09%	3 42%	1 97%	46 53				166,830
97 PT BANK CHINA TRUST INDONESIA	3,999,240	15 20	53 54%	137 88%	5 66	17 74%	2 26%	5 40%	32 64				210,969
98 PT BANK SUMITOMO MITSUI INDONESIA	5,509,924	15 52	94 84%	833 83%	1 66	48 65%	2 94%	4 33%	28 98				233,904
99 ABN AMRO BANK	18,841,232	16 75	71 24%	91 08%	5 36	12 94%	3 90%	1 70%	8 01				312,716
100 CITIBANK N.A.	32,314,060	17 29	65 18%	57 17%	25 73	13 59%	4 90%	4 90%	11 71				1,582,966
101 DEUTSCHE BANK AG.	18,941,562	16 81	26 91%	99 79%	1 56	34 16%	10 30%	-0 72%	19 28				-153,844
102 STANDARD CHARTERED BANK	19,722,962	16 80	51 13%	74 53%	3 18	13 60%	4 78%	3 08%	10 22				3,006,668
103 THE BANGKOK BANK COMP. LTD	1,863,741	14 44	91 33%	201 54%	2 25	42 40%	18 19%	4 21%	25 96				67,020
104 THE BANK OF TOKYO MITSUBISHI UFJ LTD	14,887,108	16 52	97 07%	156 85%	4 32	34 85%	1 93%	2 37%	20 37				276,404
105 THE HONGKONG & SHANGHAI B.C.	24,454,836	17 01	76 21%	83 00%	42 02	37 48%	3 00%	4 00%	11 75				424,819
Mean	13,773,634	14 91	86 49%	76 05%	18 04	23 89%	4 13%	2 60%	16 49				309,443
Median	2,387,036	14 69	94 45%	76 53%	7 16	18 17%	3 01%	3 33%	11 42				59,555
Standard Deviation	34311091	3 75	19 62%	32 54%	9 96	22 26%	3 91%	1 43%	10 37				829,266
Min	74,222	11 21	26 91%	19 54%	0 48	9 80%	0 13%	-2 99%	4 55				-153,844
Max	254,298,743	19 35	100 00%	201 54%	42 50	206 65%	26 58%	7 51%	114 21				5,607,952
Total Asset	1,444,170,667												

Year 2006

Government-owned	Size (in Rp million)	Ln Size	Loans	LDR (%)	Deposit	CAR (%)	NPL Gross (%)	ROA (%)	Z-Score	LR Z-Score	Volatility σ	Volatility LR σ	EBT (in Rp million)
1 PT Bank Mandiri Tbk.	254,298,743	19 35	49 47%	49 86%	7 00	23 21%	26 58%	0 47%	12 95	2 5614	0 0130	-4 3407	1,142,836
2 PT Bank Negara Indonesia	147,106,315	18 81	56 38%	54 24%	6 18	15 99%	13 70%	1 61%	9 63	2 2847	0 0070	-4 9673	2,296,195
3 PT Bank Rakyat Indonesia Tbk	122,775,579	18 63	76 54%	77 63%	8 52	15 29%	4 64%	5 04%	11 12	2 4089	0 0077	-4 8605	5,607,932
4 PT Bank Tabungan Negara	32,575,464	17 32	64 23%	78 93%	3 59	16 56%	4 06%	1 66%	9 87	2 2993	0 0068	-5 3316	540,189
5 PT Bank Bukopin	31,883,545	17 27	95 59%	66 79%	7 97	13 06%	3 37%	2 09%	8 30	2 1161	0 0035	-5 5023	462,100
6 PT Bank Tabungan Pensiun Nasional	6,153,579	15 64	99 79%	93 19%	23 36	20 70%	3 40%	4 25%	13 65	2 6136	0 0246	-3 7036	251,006
Mean	99,134,204	17 64	73 67%	75 41%	9 27	17 47%	9 30%	2 52%	10 94	2 3773	0 0098	-4 9510	1,716,698
Median	77,691,322	17 94	79 09%	73 15%	7 48	16 28%	4 36%	1 88%	10 54	2 3541	0 0074	-4 9138	841,513
Standard Deviation	84364205 96	1 56	20 51%	18 32%	7 21	3 75%	9 35%	1 75%	7 05	0 1885	0 0082	0 9474	2045156 449
Min	6,153,579	15 64	45 47%	49 86%	2 99	13 06%	0 47%	0 20	3 3181	0 0015	-6 5023	251,008
Max	254,298,743	19 35	99 79%	93 19%	23 36	23 21%	26 58%	5 04%	13 65	2 6136	0 0246	-1 7036	5,607,952

Year 2006

Government-Regional	Size (in Rp million)	Ln Size	Loans	LDR (%)	Deposit	CAR (%)	NPL Gross (%)	ROA (%)	Z-Score	LR Z-Score	Volatility σ	Volatility LR σ	EBT (in Rp million)
1 BPD Kalimantan Selatan	3,118,417	14 95	78 33%	38 49%	18 83	29 45%	2 68%	2 98%	12 71	2 5422	0 0057	-5 3680	78,167
2 BPD Kalimantan Timur	13,324,045	16 41	80 90%	32 94%	21 94	24 68%	1 58%	3 50%	15 52	2 7454	0 0044	-4 7799	340,791
3 BPD Sulawesi Tenggara	681,597	13 43	100 00%	76 35%	4 56	22 27%	3 73%	6 20%	15 52	2 7454	0 0065	-4 2722	33,579
4 BPD Yogyakarta	2,960,553	14 76	94 41%	70 55%	15 30	15 72%	0 97%	3 61%	10 64	2 3647	0 0044	-5 4209	67,640
5 PT Bank Aceh	11,106,900	16 22	78 29%	24 22%	31 37	18 17%	1 48%	2 06%	11 07	2 4069	0 0077	-4 8696	270,441
6 PT Bank DKI	11,277,502	16 24	60 74%	41 71%	3 31	18 47%	5 36%	1 62%	11 10	2 4069	0 0100	-4 6055	205,201
7 PT Bank Lampung	1,349,170	14 16	99 31%	84 08%	5 15	14 65%	1 60%	3 25%	9 80	2 2621	0 0122	-4 4878	40,447
8 PT Bank Kaltim	4,212,687	15 25	99 37%	86 15%	6 93	21 52%	1 54%	3 02%	14 52	2 6754	0 0070	-4 9659	194,703
9 PT Bank Bengkulu	684,309	13 44	96 28%	69 78%	7 16	10 29%	2 23%	3 93%	7 56	2 0229	0 0032	-5 7484	20,108
10 PT BPD Jambi	838,660	13 64	99 96%	53 69%	11 34	25 62%	1 18%	4 57%	16 62	2 8109	0 0065	-5 0426	32,118
11 PT BPD Jawa Barat dan Banten	21,267,346	16 87	99 59%	87 33%	3 80	15 73%	0 45%	3 47%	10 53	2 3538	0 0042	-5 4741	577,604
12 PT BPD Jawa Tengah	11,447,868	16 25	90 95%	88 56%	13 75	14 15%	0 57%	4 73%	10 32	2 3326	0 0156	-4 1620	468,234
13 PT BPD Jawa Timur	14,119,106	16 46	98 07%	93 33%	13 79	18 17%	0 61%	4 14%	12 26	2 5016	0 0071	-4 9521	554,649
14 PT BPD Kalimantan Barat	1,899,561	14 46	84 93%	50 23%	8 66	12 96%	0 90%	3 91%	8 63	2 1625	0 0043	-5 6993	46,006
15 PT BPD Maluku	1,018,145	13 83	80 82%	61 92%	2 63	21 53%	5 04%	0 97%	12 31	2 5183	0 0030	-5 8020	8,768
16 PT BPD Nusa Tenggara Barat	1,843,518	14 43	99 28%	101 42%	3 16	16 94%	0 97%	3 76%	11 32	2 4258	0 0131	-4 5045	63,199
17 PT BPD Nusa Tenggara Timur	1,438,983	14 18	100 00%	75 21%	10 09	16 63%	0 60%	4 89%	11 77	2 4657	0 0034	-5 6825	61,192
18 PT BPD Papua (4% BPD Irian Jaya)	7,713,779	15 86	100 00%	73 31%	18 96	30 62%	1 88%	3 36%	18 55	2 7202	0 0057	-5 1586	163,115
19 PT BPD Riau Kepri	14,327,957	16 48	96 07%	78 94%	36 19	24 83%	3 67%	2 83%	15 13	2 7187	0 0062	-5 0840	405,975
20 PT BPD Sulawesi Selatan	2,918,095	14 89	100 00%	72 92%	4 16	25 05%	2 09%	5 65%	16 79	2 8210	0 0065	-5 0795	183,003
21 PT BPD Sulawesi Tengah	398,041	12 89	100 00%	43 13%	8 99	18 09%	14 44%	1 39%	10 66	2 3442	0 0037	-5 9964	5,047

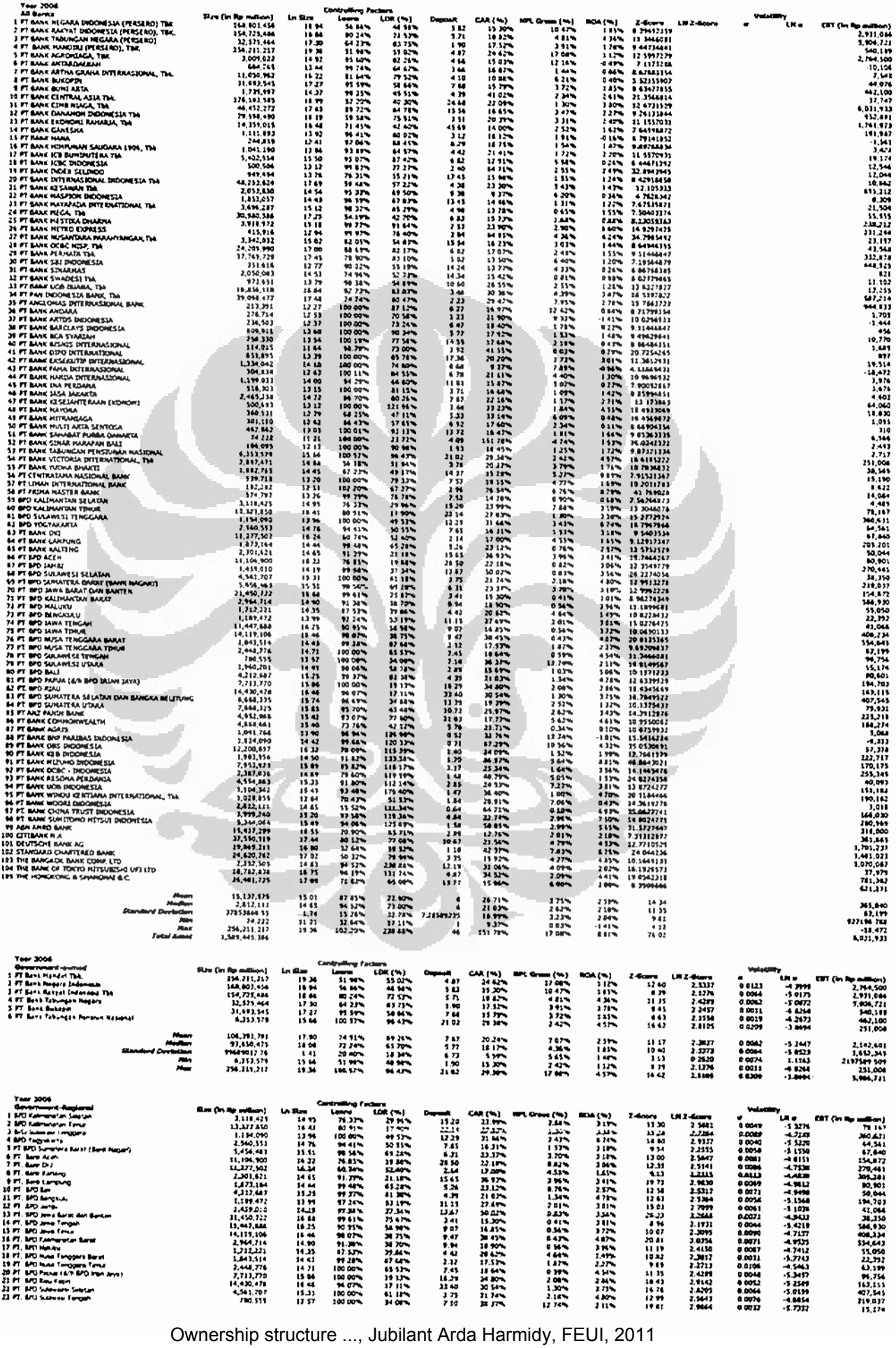
24 PT. BPD Sulawesi Utara	1,987,402	14.50	97.49%	67.15%	3.97	15.13%	1.19%	6.56%	11.87	2.4736	0.0031	-4.9305		90,602
25 PT. BPD Sumatera Utara	4,479,150	15.31	94.55%	56.99%	7.16	28.74%	4.32%	3.55%	17.86	2.8715	0.0023	-4.9161		160,716
26 PT. BPD Sumatera dan Banyak Seitung	6,864,335	15.74	96.59%	45.98%	14.16	13.21%	3.29%	1.57%	9.18	2.2166	0.0024	-5.8410		79,931
Mean	5,718,999	15.03	92.79%	57.72%	13.52	19.42%	2.75%	3.56%	12.56	2.5072	0.0064	-5.1081		165,567
Median	3,018,256	14.92	97.29%	59.46%	8.84	11.37%	3.76%	3.55%	11.82	2.4697	0.0064	-5.0587		85,752
Standard Deviation	5616438.421	1.12	19.95%	22.79%	8.91	5.02%	2.25%	1.43%	2.89	0.2282	0.0038	0.1327		165471.224
Min	298,041	13.65	60.74%	19.95%	2.31	10.23%	0.45%	0.87%	7.56	2.0229	0.0028	-5.8410		5,087
Max	21,297,366	17	100.00%	101.47%	36.19	30.67%	14.45%	6.56%	18.59	2.9225	0.0154	-4.1620		577,664

Year 2006

Nonsyariah	Controlling Factors										Volatility		
	Size (in Rp million)	Ln Size	Loans	LDR (%)	Deposit	CAR (%)	NPL Gross (%)	ROA (%)	Z-Score	Ln Z-Score	σ	Ln σ	EBT (in Rp million)
1 ABN AMRO BANK	18,941,232	16.75	71.24%	49.08%	5.36	12.94%	3.95%	1.79%	8.01	2.0805	0.0176	-4.0361	312,718
2 PT BANK ACEHS	3,582,181	13.98	95.09%	129.56%	0.46	33.39%	14.52%	1.21%	10.93	2.3906	0.0195	-4.5551	12,450
3 CITIBANK N.A.	32,314,080	17.29	65.19%	57.13%	25.73	13.59%	4.98%	4.98%	11.31	2.4167	0.0042	-5.4794	1,540,968
4 DEUTSCHE BANK AG.	19,941,540	16.81	26.91%	41.99%	1.56	34.14%	19.39%	-0.72%	18.28	2.9059	0.0335	-3.3963	-133,844
5 PT ANZ PANIN BANK	4,952,968	15.42	93.82%	78.29%	21.53	18.08%	4.49%	1.96%	12.66	2.5382	0.0125	-4.3810	188,374
6 PT BANK BNP PARIBAS INDONESIA	1,240,805	14.03	97.08%	185.92%	0.72	21.80%	13.73%	3.21%	13.70	2.6176	0.0093	-4.6743	38,189
7 PT BANK CHINA TRUST INDONESIA	3,999,240	15.20	93.56%	137.86%	3.66	17.74%	2.26%	3.46%	12.64	2.5382	0.0172	-4.0645	265,969
8 PT BANK CIMB Niaga	41,262,277	17.54	84.99%	85.35%	13.10	17.24%	5.25%	2.19%	10.58	2.3589	0.0040	-5.5185	740,472
9 PT BANK COMMONWEALTH	5,444,154	15.51	43.25%	19.35%	16.53	37.29%	9.13%	0.16%	9.50	2.2509	0.0265	-3.6300	8,190
10 PT Bank Danamon Indonesia Tbk	68,763,709	18.02	69.57%	80.42%	9.57	22.66%	2.56%	4.26%	14.74	2.6904	0.0097	-4.6399	2,679,641
11 PT BANK DBS INDONESIA	10,672,478	16.18	81.09%	128.87%	1.12	19.84%	2.63%	2.11%	12.02	2.4864	0.0113	-4.4782	172,995
12 PT Bank International Indonesia	47,331,844	17.67	54.72%	55.36%	5.30	21.76%	2.63%	2.11%	12.82	2.5521	0.0066	-5.0208	725,118
13 PT BANK KEB INDONESIA	2,345,044	14.67	84.95%	119.09%	1.03	41.67%	5.99%	0.36%	24.24	3.2423	0.0200	-3.9143	150,958
14 PT BANK MUTUNO INDONESIA	6,781,727	15.73	83.24%	121.14%	2.42	28.98%	1.49%	2.52%	11.75	2.4639	0.0075	-4.8864	160,913
15 PT BANK OCBC - INDONESIA	2,387,036	14.69	79.85%	138.35%	1.47	44.42%	6.83%	2.36%	26.69	3.2843	0.0043	-5.4506	46,093
16 PT Bank OCBC NISP Tbk	29,670,995	17.51	62.31%	77.67%	9.05	19.71%	2.48%	1.52%	13.61	2.6122	0.0046	-5.3797	289,784
17 PT Bank Permata	34,594,393	17.36	81.32%	78.50%	19.40	9.80%	5.39%	1.29%	6.02	1.7947	0.0054	-5.2127	389,969
18 PT BANK RESONA PERDANIA	2,527,897	14.74	91.17%	149.61%	2.27	24.93%	7.66%	3.71%	15.87	2.7616	0.0048	-5.3348	127,237
19 PT BANK SUMITOMO MITSUI INDONESIA	5,509,924	15.52	94.86%	132.83%	1.46	48.61%	3.84%	4.33%	28.98	3.3667	0.0106	-4.2264	233,904
20 PT BANK UOB INDONESIA	3,639,733	14.93	88.14%	86.79%	0.71	38.10%	5.99%	4.29%	22.05	3.0931	0.0097	-4.6366	130,333
21 PT BANK WOORI INDONESIA	2,812,121	14.85	55.32%	72.77%	0.72	29.09%	3.43%	5.97%	46.53	3.8401	0.0081	-5.0983	144,630
22 PT UOB Buana Tbk	15,599,505	16.56	81.23%	79.96%	6.84	19.86%	2.25%	3.13%	12.58	2.5318	0.0051	-5.2766	492,136
23 STANDARD CHARTERED BANK	19,772,662	16.80	51.12%	34.52%	3.58	33.65%	4.76%	5.08%	18.22	2.9242	0.0048	-5.5191	1,004,668
24 THE BANGKOK BANK COMP LTD	3,863,741	14.64	91.23%	201.54%	2.73	42.40%	10.19%	4.31%	25.50	3.2386	0.0237	-3.7424	67,820
25 THE BANK OF TOKYO MITSUBISHI UFJ LTD	14,687,108	16.52	97.87%	154.85%	4.37	34.85%	1.35%	2.79%	29.37	3.3141	0.0082	-4.7976	274,404
26 THE HONGKONG & SHANGHAI B.C.	26,454,836	17.01	78.21%	82.00%	42.02	17.44%	3.00%	4.00%	11.75	2.4639	0.0141	-4.2586	826,819
27 PT Bank Maybank Indonesia Tbk	7,678,045	15.12	98.35%	82.35%	5.32	14.19%	1.79%	0.84%	8.22	2.1061	0.0059	-5.1291	55,555
Mean	15,393,501	15.94	78.17%	96.42%	7.57	26.67%	4.99%	2.07%	18.27	2.6803	0.0112	-4.6945	407,685
Median	6,781,727	15.73	82.31%	82.35%	4.37	18.86%	3.96%	3.13%	12.66	2.5382	0.0093	-4.6743	166,274
Standard Deviation	16432636.98	1.19	18.46%	44.05%	9.51	15.14%	3.62%	2.59%	8.66	0.4585	0.0077	0.6292	547366.2682
Min	1,063,101	13.90	26.91%	19.54%	0.46	9.80%	0.13%	-0.72%	6.02	1.7947	0.0040	-5.5191	-133,844
Max	66,763,707	18.02	98.35%	201.54%	42.02	79.99%	14.52%	9.30%	46.53	3.8401	0.0335	-3.3963	2,679,641

Year 2006

Domestic	Controlling Factors										Volatility		
	Size (in Rp million)	Ln Size	Loans	LDR (%)	Deposit	CAR (%)	NPL Gross (%)	ROA (%)	Z-Score	Ln Z-Score	σ	Ln σ	EBT (in Rp million)
1 PT Anglomas Internasional Bank	213,865	12.27	100.00%	84.28%	7.72	17.27%	3.33%	1.62%	7.54	2.0207	0.0091	-4.7016	1,705
2 PT Bank Agrotopo Tbk	3,099,022	14.92	95.57%	94.01%	4.73	16.43%	4.83%	1.54%	9.68	2.2910	0.0137	-4.2909	-10,108
3 PT Bank Andara	378,714	12.83	100.00%	72.11%	2.29	19.05%	6.56%	0.37%	10.57	2.3579	0.0105	-4.5567	-1,644
4 PT Bank Artha Graha Internasional Tbk	10,852,396	16.20	94.17%	81.40%	3.75	15.89%	2.41%	1.22%	9.25	2.2247	0.0023	-6.0922	9,846
5 PT Bank Artos Indonesia	236,501	12.37	100.00%	82.24%	4.62	13.04%	4.73%	0.34%	6.23	1.8286	0.0007	-7.3154	31,370
6 PT Bank Bantara Indonesia	809,911	13.60	100.00%	91.58%	5.93	14.48%	3.31%	1.74%	8.87	2.1820	0.0079	-4.8431	456
7 PT Bank BCA Syariah	756,210	13.54	100.00%	73.85%	35.51	16.55%	2.69%	1.41%	9.82	2.2849	0.0061	-4.9112	10,776
8 PT Bank Bisnis Internasional	154,015	11.64	99.79%	72.09%	4.35	32.94%	3.82%	0.80%	15.46	2.7354	0.0008	-7.1780	897
9 PT Bank Bumi Arta	1,729,997	14.37	99.35%	99.10%	9.59	37.28%	3.01%	2.53%	23.78	3.0809	0.0011	-6.8470	37,747
10 PT Bank BCB Bumiputera Tbk	5,402,558	15.50	95.07%	80.65%	7.57	18.27%	7.98%	-1.24%	4.98	1.6063	0.0122	-4.4064	12,546
11 PT Bank Central Asia Tbk	488,577	13.10	100.00%	89.93%	5.24	57.84%	1.72%	7.52%	31.05	3.4379	0.0056	-5.1842	11,994
12 PT Bank Capital Indonesia Tbk	149,663,350	18.82	48.37%	41.78%	56.66	22.53%	1.71%	2.64%	13.66	2.6144	0.0060	-5.2903	5,095,932
13 PT Bank Chinatrust Indonesia Tbk	651,266	13.39	100.00%	88.22%	17.84	37.50%	2.77%	4.15%	11.84	2.4718	0.0065	-4.7725	19,514
14 PT Bank Finconesia Tbk	14,359,815	16.48	71.36%	52.75%	62.50	13.03%	0.85%	2.04%	9.24	2.1995	0.0019	-6.2540	191,984
15 PT Bank Ganesha	1,151,644	13.96	98.41%	73.81%	3.31	17.07%	4.39%	-0.31%	9.12	2.2356	0.0053	-5.2332	2,976
16 PT Bank Hana	234,801	12.37	86.49%	78.62%	8.61	18.47%	1.77%	2.41%	13.42	2.4356	0.0071	-4.9429	4,972
17 PT Bank Harda Internasional	1,199,033	14.00	94.29%	68.49%	12.54	13.07%	4.83%	0.32%	7.32	1.9913	0.0053	-5.2349	3,876
18 PT Bank Himpunan Saudara Tbk	746,899	13.52	92.39%	87.91%	6.23	15.86%	0.39%	1.74%	9.63	2.2647	0.0066	-4.7610	11,493
19 PT Bank Ina Perdana	328,317	12.70	100.00%	89.58%	3.77	18.64%	2.37%	1.50%	13.02	2.5995	0.0062	-3.0758	3,403
20 PT Bank Index Selindo	949,494	13.76	79.30%	86.75%	21.14	42.89%	2.98%	1.69%	7.98	2.4784	0.0029	-5.8592	10,662
21 PT Bank Indomonex Tbk	2,195,555	14.60	88.36%	78.41%	12.54	19.02%	1.96%	3.59%	12.37	2.5152	0.0094	-4.6634	73,740
22 PT Bank Internasional Indonesia	2,053,630	14.54	93.33%	55.40%	11.44	14.67%	12.76%	0.30%	7.66	2.0619	0.0003	-8.0152	8,309
23 PT Bank Kesejahteraan Ekonomi	500,693	13.12	100.00%	152.61%	3.78	34.13%	2.75%	6.26%	22.09	3.0953	0.0095	-4.6564	18,631
24 PT Bank Kespaan Indonesia	1,053,057	14.42	98.33%	56.79%	18.02	16.47%	1.86%	1.10%	9.61	2.2630	0.0038	-5.9691	21,904
25 PT Bank Kesawan Tbk	365,531	12.79	88.25%	46.29%	5.87	19.52%	4.31%	0.75%	11.09	2.4059	0.0020	-6.2295	2,035
26 PT Bank Kesejahteraan Ekonomi	30,960,366	17.25	54.19%	51.25%	7.79	11.13%	1.43%	1.25%	6.72	1.9120	0.0120	-4.4249	235,787
27 PT Bank Mayora	3,916,971	15.18	99.78%	159.90%	4.97	11.58%	3.25%	7.31%	15.91	2.7672	0.0039	-5.5299	291,245
28 PT Bank Mega Tbk	30,960,366	17.25	54.19%	51.25%	7.79	11.13%	1.43%	1.25%	6.72	1.9120	0.0120	-4.4249	235,787
29 PT Bank Mestika Dharma	3,916,971	15.18	99.78%	159.90%	4.97	11.58%	3.25%	7.31%	15.91	2.7672	0.0039	-5.5299	291,245
30 PT Bank Metro Express	415,916	12.94	99.97%	91.81%	6.80	62.45%	2.56%	3.94%	36.33	3.5928	0.0139	-4.4280	23,357
31 PT Bank Mitraniaga	329,636	12.69	78.51%	55.21%	8.70	16.61%	2.36%	0.81%	9.53	2.2546	0.0102	-4.5880	2,468
32 PT Bank Multi Arta Sentosa	462,862	13.05	100.00%	84.66%	14.68	19.35%	2.00%	1.37%	11.33	2.4279	0.0038	-5.5753	6,566
33 PT Bank Nusantara Parahyangan Tbk	3,342,032	15.02	62.05%	57.63%	18.94	10.34%	0.17%	1.59%	8.53	2.1758	0.0024	-6.0201	43,545
34 PT Bank Pundi Indonesia	1,334,942	14.10	100.00%	63.86%	9.79	31.36%	13.53%	-2.99%	4.35	1.5142	0.0267	-3.6230	-18,472
35 PT Bank Sahabat Purba Danarta	74,322	11.21	100.00%	24.02%	5.04	204.65%	5.84%	2.33%	114.21	4.7380	0.0070	-4.9622	2,493
36 PT Bank SBI Indonesia	351,418	12.77	90.22%	73.05%	15.29	10.72%	3.47%	0.72%	8.27	2.1154	0.0038	-5.5721	821
37 PT Bank Swar Harapan Bali	166,095	12.13	100.00%	94.72%	4.65	19.03%	0.82%	1.69%	9.15	2.2134	0.0086	-4.7599	2,717
38 PT Bank Sinarmas	2,850,983	14.93	74.96%	25.26%	14.22	15.03%	6.31%	1.14%	8.85	2.1799	0.0030	-5.8023	13,102
39 PT Bank Bandaad Tbk	872,457	13.78	97.96%	53.36%	11.66	24.06%	2.63%	3.06%	14.39	2.6595	0.0050	-5.3007	11,750
40 PT Bank Victoria Internasional, Tbk	2,112,905	14.56	43.43%	41.20%	11.70	20.28%	6.03%	2.46%	11.88	2.4759	0.0047	-5.3669	25,572
41 PT BANK WINDU KENTJANA INTERNATIONAL, Tbk	443,681	13.41	78.27%	74.07%	2.75	41.99%	6.25%	3.10%	24.06	3.1807	0.0627	-2.7706	14,290
42 PT Bank Yudha Bhakti	1,862,765	14.45	67.22%	57.27%	14.62	15.39%	4.01%	3.63%	8.87	2.2894	0.0128	-4.3587	15,196
43 PT Centratama Nasional Bank	539,983	13.20	100.00%	75.55%	9.77	15.38%	3.52%	2.87%	9.96	2.3009	0.0103	-4.5541	2,622
44 PT Lampa International Bank	287,282	12.57	100.00%	84.90%	3.90	89.79%	2.95%	3.81%	51.18	3.9357	0.0261	-3.6463	24,084
45 PT Pan Indonesia Bank Tbk	35,957,786	17.39	52.49%	53.17%	5.96	28.72%	9.34%	2.27%	16.95	2.8304	0.0151	-4.1913	823,499
46 PT Prima Master Bank	574,797	13.26	99.39%	62.31%	8.06	12.81%	1.24%	1.07%	7.59	2.0272	0.0016	-6.4339	4,489
Mean	6,240,351	13.86	89.48%	73.98%	10.76	35.62%	3.77%	1.77%	14.98	2.4534	0.0095	-5.1421	149,697
Median	753,555	13.53	97.27%	76.09%	7.64	19.72%	2.94%	1.82%	9.73	2.2960	0.0071	-4.9526	10,716
Standard Deviation	22743173.67	1.55	15.86%	22.53%	11.02	31.18%	2.89%	1.71%	17.20	0.6008	0.0119	1.0792	753537.9529
Min	74,322	11.21	43.43%	24.02%	2.75	10.34%	0.17%	-2.99%	4.35	1.5142	0.0003	-8.0152	-18,472
Max	149,663,350	18.82	100.00%	152.61%	62.50	204.65%	13.53%	7.31%	114	4.7380	0.0627	-2.7706	5,095,932



Ownership structure ..., Jubilant Arda Harmidy, FEUI, 2011

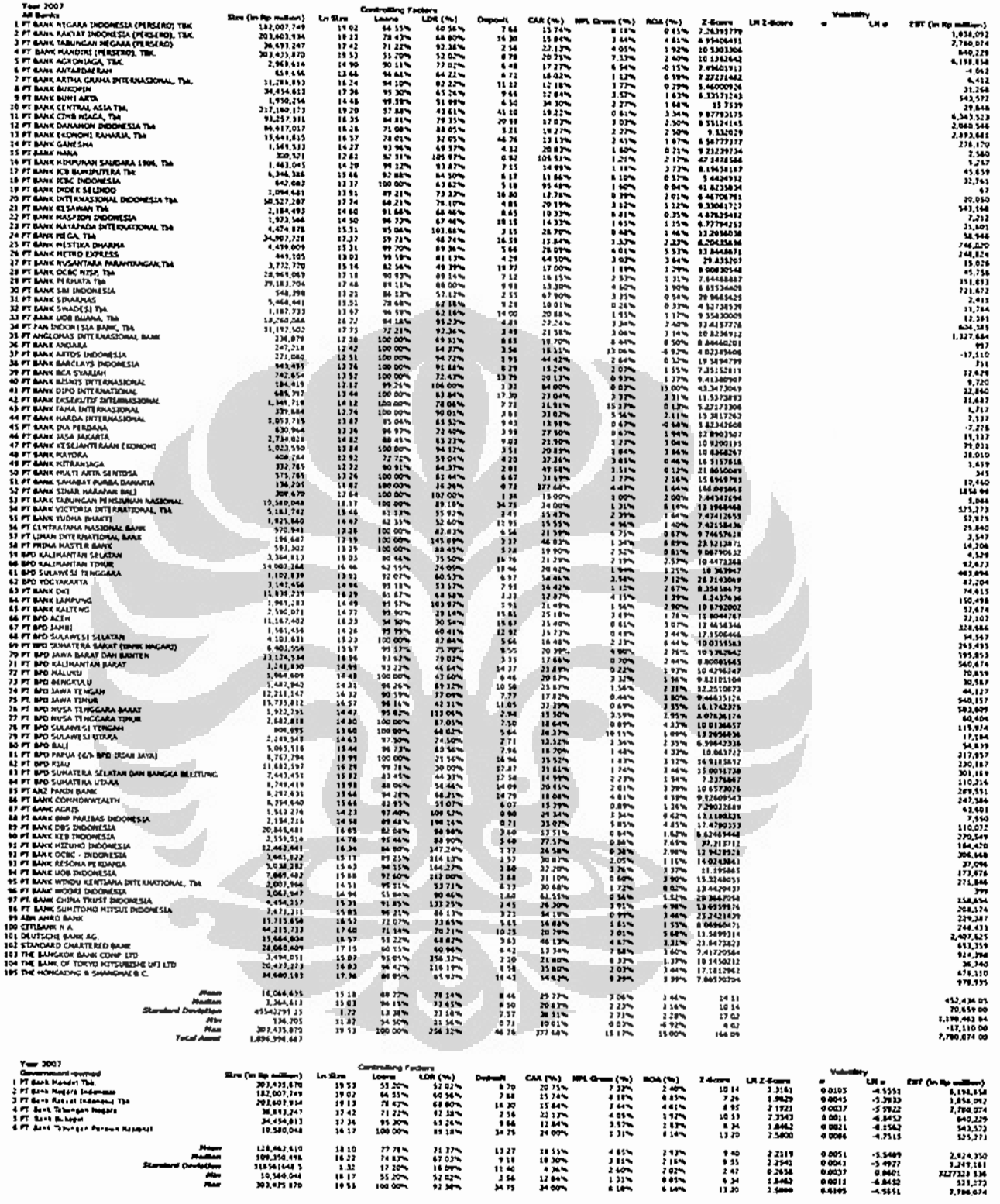
24 PT. BPD Sulawesi Utara	1,960,201	14.49	96.05%	58.72%	2.05	15.69%	1.02%	5.06%	10.16	2.3185	0.0186	-3.9863	90,501
25 PT. BPD Sumatera Utara	7,644,325	15.85	93.79%	43.45%	10.72	21.97%	2.62%	3.47%	14.29	2.6666	0.0046	-5.3780	225,218
26 PT. BPD Sumatera dan Bangka Belitung	8,868,335	15.74	96.67%	34.85%	12.39	19.39%	2.92%	3.32%	10.14	2.3162	0.0023	-6.0674	25,931
Mean	6,115,341	15.23	93.41%	46.99%	10.69	25.15%	2.33%	3.39%	13.97	2.5940	0.0069	-5.0446	176,562
Median	3,645,556	15.10	97.65%	46.31%	9.27	22.61%	1.70%	3.29%	12.61	2.5503	0.0067	-4.9985	93,679
Standard Deviation	5454499.052	0.94	9.79%	29.22%	7.83	9.78%	2.44%	1.17%	4.39	0.7424	0.0033	0.4431	163097.9709
Min	780,555	13.57	16.75%	13.11%	2.12	15.39%	0.11%	1.32%	8.96	2.1931	0.0023	-6.9863	13,174
Max	21,456,722	16.88	100.09%	87.86%	33.40	50.82%	12.74%	6.74%	26.23	3.2668	0.0186	-1.9863	584,930

Year 2008
Panelagreement

	Size (in Rp million)	Ln Size	Loans	LDR (%)	Deposit	CAR (%)	NPL Gross (%)	ROA (%)	Z-Score	LN Z-Score	e	Ln e	EBT (in Rp million)
1 ABN AMRO BANK	15,427,299	16.55	70.90%	85.71%	2.89	12.76%	2.01%	2.18%	7.31	1.9897	0.0154	-4.1711	361,865
2 PT BANK ACALS	1,091,758	13.90	86.96%	126.86%	0.52	32.76%	12.76%	-1.01%	15.54	2.744	0.013	-4.353	-9,233
3 CITIBANK N.A.	27,150,519	17.44	80.37%	77.08%	19.67	21.34%	4.79%	4.53%	12.77	2.5472	0.0053	-5.2426	1,701,237
4 DEUTSCHE BANK AG	19,869,711	16.80	32.84%	59.32%	3.18	42.37%	7.85%	6.75%	24.04	3.1799	0.0332	-3.4054	1,481,023
5 PT ANZ PANIN BANK	4,952,968	15.42	91.07%	77.66%	21.63	17.77%	5.62%	4.61%	10.96	2.3936	0.0063	-5.0719	188,224
6 PT BANK BNP PARIBAS INDONESIA	1,824,090	14.42	98.88%	120.32%	0.71	67.29%	10.56%	4.32%	35.05	3.5569	0.0074	-4.9055	57,378
7 PT BANK CHINA TRUST INDONESIA	3,999,240	15.20	93.58%	119.36%	4.84	22.74%	2.98%	3.59%	14.88	2.6966	0.0167	-4.0944	280,949
8 PT BANK CIMB Niaga	44,452,272	17.65	89.72%	84.78%	15.56	16.45%	3.47%	2.27%	9.26	2.2256	0.0035	-5.6521	952,891
9 PT BANK COMMONWEALTH	4,868,645	15.40	73.75%	80.12%	5.76	21.71%	0.34%	0.15%	30.68	3.3680	0.0053	-5.2333	5,088
10 PT Bank Danamon Indonesia Tbk	79,596,490	18.19	59.56%	75.51%	3.31	29.33%	3.01%	2.69%	31.36	3.4420	0.0112	-4.4896	3,761,923
11 PT BANK DBS INDONESIA	12,200,897	16.32	78.89%	115.39%	1.40	24.89%	1.52%	1.99%	12.77	2.5468	0.0078	-4.8575	222,717
12 PT Bank International Indonesia	48,253,624	17.69	59.48%	57.22%	4.38	23.50%	5.42%	1.43%	12.31	2.4934	0.0052	-5.2512	633,312
13 PT BANK ICB INDONESIA	1,993,918	14.50	91.02%	133.59%	1.70	88.93%	5.56%	8.85%	46.88	3.8447	0.0206	-3.8737	570,175
14 PT BANK MIZUHO INDONESIA	7,933,923	15.89	85.82%	116.17%	2.37	25.34%	1.56%	3.56%	14.15	2.6495	0.0073	-4.9178	255,345
15 PT BANK OCBC - INDONESIA	2,387,036	14.69	79.69%	119.59%	1.46	48.79%	5.95%	1.93%	24.83	3.2119	0.0069	-4.9788	40,093
16 PT Bank OCBC NISP Tbk	24,205,990	17.00	88.69%	82.17%	6.82	17.87%	2.43%	1.55%	9.31	2.2099	0.0053	-5.2364	322,878
17 PT Bank Permata	37,769,729	17.45	78.90%	83.10%	5.02	13.50%	6.98%	1.20%	7.20	1.9735	0.0054	-5.2127	448,525
18 PT BANK RESONA PERDANIA	4,594,865	15.32	91.80%	112.14%	2.85	24.52%	7.27%	3.65%	22.87	3.1299	0.0042	-5.4775	131,182
19 PT BANK SUMITOMO MITSUI INDONESIA	5,344,064	15.49	94.06%	125.69%	1.56	58.85%	2.99%	5.67%	21.57	3.4522	0.0136	-4.2963	218,000
20 PT BANK UOB INDONESIA	5,104,342	15.45	93.65%	126.40%	1.47	30.40%	1.00%	0.70%	20.12	3.0016	0.0097	-4.6365	190,152
21 PT BANK WOORI INDONESIA	2,812,111	14.85	55.52%	131.34%	0.84	84.71%	8.10%	6.93%	35.07	3.5573	0.0067	-5.0109	166,030
22 PT UOB Buana Tbk	16,454,118	16.64	92.73%	81.03%	3.66	20.26%	4.79%	3.47%	16.56	2.8070	0.0037	-5.6070	587,214
23 STANDARD CHARTERED BANK	24,620,762	17.02	98.35%	79.96%	3.36	15.93%	4.27%	0.69%	10.17	2.3191	0.0066	-5.0201	5,870,967
24 THE BANGKOK BANK COMP LTD	2,252,505	14.83	94.59%	238.46%	12.19	31.06%	4.09%	2.67%	16.19	2.7844	0.0185	-4.0092	37,979
25 THE BANK OF TOKYO MITSUBISHI UFJ LTD	18,782,838	16.75	96.19%	131.76%	4.83	34.53%	2.09%	4.61%	19.06	2.9624	0.0062	-4.7975	781,362
26 THE HONGKONG & SHANGHAI B.C	26,681,335	17.09	71.42%	65.09%	13.77	15.06%	6.80%	2.00%	8.35	2.1224	0.0125	-4.3761	621,271
27 PT Bank Mayapada International Tbk	3,696,287	15.12	98.37%	85.29%	4.96	19.78%	0.86%	1.15%	7.58	2.0254	0.0052	-5.2566	19,515
Mean	17,070,196	16.03	81.14%	103.17%	5.16	31.32%	4.26%	3.46%	16.93	2.8919	0.0095	-4.8414	678,468
Median	7,953,923	15.89	88.69%	85.71%	3.46	24.89%	4.09%	3.47%	13.87	2.6299	0.0069	-4.9788	280,949
Standard Deviation	18960267.45	1.19	17.08%	40.16%	5.22	19.00%	2.19%	2.27%	10.00	0.5131	0.0067	0.6231	1048547.6109
Min	1,091,758	13.90	32.84%	42.12%	0.52	12.76%	0.10%	-3.01%	7.20	1.9735	0.0023	-6.0674	-9,233
Max	79,596,490	18.19	98.69%	238.46%	21.63	88.93%	12.74%	6.81%	46.88	3.8477	0.0332	-3.4054	5,781,923

Year 2008
Domestic

	Size (in Rp million)	Ln Size	Loans	LDR (%)	Deposit	CAR (%)	NPL Gross (%)	ROA (%)	Z-Score	LN Z-Score	e	Ln e	EBT (in Rp million)
1 PT Anglomas International Bank	713,391	13.27	100.00%	67.12%	6.27	16.97%	12.42%	0.84%	8.72	2.1654	0.0111	-4.5029	3,705
2 PT Bank Agroniaga Tbk	3,009,022	14.92	95.69%	82.26%	4.86	15.03%	12.16%	-0.49%	7.32	1.9625	0.0152	-4.1894	-10,108
3 PT Bank Andara	776,716	13.57	100.00%	70.59%	1.22	21.80%	9.23%	-1.41%	10.03	2.3056	0.0158	-4.1466	-1,644
4 PT Bank Artha Graha International Tbk	31,950,962	16.22	81.66%	79.52%	4.18	19.88%	3.44%	0.86%	8.66	2.1605	0.0027	-5.9136	7,343
5 PT Bank Artos Indonesia	236,503	12.37	100.00%	73.24%	0.47	18.40%	1.78%	0.22%	9.11	2.2095	0.0009	-7.0563	44,076
6 PT Bank Barclays Indonesia	809,911	13.60	100.00%	90.36%	5.77	17.92%	1.52%	1.46%	9.56	2.2609	0.0054	-5.2156	436
7 PT Bank BCA Syariah	756,330	13.54	100.35%	77.56%	14.35	17.64%	2.19%	0.92%	8.86	2.1821	0.0073	-4.9260	10,770
8 PT Bank Bintang Internasional	314,015	12.66	98.79%	73.00%	3.92	41.35%	0.03%	0.77%	20.73	3.0314	0.0708	-2.6478	897
9 PT Bank Bumi Arta	1,739,997	14.37	99.35%	95.51%	4.39	41.02%	2.34%	2.61%	21.36	3.0614	0.0046	-5.3218	37,747
10 PT Bank BCB Bumiputera Tbk	5,462,554	15.56	95.07%	87.42%	6.82	12.81%	5.58%	0.26%	6.45	1.8636	0.0106	-4.5448	12,546
11 PT Bank BCBC Indonesia	500,506	13.12	99.82%	77.27%	2.60	84.71%	2.35%	2.48%	22.89	3.4853	0.0274	-4.3899	12,044
12 PT Bank Central Asia Tbk	176,183,545	19.98	52.20%	60.30%	24.68	22.09%	1.30%	3.80%	12.67	2.5395	0.0029	-5.9789	6,031,933
13 PT Bank Chinatrust Indonesia	651,895	13.39	100.00%	85.78%	12.36	20.20%	3.72%	3.01%	11.36	2.4302	0.0092	-4.6870	19,514
14 PT Bank Commonwealth Tbk	14,358,015	16.48	71.45%	62.60%	45.69	14.05%	2.52%	1.42%	7.85	2.0342	0.0018	-6.3364	191,987
15 PT Bank Dipo Internasional	304,834	12.63	100.15%	84.55%	0.78	21.31%	4.46%	1.20%	10.97	2.3951	0.0041	-5.4958	3,676
16 PT Bank Ganesha	1,131,893	13.94	99.46%	80.82%	3.12	18.52%	1.91%	-0.16%	6.79	1.9136	0.0080	-4.8284	-1,344
17 PT Bank Hana	244,859	12.41	97.96%	88.45%	0.29	18.75%	1.54%	1.47%	9.90	2.2923	0.0064	-4.9839	3,421
18 PT Bank Harda Internasional	1,199,033	14.00	94.29%	68.80%	31.81	15.87%	9.07%	0.27%	7.90	2.0669	0.0061	-4.8123	3,678
19 PT Bank Himpunan Saudara Tbk	1,043,190	13.86	93.85%	84.57%	4.42	21.41%	1.72%	2.29%	11.56	2.4473	0.0097	-4.6354	19,174
20 PT Bank Ina Perdana	518,303	13.15	100.00%	81.55%	2.71	18.66%	1.09%	1.42%	9.86	2.1815	0.0059	-5.1313	4,662
21 PT Bank Index Selindo	949,604	13.76	96.21%	55.21%	27.45	15.88%	1.35%	1.26%	8.43	2.1317	0.0034	-5.6832	10,662
22 PT Bank Internasional Indonesia Tbk	2,661,338	14.72	86.70%	80.26%	7.87	22.19%	1.17%	2.75%	12.17	2.4983	0.0061	-4.8188	64,060
23 PT Bank Kesawan Tbk	3,033,830	14.54	95.32%	69.50%	9.38	9.27%	6.29%	0.36%	4.76	1.5606	0.0063	-4.8760	8,309
24 PT Bank Kesejahteraan Ekonomi	500,693	13.13	100.00%	123.98%	2.44	33.23%	1.36%	4.55%	18.49	2.9174	0.0132	-4.3237	16,830
25 PT Bank Mandiri Indonesia	1,853,053	14.43	96.59%	87.83%	13.45	14.46%	1.31%	1.22%	7.66	2.0380	0.0024	-6.0251	22,504
26 PT Bank Mayapada Tbk	360,131	12.79	68.25%	47.11%	9.33	33.16%	6.89%	0.48%	16.46	2.8008	0.0010	-6.2965	7,055
27 PT Bank Mayora	30,980,566	17.25	54.19%	42.79%	6.82	15.23%	1.66%	0.86%	8.53	2.0956	0.0097	-4.6343	236,332
28 PT Bank Mega Tbk	3,916,977	15.18	99.77%	91.66%	2.53	23.90%	2.90%	2.69%	14.93	2.7034	0.0098	-4.6231	231,244
29 PT Bank Mestika Dharma	415,916	12.94	98.97%	76.40%	3.84	64.45%	4.36%	9.26%	34.80	3.5486	0.0127	-4.3636	28,157
30 PT Bank Metro Express	301,110	12.62	86.42%	57.45%	6.82	37.60%	2.36%	9.11%	8.67	3.1598	0.0113	-4.4781	310
31 PT Bank Mitraniaga	442,863	13.00	100.01%	93.12%	13.71	28.47%	1.81%	1.66%	9.85	2.2878	0.0041	-5.4942	6,566
32 PT Bank Multi Arta Sentosa	2,342,021	15.02	82.05%	54.83%	15.56	26.29%	3.01%	1.46%	8.65	2.1575	0.0030	-5.8209	43,566
33 PT Bank Nusantara Parahyangan Tbk	1,334,042	14.10	100.00%	74.80%	8.66	9.37%	7.89%	0.96%	4.12	1.4151	0.0126	-4.0505	-28,472
34 PT Bank Pundi Indonesia	24,322	10.10	100.00%	21.72%	4.09	151.79%	4.79%	3.57%	76.02	4.3311	0.0081	-4.8185	2,493
35 PT Bank Sahabat Purba Danarta	352,816	12.77	99.22%	51.59%	14.24	13.77%	4.33%	0.25%	6.87	1.9264	0.0079	-5.1554	821
36 PT Bank SBI Indonesia	186,095	12.13	100.00%	90.98%	1.93	18.45%	1.25%	1.73%	9.87	2.2898	0.0065	-4.7639	2,717
37 PT Bank Swadesi Tbk	2,050,083	14.53	74.98%	52.72%	14.34	15.42%	0.81%	0.98%	8.03	2.0829	0.0053	-5.2842	11,102
38 PT Bank Syariah Bukopin	973,651	13.79	98.30%	54.89%	10.60	26.55%	2.55%	1.28%	13.62	2.6137	0.0058	-5.1565	12,751
39 PT Bank Victoria Internasional Tbk	2,897,471	14.88	56.18%	51.94%	3.78	20.27%	3.79%	1.76%	10.78	2.3780	0.0013	-6.6484	38,545
40 PT BANK WINDU KENTJANA INTERNATIONAL, Tbk	1,026,855	13.84	79.49%	51.53%	1.84	26.91%	7.06%	0.47%	14.36	2.6646	0.0113	-3.4832	190,162
41 PT Bank Yudha Bhakti	1,862,763	14.45	67.27%	49.17%	14.37	15.29%	5.27%	0.89%	7.92	2.0668	0.0138	-4.2827	15,190
42 PT Centratama Nasional Bank	539,719	13.20	100.98%	79.35%	7.57	19.15%	4.79%	1.69%	10.28	2.3275	0.0195	-3.9937	8,622
43 PT Liman International Bank	182,782	12.11	102.29%	47.27%	2.96	78.54%	6.78%	0.79%	41.77	3.7322	0.0261	-3.8446	14,046
44 PT Pan Indonesia Bank Tbk	39,098,477	17.48	74.74%	80.47%	3.23	28.47%	7.95%	2.78%	15.79	2.7591	0.0149	-4.2042	944,833
45 PT Prima Master Bank	574,797	13.26	99.39%	78.78%	7.52	14.78%	0.90%	0.69%	7.57	2.0239	0.0016	-6.4161	4,489
Mean	6,938,797	13.90	90.37%	70.25%	8.45	29.87%	3.29%	1.82%	13.45	2.4014	0.0102	-5.0319	180,195
Median	879,703	13.66	97.72%	74.80%	6.36	18.45%	2.55%	1.26%	9.67	2.2694	0.0080	-4.8241	10,716
Standard Deviation	26562748.94	1.57	14.05%	18.47%	7.66	23.66%	2.90%	1.92%	12.10	0.5555	0.0118	1.0072	1041197.5723
Min	24,322	10.10	52.20%	21.72%	1.22	9.37%	0.03%	-1.41%	4.12	1.4151	0.0003	-6.9760	-28,472
Max	176,183,545	19.99	102.29%	123.98%	45.69	151.79%	12.42%	9.26%	76.02	4.3311	0.0708	-2.6478	6,031,933

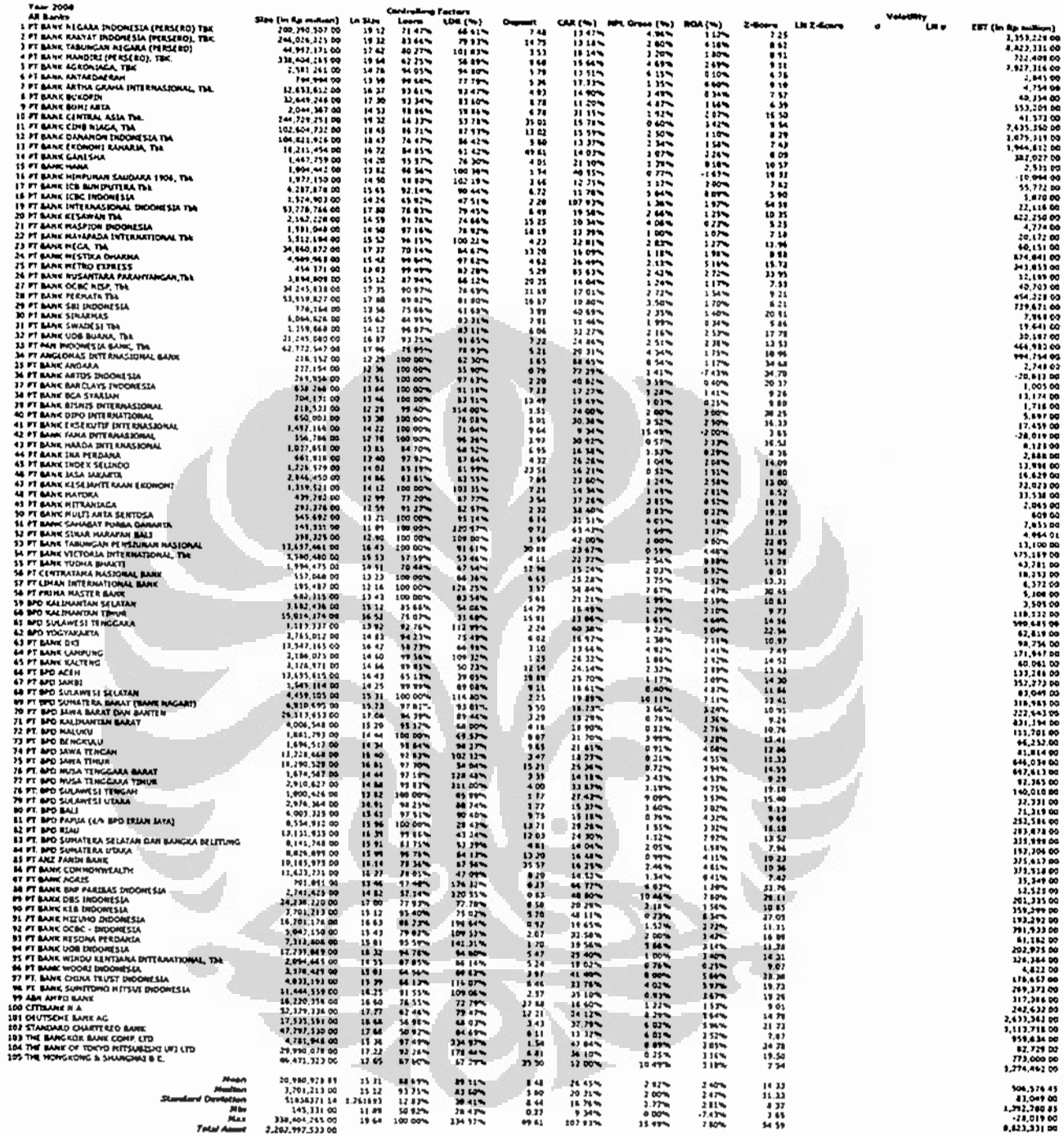


Ownership structure ..., Jubilant Arda Harmidy, FEUI, 2011

24 PT. BPD Sulawesi Utara	2,249,548	14.63	97.50%	74.50%	2.71	12.52%	1.34%	2.53%	6.50	1.8868	0.0186	-3.9942	54,639
25 PT. BPD Sumatera Utara	8,749,419	15.98	84.06%	56.46%	14.09	20.95%	2.81%	3.39%	10.66	2.3662	0.0033	-5.7028	289,551
26 PT. BPD Sumatera dan Bengkulu Lampung	7,443,451	15.82	83.45%	44.32%	32.58	14.99%	2.23%	1.54%	7.24	1.9793	0.0028	-5.8670	110,716
Mean	6,484,267	15.30	91.35%	58.92%	9.39	23.69%	2.24%	3.06%	11.58	2.3929	0.0061	-5.2502	192,327
Median	3,734,322	15.33	97.32%	59.47%	8.27	20.91%	1.79%	2.82%	10.40	2.3435	0.0053	-5.2483	113,095
Standard Deviation	5642291.14	0.92	12.96%	24.42%	9.28	9.66%	2.00%	1.35%	4.54	0.3267	0.0037	0.5658	171262.464
Min	908,975	13.98	54.50%	21.38%	1.91	12.52%	0.12%	1.79%	6.24	1.8316	0.0021	-6.1968	17,184
Max	23,124,534	16.98	100.00%	153.06%	38.46	58.46%	10.11%	7.12%	28.73	3.3574	0.0166	-3.9942	583,609

Year 2007 Foreign-owned	Size (in Rp million)	Ln Size	Loans	LDR (%)	Deposit	CAR (%)	NPL Gross (%)	ROA (%)	Z-Score	LN Z-Score	Volatility σ	Volatility LR σ	EBT (in Rp million)
1 ABN AMRO BANK	15,715,858	18.57	72.07%	73.65%	5.65	16.84%	1.82%	2.35%	8.07	2.0881	0.0030	-5.7991	246,433
2 PT Bank Andara	247,218	12.42	100.00%	84.37%	2.56	16.21%	12.06%	4.82%	6.82	1.9182	0.0288	-3.2182	-17,110
3 CITIBANK N.A.	44,215,733	17.60	71.19%	70.21%	10.25	20.79%	7.01%	5.68%	11.59	2.4501	0.0057	-5.1737	2,407,825
4 DEUTSCHE BANK AG	15,664,804	16.57	59.22%	48.62%	3.83	46.12%	4.87%	3.31%	21.65	3.0749	0.0337	-3.3908	653,159
5 PT ANZ PANIN BANK	8,297,631	15.66	94.28%	66.21%	14.79	18.08%	4.81%	4.99%	9.93	2.2952	0.0023	-6.0813	247,586
6 PT BANK BNP PARIBAS INDONESIA	2,154,718	14.58	89.48%	194.16%	0.71	31.97%	5.65%	4.45%	17.48	2.8610	0.0195	-3.9366	110,972
7 PT BANK CHINA TRUST INDONESIA	4,454,357	15.31	91.85%	127.25%	2.45	26.30%	2.31%	4.98%	13.70	2.6171	0.0110	-4.5077	208,174
8 PT BANK COMMONWEALTH	8,354,640	15.64	82.95%	59.07%	6.07	15.39%	0.89%	1.26%	7.29	1.9865	0.0062	-5.0678	2,080,548
9 PT Bank Danamon Indonesia Tbk	84,617,617	18.26	71.08%	88.05%	5.21	19.27%	2.27%	2.56%	9.53	2.2547	0.0113	-4.4847	2,893,881
10 PT Bank DBS INDONESIA	20,645,661	16.85	62.08%	98.96%	2.60	13.51%	0.84%	1.42%	8.62	2.1568	0.0027	-5.9102	270,549
11 PT BANK ICBC Indonesia	6,346,386	15.66	92.68%	84.50%	8.17	11.86%	6.10%	8.57%	5.44	1.6942	0.0060	-4.8302	32,781
12 PT Bank International Indonesia	642,087	13.37	100.00%	63.62%	1.18	95.44%	1.60%	0.09%	42.82	3.7575	0.0137	-4.4455	67
13 PT BANK KEB INDONESIA	50,527,287	17.74	68.21%	76.10%	4.65	20.19%	2.12%	1.17%	9.33	2.2332	0.0026	-5.9527	543,164
14 PT BANK MIZUHO INDONESIA	2,538,314	14.76	95.46%	88.95%	5.40	27.57%	0.86%	7.49%	37.31	3.6194	0.0120	-4.4227	164,429
15 PT Bank Nusantara Parahyangan Tbk	12,487,441	16.34	86.80%	147.24%	1.12	26.56%	0.38%	2.98%	12.94	2.5605	0.0045	-5.4011	309,566
16 PT BANK OCBC - INDONESIA	3,722,779	15.13	82.56%	49.79%	19.77	17.00%	3.89%	1.29%	6.01	1.8005	0.0018	-6.3074	45,756
17 PT Bank OCBC NISP Tbk	3,641,822	15.11	99.25%	114.17%	1.57	30.87%	2.05%	1.19%	14.02	2.6408	0.0053	-5.2315	37,096
18 PT Bank Permata	28,969,069	17.18	90.97%	89.14%	7.12	16.15%	2.52%	1.31%	7.84	2.0340	0.0031	-6.7766	351,893
19 PT BANK RESONA PERDANIA	29,183,708	17.48	89.11%	88.08%	9.96	13.30%	4.60%	1.90%	6.86	1.9554	0.0036	-5.6383	721,672
20 PT BANK SUMITOMO MITSUI INDONESIA	5,038,282	15.43	94.13%	184.27%	1.86	22.20%	3.76%	3.77%	11.29	2.4155	0.0031	-5.7795	173,678
21 PT BANK UOB INDONESIA	7,671,311	15.85	96.21%	84.13%	3.21	54.19%	0.99%	3.46%	25.24	3.2283	0.0099	-4.6180	229,387
22 PT BANK WOORI INDONESIA	2,899,982	15.88	92.68%	152.98%	2.88	31.19%	8.98%	3.98%	15.52	2.7295	0.0056	-5.2127	271,846
23 PT IVOB Bosna Tbk	3,067,947	14.94	55.56%	90.46%	3.60	81.55%	0.56%	3.52%	29.37	3.3799	0.0064	-5.0591	158,654
24 STANDARD CHARTERED BANK	18,260,066	16.73	94.18%	95.23%	4.88	27.24%	1.32%	3.69%	13.42	2.5864	0.0050	-5.3009	604,385
25 THE BANGKOK BANK COMP. LTD	21,080,409	17.15	80.13%	80.96%	6.42	23.34%	7.68%	2.69%	7.42	2.0038	0.0119	-4.4324	924,398
26 THE BANK OF TOKYO MITSUBISHI UFJ LTD	3,494,051	15.07	95.05%	216.32%	3.20	31.89%	8.37%	3.77%	10.15	2.3170	0.0124	-4.3931	36,740
27 THE HONGKONG & SHANGHAI B C	20,427,273	16.83	98.42%	216.19%	9.38	35.89%	2.02%	3.66%	17.18	2.8439	0.0083	-4.7890	878,119
28 PT Bank Sinarmas Tbk	34,848,161	17.36	80.05%	65.92%	10.43	14.62%	9.25%	3.39%	7.69	2.0651	0.0084	-4.7827	978,935
29 PT Bank Mayapada Internasional Tbk	2,167,733	13.97	98.59%	62.16%	14.00	20.86%	3.95%	1.17%	9.56	2.2574	0.0065	-5.0284	12,361
30 PT Bank Swadesi Tbk	4,476,879	15.31	91.08%	103.86%	3.15	29.78%	0.46%	1.44%	33.21	3.5006	0.0032	-5.7541	58,946
Mean	18,851,016	15.97	85.37%	97.25%	5.22	28.56%	3.56%	2.52%	12.60	2.4505	0.0069	-5.0651	499,799
Median	7,671,311	15.85	89.48%	88.08%	5.18	20.79%	2.52%	2.56%	10.15	2.3170	0.0062	-5.0678	246,433
Standard Deviation	23645797.31	1.39	12.77%	44.21%	5.07	19.66%	3.05%	2.47%	8.92	0.5466	0.0064	0.8001	714714.5997
Min	247,218	12.42	55.56%	49.79%	0.71	31.86%	0.38%	4.82%	4.82	1.3522	0.0013	-6.7766	-17,110
Max	93,257,331	18.35	100.00%	216.32%	20.59	91.44%	13.06%	7.69%	41.82	3.7335	0.0288	-3.2493	2,893,881

Year 2007 Domestic	Size (in Rp million)	Ln Size	Loans	LDR (%)	Deposit	CAR (%)	NPL Gross (%)	ROA (%)	Z-Score	LN Z-Score	Volatility σ	Volatility LR σ	EBT (in Rp million)
1 PT Anglomas Internasional Bank	236,679	12.38	100.00%	69.51%	8.65	19.70%	8.66%	0.16%	8.84	2.1798	0.0044	-5.4315	997
2 PT BANK AGRIS	1,513,278	14.23	97.40%	109.52%	0.98	29.30%	3.34%	0.62%	13.32	2.5760	0.0105	-4.5533	7,550
3 PT Bank Agroniaga Tbk	2,969,614	14.90	90.11%	77.82%	6.46	19.27%	6.36%	0.13%	7.50	2.0144	0.0094	-4.8654	-4,062
4 PT Bank Antar Daerah	819,456	13.66	98.61%	84.32%	0.72	16.02%	1.12%	0.59%	7.27	1.9841	0.0030	-5.8215	6,412
5 PT Bank Artos Indonesia	11,246,453	16.24	94.19%	82.22%	31.12	12.18%	3.77%	0.29%	3.46	1.6975	0.0004	-7.7043	31,244
6 PT Bank Bisnis Indonesia	231,060	12.51	100.00%	84.72%	1.95	44.42%	2.66%	0.32%	19.98	2.9750	0.0012	-6.7458	751
7 PT Bank BPD Jambi	942,455	13.76	100.00%	91.48%	8.29	13.06%	2.69%	1.51%	7.35	1.9943	0.0014	-6.5370	12,629
8 PT Bank BCA Syariah	742,654	13.52	100.00%	72.43%	13.79	26.13%	0.93%	1.37%	9.41	2.2422	0.0061	-5.0180	9,720
9 PT Bank Bumi Arta	1,930,256	14.48	99.59%	53.99%	6.50	34.30%	0.02%	15.09%	43.35	3.7692	0.0681	-2.6861	22,860
10 PT Bank Central Asia Tbk	317,180,373	19.20	57.86%	49.61%	41.20	19.22%	0.81%	3.34%	15.73	2.7573	0.0043	-5.4424	29,846
11 PT Bank Chipo International	643,397	13.44	100.00%	83.84%	17.30	23.06%	3.32%	1.31%	11.54	2.4466	0.0069	-4.9266	6,343,523
12 PT Bank Ekonomi Raharja Tbk	15,641,813	16.57	78.01%	52.05%	44.76	13.17%	2.45%	1.87%	6.57	1.8822	0.0037	-5.9127	278,170
13 PT Bank Fama Internasional	339,684	12.74	100.00%	90.81%	3.83	33.82%	5.56%	2.16%	15.38	2.7332	0.0044	-5.4195	7,137
14 PT Bank Ganesha	1,569,533	14.27	93.96%	69.52%	4.32	29.81%	1.60%	0.11%	9.21	2.2208	0.0026	-5.9678	2,540
15 PT Bank Hana	300,521	12.61	92.51%	105.92%	0.92	105.51%	1.21%	2.17%	47.15	3.8553	0.0137	-3.9811	5,257
16 PT Bank Himpunan Saudara Tbk	3,053,715	13.83	86.04%	45.32%	9.43	13.58%	0.67%	0.63%	5.82	1.7618	0.0049	-5.3243	-7,276
17 PT Bank Ina Perdana	1,461,045	14.20	99.12%	93.87%	7.15	14.99%	1.16%	3.73%	8.20	2.1037	0.0088	-4.7241	45,159
18 PT Bank Index Selindo	1,094,681	13.91	99.21%	72.49%	3.99	27.36%	0.67%	1.94%	12.89	2.5565	0.0032	-5.7233	15,127
19 PT Bank Jasa Jakarta	2,734,028	14.82	88.45%	85.23%	11.60	12.76%	0.33%	2.81%	6.47	1.8667	0.0032	-5.7348	20,050
20 PT Bank Kesawan Tbk	2,184,493	14.60	91.86%	68.46%	8.85	16.23%	1.27%	2.06%	10.92	2.3906	0.0045	-5.4028	79,031
21 PT Bank Kesejahteraan Ekonomi	1,621,350	13.84	100.00%	94.12%	3.51	20.69%	0.91%	2.36%	10.84	2.3830	0.0106	-7.4279	7,212
22 PT Bank Mayapada Internasional	1,973,566	14.50	99.73%	67.46%	10.15	14.33%	3.65%	1.11%	6.78	1.9127	0.0145	-4.2343	28,010
23 PT Bank Mayora	408,294	12.92	72.72%	59.04%	6.20	22.26%	3.85%	0.42%	10.52	2.3543	0.0007	-7.3257	21,401
24 PT Bank Mega Tbk	34,907,728	17.37	59.72%	46.74%	18.59	31.84%	1.53%	2.23%	6.20	1.8253	0.0013	-6.6150	1,659
25 PT Bank Muamalat Indonesia	9,459,009	15.96	99.79%	89.36%	3.48	26.09%	4.01%	5.57%	32.24	3.4729	0.0066	-5.0165	744,020
26 PT Bank Nusa Tenggara	649,105	13.38	99.59%	83.32%	4.29	84.59%	7.57%	3.64%	29.66	3.3907	0.0197	-4.5416	248,824
27 PT Bank Nusantara Parahyangan	332,785	12.72	98.91%	64.37%	2.01	49.66%	1.91%	0.17%	23.83	3.0721	0.0150	-4.2028	19,024
28 PT Bank Of India Indonesia	575,765	13.26	100.00%	81.46%	6.67	33.69%	2.77%	2.16%	15.78	2.7535	0.0035	-5.6967	345
29 PT Bank Panin Indonesia	1,349,719	14.12	100.00%	78.86%	7.72	12.91%	15.17%	0.13%	9.27	1.6624	0.0134	-4.3107	10,460
30 PT Bank Permata Tbk	136,205	11.82	100.00%	24.26%	0.72	377.66%	4.47%	1.69%	184.09	5.2135	0.0093	-4.6402	1,717
31 PT Bank Sinar Harapan Bali	548,398	13.21	88.73%	37.12%	2.55	67.80%	3.37%	0.56%	29.97	3.4001	0.0049	-5.3298	1,859
32 PT Bank Sinarmas	308,670	12.64	100.00%	102.00%	1.96	15.00%	1.00%	1.00%	7.44	2.0073	0.0111	-4.5834	2,413
33 PT Bank Victoria Internasional Tbk	9,468,441	15.51	76.68%	62.19%	9.29	19.01%	0.26%	0.33%	4.51	1.5101	0.0042	-5.4645	9,086
34 PT BANK WINDU KENTJANA INTERNATIONAL, Tbk	9,183,742	15.46	61.13%	55.97%	2.49	15.43%	2.39%	1.68%	7.43	2.0154	0.0039	-5.5486	11,784
35 PT Bank Yudha Bhakti	2,007,966	14.51	95.11%	53.72%	6.13	30.68%	1.72%	9.03%	33.44	3.5064	0.0183	-4.0022	57,975
36 PT Centratama Nasional Bank	1,975,998	14.49	62.39%	57.69%	13.95	15.59%	4.93%	1.68%	7.92	2.0844	0.0082	-4.7998	799
37 PT Centris Multi Persada Bank	570,941	13.26	100.00%	82.43%	4.56	21.53%	6.35%	8.63%	9.75	2.2769	0.0091	-4.7041	25,848
38 PT Liman International Bank	196,687	12.19	100.00%	145.89%	3.27	44.87%	1.34%	0.19%	23.52	3.1579	0.0297	-3.5319	3,547
39 PT Pan Indonesia Bank Tbk	51,197,502	17.75	72.31%	82.36%	3.49	21.58%	3.06%	3.19%	10.82	2.3817	0.0081	-5.1857	1,327,884
40 PT Prima Master Bank	593,302	13.29	100.00%	84.49%	5.78	19.98%	2.52%	0.41%	9.87	2.2847	0.0021	-6.1717	4,329
Mean	9,034,490	14.11	91.21%	76.30%	8.53	38.22%	2.96%	1.99%	16.73	2.4312	0.0063	-5.3091	235,369
Median	1,938,633	12.83	97.68%	75.16%	6.49	28.84%	2.37%	1.69%	9.83	2.2836	0.0047	-5.3657	11,122
Standard Deviation	36244606.79	1.57	12.65%	21.67%	9.76	57.77%	2.73%	2.58%	25.45	0.7003	0.0113	1.0320	994921.1764
Min	136,205	11.82	57.68%	24.26%	0.72	10.01%	0.07%	0.16%	4.51	1.5101	0.0004	-7.7043	-7,276
Max	317,180,373	19.20	100.00%	145.89%	44.76	377.66%	15.17%	15.09%	184.09	5.2135	0.0681	-2.6861	6,343,523

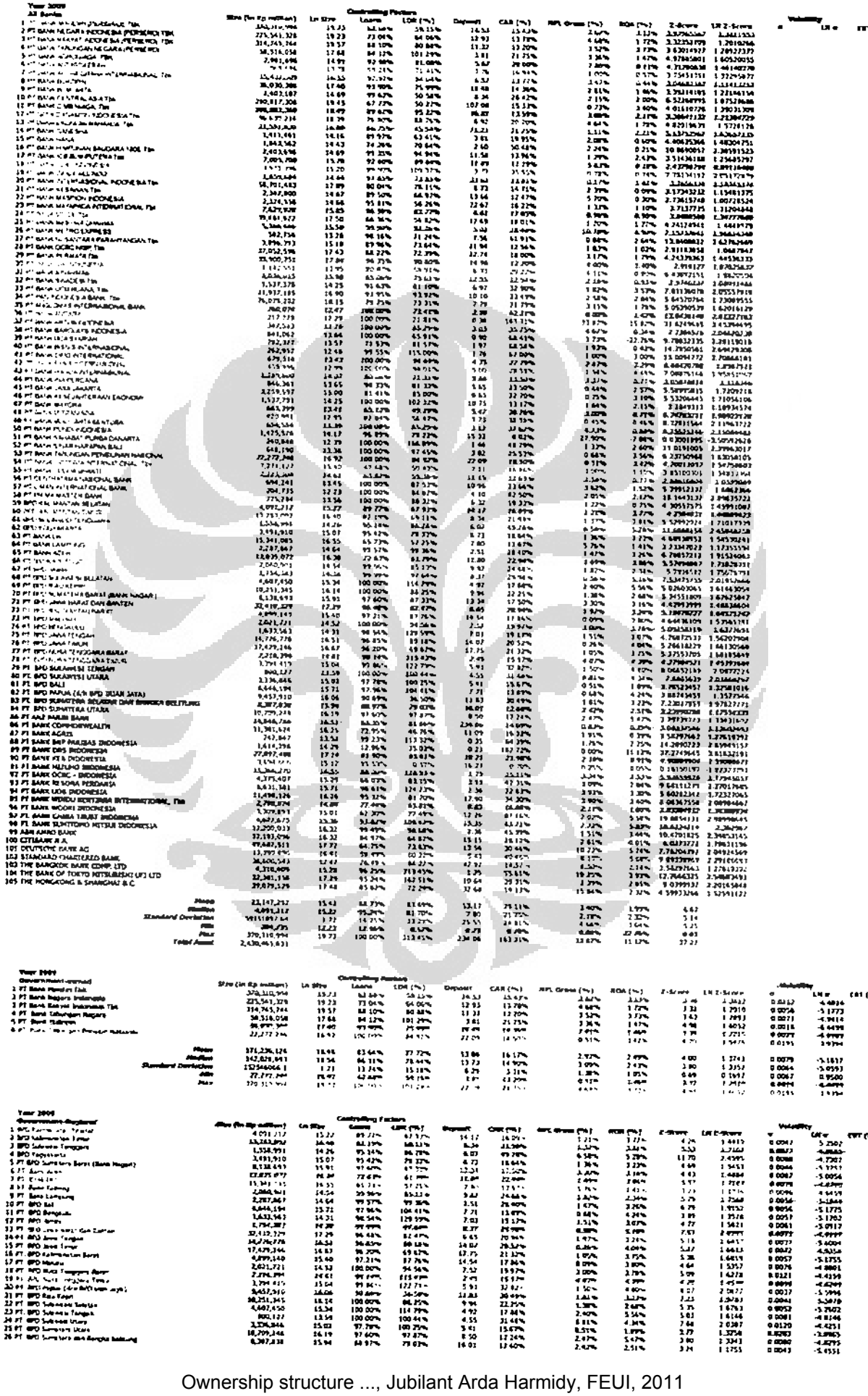


Ownership structure ..., Jubilant Arda Harmidy, FEUI, 2011

20 PT. BPD Papua (65% BPD Irian Jaya)	4,554,912.00	15.96	100.00%	28.43%	13.71	29.26%	1.55%	3.32%	16.18	2.7839	0.0020	-6.2185	282,678.00
21 PT. BPD Riau Kepri	13,131,935.00	16.39	99.86%	43.24%	12.03	24.30%	3.12%	2.92%	13.52	2.6042	0.0056	-5.1781	335,999.00
22 PT. BPD Sulawesi Selatan	4,459,105.00	15.31	100.00%	114.80%	2.25	35.85%	10.11%	7.11%	13.41	2.5963	0.0103	-4.5157	316,965.00
23 PT. BPD Sulawesi Tengah	1,000,426.00	13.82	100.00%	85.89%	1.77	27.42%	9.85%	3.57%	15.46	2.7342	0.0064	-5.0438	32,331.00
24 PT. BPD Sulawesi Utara	2,976,364.00	14.91	98.27%	88.76%	1.72	35.37%	1.60%	3.07%	9.13	2.2121	0.0237	-3.7441	71,319.00
25 PT. BPD Sumatera Utara	8,626,699.00	15.97	96.75%	84.17%	13.20	16.46%	0.99%	4.11%	10.23	2.3251	0.0097	-4.6343	375,617.00
26 PT. BPD Sumatera dan Bangka Belitung	4,141,748.00	15.91	83.75%	93.39%	4.81	14.05%	2.05%	1.96%	7.96	2.0741	0.0053	-5.2483	152,906.00
Mean	7,068,015	15.38	93.06%	78.24%	7.74	31.47%	2.56%	3.69%	12.50	2.4939	0.0061	-5.4216	245,493.65
Median	4,232,827	15.26	97.41%	85.01%	5.76	29.43%	1.69%	3.36%	12.06	2.4874	0.0036	-5.2132	144,656.00
Standard Deviation	8,297,294	0.93	11.82%	27.33%	5.46	6.51%	2.81%	1.17%	3.43	0.2602	0.0039	0.5820	270,592.2981
Min	1,000,426	13.82	38.23%	28.43%	1.25	13.96%	0.82%	1.96%	7.49	2.0538	0.0001	-6.8638	32,331.00
Max	26,113,653	17.08	100.00%	126.44%	19.85	40.26%	10.11%	7.11%	22.56	3.1162	0.0137	-4.2921	831,394.00

Year 2008 Foreign-owned	Size (in Rp million)	Ln Size	Loans	LDR (%)	Deposit	CAR (%)	NPL Gross (%)	ROA (%)	Z-Score	LN Z-Score	Volatility σ	Volatility LN σ	EBT (in Rp million)
1 ABN AMRO BANK	18,220,356.00	16.60	76.55%	72.79%	27.68	16.60%	1.22%	2.52%	9.01	2.1978	0.0093	-4.6757	247,632.00
2 PT Bank Andara	232,154.00	12.36	100.00%	55.90%	0.79	77.29%	3.41%	-2.42%	34.70	3.5447	0.0594	-2.8226	-20,632.00
3 CITIBANK N.A.	52,329,338.00	17.77	62.46%	79.47%	32.21	24.12%	9.29%	3.65%	14.78	2.6934	0.0058	-5.1503	2,633,362.00
4 DEUTSCHE BANK AG	17,595,581.00	16.68	58.98%	64.89%	3.43	32.75%	6.82%	5.96%	21.73	3.0787	0.0146	-4.2125	1,113,718.00
5 PT ANZ PANIN BANK	10,185,975.00	16.14	78.36%	87.56%	35.57	19.25%	2.46%	4.61%	18.26	2.9041	0.0216	-3.8366	375,518.00
6 PT Bank Barclays Indonesia	838,266.00	13.64	100.00%	91.38%	7.28	17.27%	1.28%	1.49%	9.26	2.2277	0.1212	-2.1103	13,174.00
7 PT BANK BNP PARIBAS INDONESIA	2,741,425.00	14.82	57.14%	320.55%	0.63	68.80%	10.46%	7.80%	28.15	3.3363	0.0319	-3.4437	201,335.00
8 PT BANK CHINA TRUST INDONESIA	4,833,193.00	15.39	88.13%	116.07%	8.46	33.26%	4.82%	5.97%	19.79	2.9824	0.0105	-4.5574	269,372.00
9 PT BANK CIMB Niaga	102,804,732.00	18.45	84.71%	87.93%	13.02	15.59%	2.50%	1.19%	8.29	2.1151	0.0062	-5.0068	1,015,319.00
10 PT BANK COMMONWEALTH	31,833,771.00	16.27	78.01%	67.09%	8.20	14.52%	1.36%	0.91%	7.42	2.0036	0.0050	-5.2974	35,349.00
11 PT Bank Danamon Indonesia Tbk	104,821,924.00	18.47	76.47%	86.42%	5.80	13.37%	2.34%	1.58%	7.43	2.0050	0.0045	-5.2952	1,944,812.00
12 PT BANK DBS INDONESIA	24,236,220.00	17.00	77.93%	77.79%	8.56	20.29%	2.31%	1.56%	10.81	2.3844	0.0045	-5.4061	359,299.00
13 PT Bank ICB Bumiputera Tbk	6,287,678.00	15.65	92.10%	90.46%	6.72	15.75%	5.66%	0.09%	5.99	1.7743	0.0021	-6.1277	5,870.00
14 PT Bank ICBC Indonesia	3,524,903.00	14.24	65.92%	47.51%	2.20	107.93%	1.38%	1.97%	34.59	3.5998	0.0112	-4.4935	22,316.00
15 PT Bank International Indonesia	53,779,786.00	17.80	78.83%	79.45%	6.49	19.58%	2.66%	1.25%	10.25	2.3266	0.0060	-5.1128	427,250.00
16 PT BANK KEB INDONESIA	3,705,213.00	15.13	95.40%	75.07%	5.70	48.11%	0.23%	6.36%	27.05	3.2975	0.0391	-3.2428	193,392.00
17 PT BANK MIZUHO INDONESIA	14,701,176.00	18.63	88.23%	108.64%	0.92	19.65%	1.52%	2.72%	11.11	2.4080	0.0045	-5.4080	393,333.00
18 PT Bank Mutiara Tbk	3,696,809.00	15.12	87.94%	84.12%	20.23	14.06%	1.26%	1.17%	7.55	2.0222	0.0018	-6.3293	40,702.00
19 PT BANK OCBC - INDONESIA	5,043,150.00	15.43	79.83%	109.53%	2.07	32.56%	7.00%	1.47%	16.89	2.8266	0.0074	-4.9050	81,162.00
20 PT Bank OCBC NISP Tbk	34,245,838.00	17.35	90.97%	114.40%	31.58	17.01%	2.72%	1.55%	9.21	2.2207	0.0020	-6.2347	454,228.00
21 PT Bank Permata	53,959,827.00	17.80	81.62%	81.80%	14.67	19.80%	3.50%	1.79%	8.21	2.1260	0.0031	-5.7234	729,671.00
22 PT BANK RESONA PERDANIA	7,313,804.00	15.81	95.59%	141.31%	1.70	19.56%	1.66%	1.39%	11.26	2.4226	0.0029	-5.8547	202,973.00
23 PT BANK SUMITOMO MITSUI INDONESIA	11,644,559.00	16.25	91.55%	109.06%	2.57	25.10%	0.83%	3.67%	19.26	2.9579	0.0107	-4.5390	317,388.00
24 PT BANK UOB INDONESIA	12,235,369.00	16.32	84.78%	94.80%	5.67	25.40%	1.80%	3.65%	14.31	2.6606	0.0061	-5.0934	326,384.00
25 PT BANK WOORI INDONESIA	3,378,425.00	15.03	64.56%	69.62%	3.93	41.40%	0.56%	5.66%	23.38	3.1517	0.0067	-4.9995	178,857.00
26 PT UOB Buana Tbk	21,241,064.00	16.87	93.75%	91.45%	7.22	24.86%	2.51%	2.38%	13.53	2.6049	0.0051	-5.2731	466,960.00
27 STANDARD CHARTERED BANK	42,797,530.00	17.57	84.68%	58.93%	6.11	43.32%	8.01%	3.52%	7.63	2.0628	0.0122	-4.4086	959,634.00
28 THE BANGKOK BANK COMP. LTD	4,781,948.00	15.38	97.49%	134.57%	1.54	47.84%	0.89%	1.05%	24.78	3.2101	0.0110	-4.5044	82,729.00
29 THE BANK OF TOKYO MITSUBISHI UFJ LTD	29,990,078.00	17.22	92.26%	178.64%	6.61	36.10%	0.25%	3.16%	19.50	2.9705	0.0067	-4.9949	773,000.00
30 THE HONGKONG & SHANGHAI B.C.	46,471,123.00	17.65	67.68%	67.29%	31.50	12.00%	10.49%	3.19%	7.54	2.0203	0.0067	-5.0008	1,474,462.00
31 PT Bank Sinarmas Tbk	1,359,868.00	14.12	96.87%	83.11%	6.06	33.37%	2.56%	2.59%	17.78	2.8782	0.0112	-4.4917	30,197.00
32 PT Bank Mayapada International Tbk	5,512,694.00	15.52	96.15%	100.17%	4.27	22.81%	2.87%	3.27%	11.96	2.4816	0.0029	-5.8438	60,351.00
Mean	23,458,459.64	16.14	82.93%	99.72%	8.87	29.82%	3.30%	2.54%	15.66	2.5951	0.0142	-4.8346	462,720.53
Median	11,536,165.00	16.26	88.03%	86.49%	6.28	21.55%	2.65%	2.22%	11.62	2.4521	0.0067	-5.0040	293,379.00
Standard Deviation	27290427.35	1.44	13.79%	53.61%	9.14	36.10%	2.84%	2.45%	10.20	0.5659	0.0229	0.9620	598,139.82
Min	232,154.00	12.36	58.92%	47.09%	0.63	10.80%	0.23%	-7.42%	5.99	1.7743	0.0018	-6.3293	-20,632.00
Max	104,821,924.00	18.47	100.00%	334.57%	31.57	107.93%	10.49%	7.80%	34.59	3.5998	0.1212	-2.1103	2,633,362.00

Year 2008 Domestic	Size (in Rp million)	Ln Size	Loans	LDR (%)	Deposit	CAR (%)	NPL Gross (%)	ROA (%)	Z-Score	LN Z-Score	Volatility σ	Volatility LN σ	EBT (in Rp million)
1 PT Anglomas International Bank	218,152.00	12.29	100.00%	82.30%	1.83	68.65%	8.54%	1.17%	34.68	3.5462	0.0560	-2.9218	2,749.00
2 PT BANK AGRIS	701,891.00	13.46	97.40%	178.32%	0.27	66.77%	8.83%	1.20%	33.76	3.5183	0.0136	-4.2961	12,523.00
3 PT Bank Agroniaga Tbk	2,561,781.00	14.76	94.05%	94.80%	5.75	57.51%	6.15%	0.10%	6.76	1.7602	0.0028	-5.8712	2,845.00
4 PT Bank Antar Daerah	269,956.00	12.51	99.66%	77.77%	5.36	17.73%	1.35%	0.60%	9.10	2.2088	0.0014	-6.5912	4,759.00
5 PT Bank Artha Graha International Tbk	838,266.00	13.37	93.81%	83.47%	4.93	14.90%	3.49%	0.34%	7.57	2.0262	0.0007	-7.3230	40,156.00
6 PT Bank Artos Indonesia	269,956.00	12.51	100.00%	87.53%	2.20	40.62%	7.57%	0.60%	20.37	3.0143	0.0007	-7.1977	1,005.60
7 PT Bank BCA Syariah	704,131.00	13.46	100.00%	43.61%	12.48	10.69%	1.07%	0.25%	9.80	2.2828	0.0851	-5.2816	4,714.80
8 PT Bank Bisnis Internasional	218,833.00	12.29	99.40%	114.00%	3.51	24.00%	2.00%	1.90%	38.25	3.6441	0.0065	-2.7406	5,697.00
9 PT Bank Bumi Arta	2,044,367.00	14.53	98.86%	99.86%	6.70	31.65%	1.93%	2.07%	16.50	2.8034	0.0029	-5.1571	41,373.00
10 PT Bank Central Asia Tbk	244,729,251.00	19.32	88.33%	93.78%	35.01	15.76%	0.60%	3.42%	9.54	2.2552	0.0021	-6.1845	7,635,350.00
11 PT Bank Dipo Internasional	450,003.00	13.38	100.00%	76.68%	5.01	30.36%	3.52%	2.50%	16.33	2.7931	0.0036	-5.5796	17,459.00
12 PT Bank ekspansi Keberga Tbk	19,211,464.00	16.72	84.65%	61.42%	48.61	34.01%	1.07%	2.26%	8.09	2.0908	0.0030	-5.8044	382,027.00
13 PT Bank Fama Internasional	334,786.00	12.72	100.00%	96.26%	3.97	30.92%	0.97%	2.33%	16.52	2.8043	0.0136	-4.2994	8,123.60
14 PT Bank Ganesha	1,487,758.00	14.21	95.57%	78.60%	4.01	21.10%	1.79%	0.57%	10.57	2.3580	0.0031	-5.7736	2,131.00
15 PT Bank Hana	1,004,442.00	13.82	88.56%	100.38%	1.74	40.55%	0.77%	-1.13%	19.33	2.9618	0.0167	-4.0940	-10,094.00
16 PT Bank Harda Internasional	1,037,858.00	13.85	84.79%	88.52%	4.95	16.56%	3.53%	0.23%	8.38	2.1258	0.0061	-5.1078	2,688.00
17 PT Bank Himpunan Saudara Tbk	1,977,350.00	14.50	98.88%	102.19%	3.66	12.75%	1.17%	3.00%	7.82	2.0571	0.0068	-4.9837	55,774.00
18 PT Bank Ina Perdana	661,918.00	13.40	97.92%	87.64%	4.32	28.26%	1.06%	2.08%	14.09	2.6452	0.0047	-5.3538	13,994.00
19 PT Bank Index Selindo	1,220,579.00	14.02	85.19%	82.99%	23.51	16.21%	0.92%	1.51%	6.80	2.1749	0.0033	-5.7148	16,829.00
20 PT Bank Jasa Jakarta	2,644,450.00	14.66	82.81%	83.55%	7.85	23.60%	3.26%	2.58%	13.00	2.5652	0.0025	-5.9825	72,023.00
21 PT Bank Kesawan Tbk	2,182,228.00	14.59	91.71%	74.66%	15.25	18.34%	4.08%	0.37%	5.25	1.6583	0.0006	-7.4279	4,774.00
22 PT Bank Kesejahteraan Ekonomi	1,359,321.00	14.12	100.00%	180.35%	7.21	14.34%	1.49%	2.81%	8.52	2.1422	0.0107	-4.5360	33,538.00
23 PT Bank Nusapan Indonesia	1,981,048.00	14.50	97.16%	78.92%	18.19	13.29%	1.00%	1.81%	7.16	1.9716	0.0007	-7.3397	20,172.00
24 PT Bank Mayora	439,263.00	12.99	77.20%	67.77%	3.54	37.28%	3.85%	0.52%	18.76	2.9326	0.0015	-6.2731	2,065.00
25 PT Bank Mega Tbk	34,860,872.00	17.37	70.14%	64.67%	13.20	16.09%	1.16%	1.98%	8.88	2.1845	0.0062	-5.0643	674,841.00
26 PT Bank Muchtar Dharma	4,999,963.00	15.42	99.84%	97.82%	4.62	26.49%	2.17%	5.16%	25.23	3.2550	0.0075	-4.8958	247,853.00
27 PT Bank Metro Express	454,371.00	13.03	99.49%	83.28%	5.29	65.63%	2.42%	2.72%	33.95	3.5249	0.0168	-4.0850	12,189.00
28 PT Bank Mitraniaga	292,379.00	12.59	91.22%	82.57%	2.32	34.40%	0.42%	0.22%	19.18	2.9540	0.0016	-6.4206	609.00
29 PT Bank Multi Arta Sentosa	565,693.00	13.21	100.00%	99.14%	6.14	31.51%	4.09%	1.44%	16.39	2.7964	0.0033	-5.2429	7,855.00
30 PT Bank Pundi Indonesia	3,492,168.00	14.27	100.00%	71.04%	9.84	9.34%	19.49%	-2.00%	3.69	1.2934	0.0358	-3.3310	-28,019.00
31 PT Bank Sahabat Purba Danarta	143,331.00	11.89	100.00%	220.97%	0.72	63.43%	1.69%	3.37%	33.58	3.5019	0.0046	-4.3907	4,864.01
32 PT Bank SBI Indonesia	778,184.00	13.56	75.86%	61.68%	3.95	40.69%	2.35%	1.69%	20.91	3.0401	0.0049	-5.3263	7,948.00
33 PT Bank Swadesi Tbk	398,329.00	12.90	100.00%	305.00%	1.59	42.00%	1.00%	4.00%	22.93	3.1289	0.0113	-4.4840	13,100.00
34 PT Bank Swamitra	6,064,428.00	15.62	84.95%	83.31%	2.71	12.46%	3.99%	0.34%	5.84	1.7683	0.0036	-5.6308	19,641.00
35 PT Bank Victoria Internasional Tbk	5,580,480.00	15.53	92.59%	52.46%	4.11	23.77%	2.56%	0.88%	11.75	2.4636	0.0042	-5.4644	43,781.00
36 PT BANK WINDU KENTJANA INTERNATIONAL Tbk	2,094,665.00	14.55	87.85%	86.14%	5.24	18.02%	0.78%	0.27%	9.07	2.2051	0.0176	-4.0405	4,822.00
37 PT Bank Yudha Bakti	3,994,475.00	14.81	78.46%	87.54%	32.94	33.34%	2.03%	0.93%	8.03	2.0828	0.0028	-5.8845	38,253.00
38 PT Centratama Nasional Bank	557,064.00	13.23	100.00%	88.36%	4.85	25.28%	2.75%	1.52%	13.32	2.5868	0.0046	-5.3809	8,372.00
39 PT Liman International Bank	195,467.00	12.18	100.00%	128.25%	3.57	58.84%	7.67%	2.47%	30.45	3.4162	0.0390	-3.4421	6,396.00
40 PT Pan Indonesia Bank Tbk	82,772,547.00	17.96	73.93%	78.93%	5.21	29.21%	4.24%	1.75%	10.96	2.3948	0.0073	-4.9540	994,754.00
41 PT Prima Master Bank	642,315.00	13.43	100.00%	63.54%	5.85	31.21%	1.99%	0.59%	10.83	2.3822	0.0009	-6.9628	3,565.00
Mean	10,045,316.71	14.18	91.42%	88.99%	6.06	28.20%	2.78%	1.45%	15.22	2.6786	0.0065	-5.3622	253,864.29
Median	1,004,442.00	13.83	97.40%	83.31%	5.24	27.77%	1.99%	1.40%	13.75	2.5652	0.0046	-5.3809	8,372.00
Standard Deviation	29175966.85	1.6023332	11.76%	38.28%	9.35131667	18.09%	2.79%	1.41%	9.20439238	0.6610	0.0119	1.1108	2197245.279
Min	143,331.00	11.89	57.59%	47.09%	0.27	9.34%	0.52%	-2.00%	3.65	1.2934	0.0006	-7.4279	-28,019.00
Max	244,729,251.00	19.32	100.00%	220.97%	48.61	74.00%	19.49%	5.16%	38.25	3.6662	0.0645	-2.7406	7,635,350.00



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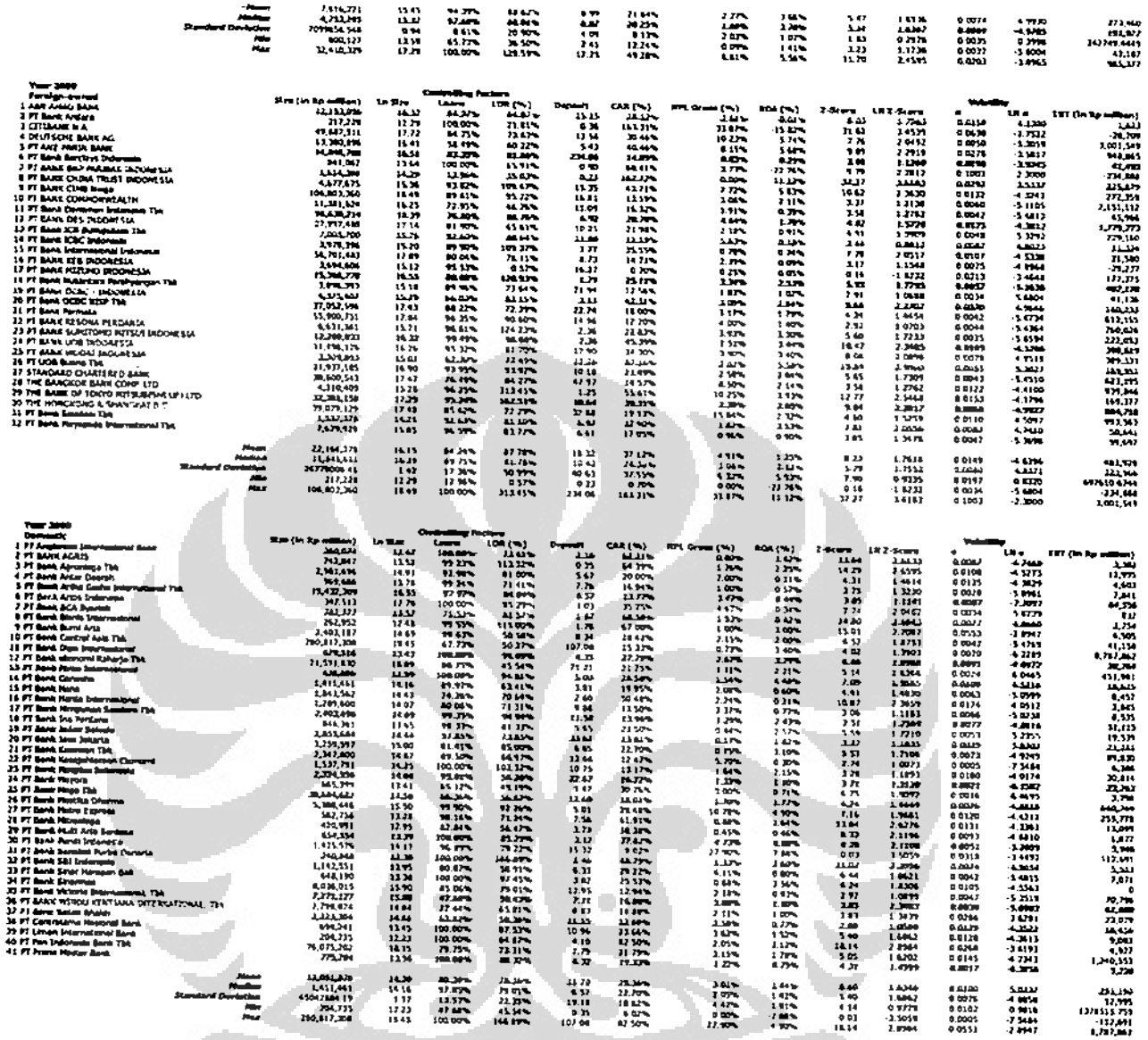

Ownership structure ..., Jubilant Arda Harmidy, FEUI, 2011

APPENDIX 2 : STATISTICAL RESULTS

A. ANALISIS DESKRIPTIF

1. PER TAHUN

		TAHUN					
		Tahun 2004	Tahun 2005	Tahun 2006	Tahun 2007	Tahun 2008	Tahun 2009
Size (in Rp Trilyun)	Count	105	105	105	105	105	105
	Mean	11.19	13.77	15.14	18.07	20.86	23.15
	Standard Deviation	32.25	34.51	37.85	45.54	51.87	59.15
Loans (%)	Count	105	105	105	105	105	105
	Mean	84.70	86.49	87.85	88.77	88.69	88.73
	Standard Deviation	17.82	16.62	15.26	13.38	12.83	14.25
LDR (%)	Count	105	105	105	105	105	105
	Mean	73.08	76.05	72.90	78.14	89.11	83.69
	Standard Deviation	34.20	32.54	32.78	33.18	38.41	33.29
Deposit	Count	105	105	105	105	105	105
	Mean	9.38	10.04	8.12	8.46	8.48	13.17
	Standard Deviation	10.47	9.96	7.29	7.57	8.44	25.55
CAR (%)	Count	105	105	105	105	105	105
	Mean	24.89	23.89	26.71	29.77	26.45	29.11
	Standard Deviation	22.17	22.26	18.99	38.51	16.76	24.81
NPL Gross (%)	Count	105	105	105	105	105	105
	Mean	3.37	4.13	3.75	3.06	2.93	3.40
	Standard Deviation	3.39	3.91	3.23	2.71	2.76	4.66
ROA (%)	Count	105	105	105	105	105	105
	Mean	3.24	2.60	2.59	2.46	2.40	1.99
	Standard Deviation	1.76	1.83	2.04	2.28	2.01	3.64
LN(Z)	Count	105	105	105	105	105	105
	Mean	2.61	2.52	2.52	2.42	2.58	1.66
	Standard Deviation	.51	.48	.49	.56	.64	.81
LN(S)	Count	105	105	105	105	105	105
	Mean	-4.92	-5.01	-5.00	-5.24	-5.23	-4.91
	Standard Deviation	.88	.83	.81	.86	1.04	.83

2. PER KATEGORI BANK

		Jenis Bank			
		Bank Pemerintah	BPD	Bank Asing	Bank Swasta
Size (in Rp Trilyun)	Count	37	156	174	263
	Mean	121.17	6.00	18.18	8.16
	Standard Deviation	111.84	5.77	22.23	32.04
Loans (%)	Count	37	156	174	263
	Mean	76.46	92.76	81.56	89.96
	Standard Deviation	17.66	10.94	16.63	13.82
LDR (%)	Count	37	156	174	263
	Mean	73.05	65.52	96.22	76.03
	Standard Deviation	15.84	26.39	48.31	23.44
Deposit	Count	37	156	174	263
	Mean	10.60	9.34	9.33	9.81
	Standard Deviation	7.75	6.35	19.57	11.66
CAR (%)	Count	37	156	174	263
	Mean	17.58	21.88	30.64	28.49
	Standard Deviation	4.30	7.62	23.46	32.42
NPL Gross (%)	Count	37	156	174	263
	Mean	5.10	2.43	4.39	3.18
	Standard Deviation	4.95	2.30	4.31	3.05
ROA (%)	Count	37	156	174	263
	Mean	2.85	3.56	2.67	1.83
	Standard Deviation	1.75	1.32	3.30	1.92
LN(Z)	Count	37	156	174	263
	Mean	2.17	2.37	2.48	2.37
	Standard Deviation	.43	.43	.71	.79
LN(S)	Count	37	156	174	263
	Mean	-5.15	-5.14	-4.77	-5.17
	Standard Deviation	.93	.63	.80	1.01

B. UJI PERBANDINGAN BIVARIATE

1. PERBANDINGAN ANTARA BANK PEMERINTAH DAN BPD

Group Statistics

	Jenis Bank	N	Mean	Std. Deviation	Std. Error Mean
Size (in Rp Triyun)	Bank Pemerintah	37	121.1711	111.84139	18.38661
	BPD	156	6.0037	5.76691	.46172
Loans (%)	Bank Pemerintah	37	76.4552	17.66255	2.90371
	BPD	156	92.7586	10.93546	.87554
LDR (%)	Bank Pemerintah	37	73.0484	15.83768	2.60370
	BPD	156	65.5201	26.39032	2.11292
Deposit	Bank Pemerintah	37	10.5997	7.74682	1.27357
	BPD	156	9.3445	6.35305	.50865
CAR (%)	Bank Pemerintah	37	17.5800	4.30119	.70711
	BPD	156	21.8771	7.61963	.61006
NPL Gross (%)	Bank Pemerintah	37	5.0959	4.94621	.81315
	BPD	156	2.4256	2.30050	.18419
ROA (%)	Bank Pemerintah	37	2.8468	1.75379	.28832
	BPD	156	3.5566	1.32157	.10581
LN(Z)	Bank Pemerintah	37	2.1709	.43300	.07118
	BPD	156	2.3696	.42760	.03424
LN(S)	Bank Pemerintah	37	-5.1463	.92768	.15251
	BPD	156	-5.1413	.62535	.05007

Independent Samples Test

	t-test for Equality of Means						
						95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Size (in Rp Triyun)	12.897	191	.000	115.16747	8.92944	97.55448	132.78045
Loans (%)	-7.142	191	.000	-16.30345	2.28277	-20.80612	-11.80078
LDR (%)	1.664	191	.098	7.52825	4.52537	-1.39786	16.45436
Deposit	1.034	191	.302	1.25526	1.21385	-1.13900	3.64953
CAR (%)	-3.303	191	.001	-4.29705	1.30077	-6.86278	-1.73132
NPL Gross (%)	4.893	191	.000	2.67037	.54570	1.59399	3.74675
ROA (%)	-2.747	191	.007	-.70985	.25841	-1.21956	-.20014
LN(Z)	-2.536	191	.012	-.19874	.07838	-.35334	-.04415
LN(S)	-.039	191	.969	-.00500	.12663	-.25477	.24477

2. PERBANDINGAN ANTARA BANK PEMERINTAH DAN BANK ASING

Group Statistics

	Jenis Bank	N	Mean	Std. Deviation	Std. Error Mean
Size (in Rp Triyun)	Bank Pemerintah	37	121.1711	111.84139	18.38661
	Bank Asing	174	18.1821	22.22966	1.68523
Loans (%)	Bank Pemerintah	37	76.4552	17.66255	2.90371
	Bank Asing	174	81.5570	16.63465	1.26107
LDR (%)	Bank Pemerintah	37	73.0484	15.83768	2.60370
	Bank Asing	174	96.2240	48.30805	3.66222
Deposit	Bank Pemerintah	37	10.5997	7.74682	1.27357
	Bank Asing	174	9.3322	19.56712	1.48338
CAR (%)	Bank Pemerintah	37	17.5800	4.30119	.70711
	Bank Asing	174	30.6359	23.46201	1.77865
NPL Gross (%)	Bank Pemerintah	37	5.0959	4.94621	.81315
	Bank Asing	174	4.3909	4.30534	.32639
ROA (%)	Bank Pemerintah	37	2.8468	1.75379	.28832
	Bank Asing	174	2.6697	3.29603	.24987
LN(Z)	Bank Pemerintah	37	2.1709	.43300	.07118
	Bank Asing	174	2.4781	.70689	.05359
LN(S)	Bank Pemerintah	37	-5.1463	.92768	.15251
	Bank Asing	174	-4.7661	.80406	.06096

Independent Samples Test

	t-test for Equality of Means						
						95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Size (in Rp Triyun)	11.236	209	.000	102.98908	9.16626	84.91891	121.05925
Loans (%)	-1.676	209	.095	-5.10188	3.04434	-11.10344	.89967
LDR (%)	-2.881	209	.004	-23.17560	8.04523	-39.03581	-7.31540
Deposit	.387	209	.699	1.26755	3.27501	-5.18873	7.72383
CAR (%)	-3.367	209	.001	-13.05586	3.87788	-20.70063	-5.41108
NPL Gross (%)	.881	209	.379	.70508	.80061	-.87321	2.28338
ROA (%)	.317	209	.752	.17708	.55865	-.92423	1.27838
LN(Z)	-2.542	209	.012	-.30726	.12089	-.54558	-.06894
LN(S)	-2.540	209	.012	-.38017	.14966	-.67521	-.08514

3. PERBANDINGAN ANTARA BANK PEMERINTAH DAN BANK SWASTA

Group Statistics

	Jenis Bank	N	Mean	Std. Deviation	Std. Error Mean
Size (in Rp Trilyun)	Bank Pemerintah	37	121.1711	111.84139	18.38661
	Bank Swasta	263	8.1557	32.04240	1.97582
Loans (%)	Bank Pemerintah	37	76.4552	17.66255	2.90371
	Bank Swasta	263	89.9564	13.81925	.85213
LDR (%)	Bank Pemerintah	37	73.0484	15.83768	2.60370
	Bank Swasta	263	76.0313	23.44396	1.44562
Deposit	Bank Pemerintah	37	10.5997	7.74682	1.27357
	Bank Swasta	263	9.8143	11.66195	.71911
CAR (%)	Bank Pemerintah	37	17.5800	4.30119	.70711
	Bank Swasta	263	28.4872	32.41571	1.99884
NPL Gross (%)	Bank Pemerintah	37	5.0959	4.94621	.81315
	Bank Swasta	263	3.1775	3.05320	.18827
ROA (%)	Bank Pemerintah	37	2.8468	1.75379	.28832
	Bank Swasta	263	1.8281	1.92339	.11860
LN(Z)	Bank Pemerintah	37	2.1709	.43300	.07118
	Bank Swasta	263	2.3656	.78843	.04862
LN(S)	Bank Pemerintah	37	-5.1463	.92768	.15251
	Bank Swasta	263	-5.1685	1.01227	.06242

Independent Samples Test

	t-test for Equality of Means						
						95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Size (in Rp Trilyun)	13.101	298	.000	113.01542	8.62642	96.03901	129.99183
Loans (%)	-5.363	298	.000	-13.50126	2.51757	-18.45572	-8.54679
LDR (%)	-.750	298	.454	-2.98291	3.97889	-10.81321	4.84738
Deposit	.397	298	.692	.78538	1.97733	-3.10591	4.67667
CAR (%)	-2.041	298	.042	-10.90722	5.34324	-21.42249	-.39196
NPL Gross (%)	3.272	298	.001	1.91849	.58634	.76461	3.07238
ROA (%)	3.048	298	.003	1.01866	.33426	.36085	1.67646
LN(Z)	-1.470	298	.143	-.19472	.13247	-.45541	.06597
LN(S)	.127	298	.899	.02229	.17601	-.32408	.36867

4. PERBANDINGAN ANTARA BPD DAN BANK ASING

Group Statistics

	Jenis Bank	N	Mean	Std. Deviation	Std. Error Mean
Size (in Rp Trilyun)	BPD	156	6.0037	5.76691	.46172
	Bank Asing	174	18.1821	22.22966	1.68523
Loans (%)	BPD	156	92.7586	10.93546	.87554
	Bank Asing	174	81.5570	16.63465	1.26107
LDR (%)	BPD	156	65.5201	26.39032	2.11292
	Bank Asing	174	96.2240	48.30805	3.66222
Deposit	BPD	156	9.3445	6.35305	.50865
	Bank Asing	174	9.3322	19.56712	1.48338
CAR (%)	BPD	156	21.8771	7.61963	.61006
	Bank Asing	174	30.6359	23.46201	1.77865
NPL Gross (%)	BPD	156	2.4256	2.30050	.18419
	Bank Asing	174	4.3909	4.30534	.32639
ROA (%)	BPD	156	3.5566	1.32157	.10581
	Bank Asing	174	2.6697	3.29603	.24987
LN(Z)	BPD	156	2.3696	.42760	.03424
	Bank Asing	174	2.4781	.70689	.05359
LN(S)	BPD	156	-5.1413	.62535	.05007
	Bank Asing	174	-4.7661	.80406	.06096

Independent Samples Test

	t-test for Equality of Means						
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Size (in Rp Trilyun)	-6.644	328	.000	-12.17839	1.83296	-15.78423	-8.57254
Loans (%)	7.140	328	.000	11.20156	1.56888	8.11523	14.28789
LDR (%)	-7.050	328	.000	-30.70385	4.35492	-39.27095	-22.13676
Deposit	.007	328	.994	.01229	1.63920	-3.21237	3.23695
CAR (%)	-4.456	328	.000	-8.75881	1.96553	-12.62543	-4.89218
NPL Gross (%)	-5.087	328	.000	-1.96529	.38634	-2.72531	-1.20526
ROA (%)	3.142	328	.002	.88692	.28230	.33157	1.44228
LN(Z)	-1.664	328	.097	-.10852	.06523	-.23684	.01980
LN(S)	-4.692	328	.000	-.37517	.07995	-.53246	-.21789

5. PERBANDINGAN ANTARA BPD DAN BANK SWASTA

Group Statistics

	Jenis Bank	N	Mean	Std. Deviation	Std. Error Mean
Size (in Rp Trilyun)	BPD	156	6.0037	5.76691	.46172
	Bank Swasta	263	8.1557	32.04240	1.97582
Loans (%)	BPD	156	92.7586	10.93546	.87554
	Bank Swasta	263	89.9564	13.81925	.85213
LDR (%)	BPD	156	65.5201	26.39032	2.11292
	Bank Swasta	263	76.0313	23.44396	1.44562
Deposit	BPD	156	9.3445	6.35305	.50865
	Bank Swasta	263	9.8143	11.66195	.71911
CAR (%)	BPD	156	21.8771	7.61963	.61006
	Bank Swasta	263	28.4872	32.41571	1.99884
NPL Gross (%)	BPD	156	2.4256	2.30050	.18419
	Bank Swasta	263	3.1775	3.05320	.18827
ROA (%)	BPD	156	3.5566	1.32157	.10581
	Bank Swasta	263	1.8281	1.92339	.11860
LN(Z)	BPD	156	2.3696	.42760	.03424
	Bank Swasta	263	2.3656	.78843	.04862
LN(S)	BPD	156	-5.1413	.62535	.05007
	Bank Swasta	263	-5.1685	1.01227	.06242

Independent Samples Test

	t-test for Equality of Means						
						95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Size (in Rp Trilyun)	-.831	417	.407	-2.15205	2.59117	-7.24544	2.94134
Loans (%)	2.162	417	.031	2.80219	1.29588	.25491	5.34947
LDR (%)	-4.232	417	.000	-10.51116	2.48402	-15.39394	-5.62839
Deposit	-.464	417	.643	-.46988	1.01285	-2.46081	1.52105
CAR (%)	-2.505	417	.013	-6.61017	2.63870	-11.79698	-1.42337
NPL Gross (%)	-2.660	417	.008	-.75188	.28267	-1.30752	-.19623
ROA (%)	9.919	417	.000	1.72850	.17426	1.38596	2.07105
LN(Z)	.059	417	.953	.00403	.06843	-.13049	.13854
LN(S)	.304	417	.761	.02729	.08977	-.14917	.20376

6. PERBANDINGAN ANTARA BANK ASING DAN BANK SWASTA

Group Statistics

	Jenis Bank	N	Mean	Std. Deviation	Std. Error Mean
Size (in Rp Trilyun)	Bank Asing	174	18.1821	22.22966	1.68523
	Bank Swasta	263	8.1557	32.04240	1.97582
Loans (%)	Bank Asing	174	81.5570	16.63465	1.26107
	Bank Swasta	263	89.9564	13.81925	.85213
LDR (%)	Bank Asing	174	96.2240	48.30805	3.66222
	Bank Swasta	263	76.0313	23.44396	1.44562
Deposit	Bank Asing	174	9.3322	19.56712	1.48338
	Bank Swasta	263	9.8143	11.66195	.71911
CAR (%)	Bank Asing	174	30.6359	23.46201	1.77865
	Bank Swasta	263	28.4872	32.41571	1.99884
NPL Gross (%)	Bank Asing	174	4.3909	4.30534	.32639
	Bank Swasta	263	3.1775	3.05320	.18827
ROA (%)	Bank Asing	174	2.6697	3.29603	.24987
	Bank Swasta	263	1.8281	1.92339	.11860
LN(Z)	Bank Asing	174	2.4781	.70689	.05359
	Bank Swasta	263	2.3656	.78843	.04862
LN(S)	Bank Asing	174	-4.7661	.80406	.06096
	Bank Swasta	263	-5.1685	1.01227	.06242

Independent Samples Test

	t-test for Equality of Means						
						95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Size (in Rp Trilyun)	3.594	435	.000	10.02634	2.78962	4.54353	15.50914
Loans (%)	-5.729	435	.000	-8.39937	1.46605	-11.28079	-5.51796
LDR (%)	5.823	435	.000	20.19269	3.46757	13.37742	27.00796
Deposit	-.322	435	.747	-.48217	1.49543	-3.42133	2.45699
CAR (%)	.753	435	.452	2.14863	2.85206	-3.45689	7.75415
NPL Gross (%)	3.446	435	.001	1.21341	.35215	.52127	1.90554
ROA (%)	3.365	435	.001	.84158	.25007	.35008	1.33308
LN(Z)	1.521	435	.129	.11254	.07398	-.03286	.25795
LN(S)	4.405	435	.000	.40247	.09137	.22288	.58205

C. UJI PERBANDINGAN MULTIPLE

1. SIZE

Descriptives

Size (in Rp Trilyun)

	N	Mean	Std. Deviation	Minimum	Maximum
Bank Pemerintah	37	121.1711	111.84139	3.61	370.31
BPD	156	6.0037	5.76691	.28	32.41
Bank Asing	174	18.1821	22.22966	.22	106.80
Bank Swasta	263	8.1557	32.04240	.06	280.82
Total	630	17.0294	44.59922	.06	370.31

ANOVA

Size (in Rp Trilyun)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	441188.4	3	147062.785	113.663	.000
Within Groups	809949.5	626	1293.849		
Total	1251138	629			

Size (in Rp Trilyun)

Duncan[a,b]

		Subset for alpha = .05		
Jenis Bank	N	1	2	3
BPD	156	6.0037		
Bank Swasta	263	8.1557		
Bank Asing	174		18.1821	
Bank Pemerintah	37			121.1711

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 93.052.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

2. LOANS

Descriptives

Loans (%)

	N	Mean	Std. Deviation	Minimum	Maximum
Bank Pemerintah	37	76.4552	17.66255	45.03	100.57
BPD	156	92.7586	10.93546	46.43	100.00
Bank Asing	174	81.5570	16.63465	12.96	100.00
Bank Swasta	263	89.9564	13.81925	40.68	102.20
Total	630	87.5375	15.14272	12.96	102.20

ANOVA

Loans (%)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	16558.942	3	5519.647	27.064	.000
Within Groups	127672.0	626	203.949		
Total	144231.0	629			

Loans (%)

Duncan[a,b]

		Subset for alpha = .05		
Jenis Bank	N	1	2	3
Bank Pemerintah	37	76.4552		
Bank Asing	174		81.5570	
Bank Swasta	263			89.9564
BPD	156			92.7586

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 93.052.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

3. LDR

Descriptives

LDR (%)

	N	Mean	Std. Deviation	Minimum	Maximum
Bank Pemerintah	37	73.0484	15.63768	48.98	101.83
BPD	156	65.5201	26.39032	17.11	129.59
Bank Asing	174	96.2240	48.30805	.57	334.97
Bank Swasta	263	76.0313	23.44396	23.72	220.97
Total	630	78.8304	34.49110	.57	334.97

ANOVA

LDR (%)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	83576.451	3	27858.817	26.237	.000
Within Groups	664704.4	626	1061.828		
Total	748280.9	629			

LDR (%)

Duncan[a,b]

		Subset for alpha = .05		
Jenis Bank	N	1	2	3
BPD	156	65.5201		
Bank Pemerintah	37		73.0484	
Bank Swasta	263		76.0313	
Bank Asing	174			96.2240

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 93.052.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

4. DEPOSIT

Descriptives

Deposit

	N	Mean	Std. Deviation	Minimum	Maximum
Bank Pemerintah	37	10.5997	7.74682	1.90	34.75
BPD	156	9.3445	6.35305	1.25	38.19
Bank Asing	174	9.3322	19.56712	.23	234.07
Bank Swasta	263	9.8143	11.66195	.27	107.08
Total	630	9.6110	13.24571	.23	234.07

ANOVA

Deposit

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	71.655	3	23.885	.136	.939
Within Groups	110285.7	626	176.175		
Total	110357.3	629			

5. CAR

Descriptives

CAR (%)

	N	Mean	Std. Deviation	Minimum	Maximum
Bank Pemerintah	37	17.5800	4.30119	11.20	29.38
BPD	156	21.8771	7.61963	10.18	58.46
Bank Asing	174	30.6359	23.46201	.70	163.31
Bank Swasta	263	28.4872	32.41571	8.02	377.68
Total	630	26.8033	24.91431	.70	377.68

ANOVA

CAR (%)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10234.919	3	3411.640	5.617	.001
Within Groups	380199.6	626	607.348		
Total	390434.5	629			

CAR (%)

Duncan[a,b]

		Subset for alpha = .05		
Jenis Bank	N	1	2	3
Bank Pemerintah	37	17.5800		
BPD	156		21.8771	
Bank Swasta	263			28.4872
Bank Asing	174			30.6359

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 93.052.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

6. NPL GROSS

Descriptives

NPL Gross (%)

	N	Mean	Std. Deviation	Minimum	Maximum
Bank Pemerintah	37	5.0959	4.94621	.22	26.58
BPD	156	2.4256	2.30050	.09	14.44
Bank Asing	174	4.3909	4.30534	.00	33.87
Bank Swasta	263	3.1775	3.05320	.00	27.90
Total	630	3.4391	3.51865	.00	33.87

ANOVA

NPL Gross (%)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	437.441	3	145.814	12.419	.000
Within Groups	7350.128	626	11.741		
Total	7787.569	629			

NPL Gross (%)

Duncan[a,b]

		Subset for alpha = .05	
Jenis Bank	N	1	2
BPD	156	2.4256	
Bank Swasta	263	3.1775	
Bank Asing	174		4.3909
Bank Pemerintah	37		5.0959

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 93.052.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

7. ROA

Descriptives

ROA (%)

	N	Mean	Std. Deviation	Minimum	Maximum
Bank Pemerintah	37	2.8468	1.75379	.47	8.82
BPD	156	3.5566	1.32157	.97	7.12
Bank Asing	174	2.6697	3.29603	-22.76	11.12
Bank Swasta	263	1.8281	1.92339	-7.88	15.00
Total	630	2.5484	2.36932	-22.76	15.00

ANOVA

ROA (%)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	300.876	3	100.292	19.437	.000
Within Groups	3230.138	626	5.160		
Total	3531.014	629			

ROA (%)

Duncan[a,b]

		Subset for alpha = .05		
Jenis Bank	N	1	2	3
Bank Swasta	263	1.8281		
Bank Asing	174		2.6697	
Bank Pemerintah	37		2.8468	
BPD	156			3.5566

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 93.052.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

8. LN(Z)

Descriptives

LN(Z)

	N	Mean	Std. Deviation	Minimum	Maximum
Bank Pemerintah	37	2.1709	.43300	1.20	2.81
BPD	156	2.3696	.42760	1.17	3.36
Bank Asing	174	2.4781	.70689	-1.82	4.00
Bank Swasta	263	2.3656	.78843	-3.51	6.76
Total	630	2.3862	.67636	-3.51	6.76

ANOVA

LN(Z)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.341	3	1.114	2.451	.062
Within Groups	284.404	626	.454		
Total	287.745	629			

9. LN(S)

Descriptives

LN(S)

	N	Mean	Std. Deviation	Minimum	Maximum
Bank Pemerintah	37	-5.1463	.92768	-6.85	-3.40
BPD	156	-5.1413	.62535	-8.86	-3.90
Bank Asing	174	-4.7661	.80406	-6.78	-1.78
Bank Swasta	263	-5.1685	1.01227	-8.08	-2.65
Total	630	-5.0493	.88377	-8.86	-1.78

ANOVA

LN(S)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	19.364	3	6.455	8.562	.000
Within Groups	471.912	626	.754		
Total	491.275	629			

LN(S)

Duncan[a,b]

Jenis Bank	N	Subset for alpha = .05	
		1	2
Bank Swasta	263	-5.1685	
Bank Pemerintah	37	-5.1463	
BPD	156	-5.1413	
Bank Asing	174		-4.7661

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 93.052.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

D. PENGUJIAN ASUMSI

1. ASUMSI STATIONERITAS

- Y1 NPL

Null Hypothesis: Y1_NPL has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic based on SIC, MAXLAG=19)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-14.83207	0.0000
Test critical values:	1% level	-3.440534	
	5% level	-2.865924	
	10% level	-2.569163	

*MacKinnon (1996) one-sided p-values.

- Y2 LN( )

Null Hypothesis: Y2_LN_S has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=19)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-22.12453	0.0000
Test critical values:	1% level	-3.440517	
	5% level	-2.865917	
	10% level	-2.569159	

*MacKinnon (1996) one-sided p-values.

- Y3 LN(Z)

Null Hypothesis: Y3_LN_Z has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic based on SIC, MAXLAG=19)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.890887	0.0000
Test critical values:	1% level	-3.440550	
	5% level	-2.865932	
	10% level	-2.569167	

*MacKinnon (1996) one-sided p-values.

- Y4 ROA

Null Hypothesis: Y4_ROA has a unit root
Exogenous: Constant
Lag Length: 3 (Automatic based on SIC, MAXLAG=19)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-9.462010	0.0000
Test critical values:	1% level	-3.440567	
	5% level	-2.865939	
	10% level	-2.569171	

*MacKinnon (1996) one-sided p-values.

ASUMSI NON MULTIKOLINIERITAS

	X04_GR	X05_LNSIZE	X06_LOAN	X07_LDR	X08_DEP	X09_CAR
X04_GR	1.000000	0.070617	0.050035	0.053350	-0.016841	0.008127
X05_LNSIZE	0.070617	1.000000	-0.503840	-0.088187	0.232804	-0.313378
X06_LOAN	0.050035	-0.503840	1.000000	0.300588	-0.100418	0.037948
X07_LDR	0.053350	-0.088187	0.300588	1.000000	-0.230995	0.006195
X08_DEP	-0.016841	0.232804	-0.100418	-0.230995	1.000000	-0.174090
X09_CAR	0.008127	-0.313378	0.037948	0.006195	-0.174090	1.000000

E. ANALISIS REGRESI

1. MODEL PERTAMA

Dependent Variable: Y1_NPL
Method: Least Squares
Date: 11/24/10 Time: 16:52
Sample: 1 630
Included observations: 630

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	366.0678	173.0985	2.114795	0.0348
X04_GR	0.015565	0.020576	0.756467	0.4497
X05_LNSIZE	0.105668	0.101575	1.040303	0.2986
X06_LOAN	-0.031952	0.011277	-2.833373	0.0048
X07_LDR	0.016714	0.004308	3.879702	0.0001
X08_DEP	-0.017933	0.010992	-1.631511	0.1033
X09_CAR	0.017266	0.005941	2.906467	0.0038
X10_YEAR	-0.181030	0.086581	-2.090876	0.0369

R-squared	0.063388	Mean dependent var	3.439079
Adjusted R-squared	0.052847	S.D. dependent var	3.518646
S.E. of regression	3.424409	Akaike info criterion	5.312352
Sum squared resid	7293.932	Schwarz criterion	5.368806
Log likelihood	-1665.391	F-statistic	6.013647
Durbin-Watson stat	1.938558	Prob(F-statistic)	0.000001

Dependent Variable: Y1_NPL
Method: Least Squares
Date: 11/24/10 Time: 16:46
Sample: 1 630
Included observations: 630

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	292.9923	172.7252	1.696291	0.0903
X01_OS_BP	2.212676	0.741242	2.985091	0.0029
X02_OS_BPD	-0.371748	0.381127	-0.975392	0.3297
X03_OS_AS	1.020297	0.424229	2.405063	0.0165
X04_GR	0.017268	0.020372	0.847645	0.3970
X05_LNSIZE	-0.111070	0.130277	-0.852570	0.3942
X06_LOAN	-0.024232	0.011922	-2.032571	0.0425
X07_LDR	0.010042	0.004799	2.092324	0.0368
X08_DEP	-0.016869	0.011037	-1.528463	0.1269
X09_CAR	0.011768	0.006100	1.929107	0.0542
X10_YEAR	-0.143160	0.086469	-1.655612	0.0983

R-squared	0.088181	Mean dependent var	3.439079
Adjusted R-squared	0.073451	S.D. dependent var	3.518646
S.E. of regression	3.386959	Akaike info criterion	5.295048
Sum squared resid	7100.852	Schwarz criterion	5.372672
Log likelihood	-1656.940	F-statistic	5.986288
Durbin-Watson stat	1.958553	Prob(F-statistic)	0.000000

2. MODEL KEDUA

Dependent Variable: Y2_LN_S
Method: Least Squares
Date: 11/24/10 Time: 16:51
Sample: 1 630
Included observations: 630

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	30.46080	42.35741	0.719137	0.4723
X04_GR	-0.010679	0.005035	-2.121006	0.0343
X05_LNSIZE	-0.051733	0.024855	-2.081351	0.0378
X06_LOAN	-0.008849	0.002759	-3.206816	0.0014
X07_LDR	0.004864	0.001054	4.614105	0.0000
X08_DEP	-0.001907	0.002690	-0.709116	0.4785
X09_CAR	0.007451	0.001454	5.125954	0.0000
X10_YEAR	-0.017135	0.021186	-0.808750	0.4190

R-squared	0.110985	Mean dependent var	-5.049320
Adjusted R-squared	0.100980	S.D. dependent var	0.883766
S.E. of regression	0.837957	Akaike info criterion	2.496918
Sum squared resid	436.7511	Schwarz criterion	2.553371
Log likelihood	-778.5291	F-statistic	11.09298
Durbin-Watson stat	1.811106	Prob(F-statistic)	0.000000

Dependent Variable: Y2_LN_S
Method: Least Squares
Date: 11/24/10 Time: 16:51
Sample: 1 630
Included observations: 630

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.591877	41.86596	0.133566	0.8938
X01_OS_BP	0.550539	0.179666	3.064238	0.0023
X02_OS_BPD	0.294712	0.092379	3.190243	0.0015
X03_OS_AS	0.537006	0.102827	5.222439	0.0000
X04_GR	-0.009931	0.004938	-2.011333	0.0447
X05_LNSIZE	-0.147119	0.031577	-4.659036	0.0000
X06_LOAN	-0.009507	0.002890	-3.290144	0.0011
X07_LDR	0.003365	0.001163	2.892785	0.0040
X08_DEP	-0.000478	0.002675	-0.178654	0.8583
X09_CAR	0.005599	0.001479	3.786776	0.0002
X10_YEAR	-0.004050	0.020959	-0.193231	0.8468

R-squared	0.150827	Mean dependent var	-5.049320
Adjusted R-squared	0.137109	S.D. dependent var	0.883766
S.E. of regression	0.820947	Akaike info criterion	2.460590
Sum squared resid	417.1777	Schwarz criterion	2.538214
Log likelihood	-764.0859	F-statistic	10.99448
Durbin-Watson stat	1.868921	Prob(F-statistic)	0.000000

3. MODEL KETIGA

Dependent Variable: Y3_LN_Z
Method: Least Squares
Date: 11/24/10 Time: 16:51
Sample: 1 630
Included observations: 630

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	300.8482	42.78433	7.031739	0.0000
X04_GR	0.014321	0.005086	2.815936	0.0050
X05_LNSIZE	0.076147	0.025106	3.033023	0.0025
X06_LOAN	0.001810	0.002787	0.649350	0.5164
X07_LDR	0.002430	0.001065	2.281993	0.0228
X08_DEP	-0.003606	0.002717	-1.327212	0.1849
X09_CAR	0.017591	0.001468	11.98040	0.0000
X10_YEAR	-0.149773	0.021400	-6.998728	0.0000

R-squared	0.238623	Mean dependent var	2.451697
Adjusted R-squared	0.230054	S.D. dependent var	0.964600
S.E. of regression	0.846403	Akaike info criterion	2.516975
Sum squared resid	445.5996	Schwarz criterion	2.573428
Log likelihood	-784.8471	F-statistic	27.84862
Durbin-Watson stat	2.006696	Prob(F-statistic)	0.000000

Dependent Variable: Y3_LN_Z
Method: Least Squares
Date: 11/24/10 Time: 16:50
Sample: 1 630
Included observations: 630

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	273.3803	41.57073	6.576268	0.0000
X01_OS_BP	1.177909	0.178399	6.602672	0.0000
X02_OS_BPD	0.183444	0.091728	1.999877	0.0460
X03_OS_AS	0.065002	0.102101	0.636642	0.5246
X04_GR	0.015681	0.004903	3.198326	0.0015
X05_LNSIZE	-0.018452	0.031354	-0.588483	0.5564
X06_LOAN	-0.001305	0.002869	-0.454869	0.6494
X07_LDR	0.003102	0.001155	2.685129	0.0074
X08_DEP	-0.001222	0.002656	-0.459950	0.6457
X09_CAR	0.017011	0.001468	11.58621	0.0000
X10_YEAR	-0.135342	0.020811	-6.503368	0.0000

R-squared	0.297204	Mean dependent var	2.451697
Adjusted R-squared	0.285850	S.D. dependent var	0.964600
S.E. of regression	0.815158	Akaike info criterion	2.446437
Sum squared resid	411.3147	Schwarz criterion	2.524060
Log likelihood	-759.6275	F-statistic	26.17672
Durbin-Watson stat	1.990692	Prob(F-statistic)	0.000000

4. MODEL KEEMPAT

Dependent Variable: Y4_ROA
Method: Least Squares
Date: 11/24/10 Time: 16:50
Sample: 1 630
Included observations: 630

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	658.5672	108.5250	6.068345	0.0000
X04_GR	-0.014207	0.012860	-1.104739	0.2697
X05_LNSIZE	0.351792	0.063510	5.539127	0.0000
X06_LOAN	-0.000185	0.007090	-0.026051	0.9792
X07_LDR	0.017931	0.002724	6.583129	0.0000
X08_DEP	0.000940	0.006881	0.136569	0.8914
X09_CAR	0.017374	0.003736	4.649979	0.0000
X10_YEAR	-0.330073	0.054278	-6.081147	0.0000
X11_NPL	-0.207691	0.025049	-8.291497	0.0000

R-squared	0.195131	Mean dependent var	2.548371
Adjusted R-squared	0.184762	S.D. dependent var	2.369324
S.E. of regression	2.139275	Akaike info criterion	4.372993
Sum squared resid	2842.004	Schwarz criterion	4.436504
Log likelihood	-1368.493	F-statistic	18.81925
Durbin-Watson stat	1.841669	Prob(F-statistic)	0.000000

Dependent Variable: Y4_ROA
Method: Least Squares
Date: 11/24/10 Time: 16:50
Sample: 1 630
Included observations: 630

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	642.9775	103.4643	6.214487	0.0000
X01_OS_BP	0.450427	0.446161	1.009563	0.3131
X02_OS_BPD	1.813549	0.227945	7.956071	0.0000
X03_OS_AS	-0.041406	0.254711	-0.162562	0.8709
X04_GR	-0.012283	0.012182	-1.008309	0.3137
X05_LNSIZE	0.236110	0.077902	3.030860	0.0025
X06_LOAN	-0.020685	0.007148	-2.893711	0.0039
X07_LDR	0.025799	0.002878	8.963033	0.0000
X08_DEP	0.008622	0.006608	1.304709	0.1925
X09_CAR	0.019648	0.003657	5.373288	0.0000
X10_YEAR	-0.321192	0.051790	-6.201771	0.0000
X11_NPL	-0.188839	0.024021	-7.861571	0.0000

R-squared	0.282926	Mean dependent var	2.548371
Adjusted R-squared	0.270162	S.D. dependent var	2.369324
S.E. of regression	2.024126	Akaike info criterion	4.267017
Sum squared resid	2532.000	Schwarz criterion	4.351698
Log likelihood	-1332.110	F-statistic	22.16684
Durbin-Watson stat	2.010524	Prob(F-statistic)	0.000000