THE RELATIONSHIP BETWEEN CORPORATE GOVERNANCE AND BANK PERFORMANCE IN HONG KONG

by

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ABSTRACT

Central to corporate governance are the potential conflicts associated with the separation of ownership and control in corporations which in turn influence firm performance. The purpose of corporate governance is to protect shareholders' rights and interests and to ensure that corporate managers are prevented from applying insufficient work effort or pursuing their own interests at the detriment of equity holders. This study will focus on the impact of corporate governance on bank performance in Hong Kong. This is extremely important because financial institutions play a special role in the economic system as they greatly facilitate the efficient allocation of scarce capital resources. In addition, the Hong Kong banking sector is an important player in the international financial and foreign exchange centers. This study will analyze the impacts of corporate governance arrangements such as board size and composition on bank performance using panel regression methods.

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CHAPTER 1: INTRODUCTION

Corporate governance research has been increasingly popular in recent years. From the 1997 Asian financial crisis to the Enron and Worldcom scandals in the US, the main reason for these problems was poor corporate governance. Corporate governance is considered as one of the most critical factors influencing firm performance. Corporate governance in the banking sector is particularly important. This is because the banking sector plays a special role in the economic system as it facilitates capital allocations and the risk management of the business. Thus, the corporate governance arrangements of banks are very important for the business of the banks and their business customers.

The Hong Kong banking sector is known to be an important player in the international financial and foreign exchange centers. Indeed, there are 76 of the world banks in Hong Kong, which is the second largest loan syndication center in Asia and third largest international banking sector (HKTDC, 2007). There is evidence to suggest that the standard of corporate governance in the Hong Kong banking industry is already well established. Nam, Kang, and Kim (1999) compared the structure of corporate governance among Asian banking industries[1] and concluded that the Hong Kong banking industry maintains a significant high standard of corporate governance. Although the financial institutions in Hong Kong were affected during the 1997 Asian financial crisis, the banking industry continued work well during the period of high volatility in the securities and futures markets.

This study will focus on how banks choose their corporate structures and strategies that will in turn affect their performance in the Hong Kong banking industry. The structure

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[1] Hong Kong, China, Indonesia, Korea, Malaysia, Philippines, Singapore, and Thailand.

of this study is as follows: Chapter 2 reviews the background of the agency problems and outlines the relationship between corporate governance and bank performance; Chapter 3 introduces the research methods used in the empirical analysis with reference to the research questions set out in Chapter 2; Chapter 4 discusses the results of the analysis; Chapter 5 concludes and comments on the research question of this study. Finally, it provides recommendations for banks in the Hong Kong banking industry.

CHAPTER 2: A REVIEW OF THE LITERATURE

2.1 Introduction

This chapter reviews the literature pertinent to this study. In this section, we: (1) to evaluate the extent of agency problems; (2) discuss the corporate governance structure and its relationship with firm performance; and (3) take one further step to comment on the relationship between board composition and firm performance.

2.2 Literature Review

The factors underpinning corporate governance mainly include shareholding structure, board composition, and senior management. The relationship between these factors and firm performance is the focal point for many scholarly studies. Indeed, listed companies in most of developed country and some listed companies in developing country are the main focus point of corporate governance studies. In the following sections, we provide a brief overview of the agency problem, the relationship between corporate governance and firm performance and how the board composition may affect firm performance.

Agency problems

The source of agency problems dates back to the Berle and Means (1932) study on the US stock market. They argued that the conflicts of interest and information asymmetries between shareholders and managers are the reason that makes shareholders incur high costs of agency. Their advice was to strengthen the legal and governance structures in order to avoid managers pursue their own interests and ignore the shareholders' rights.

Jensen and Meckling (1976) defined the agency relationship as one party (the owner) contracts with another party (the manager) to perform services on their behalf. The existence of agency problems is because managers will not always act in the best interest of the shareholders in preference to gain a personal benefit. However, shareholders may protect their own interests by incurring monitoring costs to ensure that managers will not take certain actions which would harm their wealth. There are various mechanisms that address agency problems. They include governance structures, capital structure (i.e., use of debt as a disciplinary device) and managerial ownership incentives.

Jensen (1986) also emphasized the conflicts of interest between shareholders and managers are critical in firms with substantial free cash flows. The free cash flow theory suggests that managers will not always act to maximize the value of the firm. In addition, free cash flow is the cash flow in excess of what is required to fund all projects that have positive net present values. However, if a firm generates substantial free cash flow, managers may overspend funds on organizational inefficiencies or invest it in projects with negative net present value, which would harm the shareholders' wealth. Moreover, Denis (2001) stated that the conflict between managers and shareholders is due to managerial risk aversion. Shareholders always want to diversify their investment projects in order to reduce the risk of their investments. However, the majority income of managers is bonuses, which depend on the returns of the company. Therefore, for the same investment project, the level of risk that shareholders and managers can bear is quite different. Managers may not want to bear the risk that will result in losing some good investment opportunities, so appear the conflicts of interest between shareholders and managers.

The simplest albeit highly impractical way to solve the agency problems is to eliminate the separation between ownership and control in a company. However, the separation of ownership and control is to benefit of the company as it represents the optimal competitive response to the formation of the company's ownership structure. Denis (2001) stated that using contracts or directly monitoring by shareholders can reduce the conflicts of interest between shareholders and managers. Then, managers can pursue their own interests at the same time without violating the shareholders' interests.

Corporate governance and firm performance

International agencies and domestic legal authorities have paid increasingly more attention to the review and reform of the company law following the Enron and Worldcom scandals in the US. According to Ma (2005), Hong Kong recently has established a clearly outline of responsible corporate governance arrangements.

The purpose of corporate governance is to coordinate a conflict of interests among all parties' relationship within the company and to develop a system that can reduce or eliminate the agency problems (OECD, 1997). It argues that the agency problems become more critical with weak governance and limited protection of minority shareholders in a company (Dharwadkar, George, & Brandes, 2000). OECD (1997) also outlines that sound corporate governance should be able to help the board of directors and managers to achieve the best interests of the company and shareholders.

Moreover, it can be argued that firm performance can be improved with better corporate governance controls in a company. Famma and Jensen (1983) argued that corporate governance does affect firm performance. They found that the majority of larger firms with stronger governance controls are rewarded over the long-term. Klein, Shapiro, and

Young (2004) examined the relationship between corporate governance and firm value by using the Corporate Governance Index (CGI) and Tobin's Q, which measures the firm's value. The results conclude that corporate governance does matter in firm value.

In addition, Carse (2000) argued that a strong corporate governance standard is particularly important for banks. This is because most of funds that banks use for business belong to their creditors and depositors. The failure of a bank will affect not only its own shareholders, but have a systemic affect on other banks. Therefore, it is important to ensure that banks are operating properly. Carse also stated that the corporate governance of banks in Hong Kong is at a good standard due to the fact that the Hong Kong Monetary Authority has set out strict guideline in relation to corporate governance for banks.

On the other hand, a large number of studies have investigated the relationship between ownership structure and firm performance. Morck, Shleifer, and Vishny (1998) argued that higher ownership concentration has a positive impact on firm performance, because it increases the ability of shareholders to properly monitoring managers. Shleifer and Vishney (1986) also argued that higher level of block-holder is likely to have a positive effect on firm value. The large shareholders can work effectively for monitoring managers in order to prevent the potential takeover threat.

Based on the corporate governance structure, the board of directors will be the supreme policy maker in a company, so the relationship between structure of board composition and firm performance is extremely close. As we know board composition is part of the corporate governance, so our research takes a step forward to evaluate the relationship between board composition and firm performance.

Board composition and firm performance

Stanwick and Stanwick (2005) argued that members on the board of directors of banks are important for the bank's long term performance. Board of directors is a collective of people who are nominated by the shareholders of a company, and responsible for making decisions and supervising the daily operations of the firm. The existence of board of directors is very essential and necessary. As in daily operation, it is very hard to make detailed decisions through shareholders' regular meetings, especially for the public-listed companies which have a large number of shareholders. With proper of supervision of the firm's operation, board of directors ensures that the corporation operates in the direction that benefits the shareholders.

Moreover, Carse (2000) stated that the board of directors must play a role in approving the strategy and business plans of the bank. Board of directors must monitor the performance of management well to ensure that that the bank operates its business with high ethical standards. According to the Hong Kong Monetary Authority (HKMA) (2000), a board of directors should contain a mixture of both executive and non-executive independent directors. It also requires the separation roles of Chairman of the board of directors and Chief Executive Officer (CEO) of the company.

According to the Stock Exchange of Hong Kong Limited (1989), company directors in Hong Kong must comply with the company ordinance under the governance rules listed on the Stock Exchange of Hong Kong Limited. According to the HKMA (2000), an independent non-executive director is required for Board of banks in order to maintain the independence in corporate governance. It believed that an effective board of directors will protect the shareholders' rights by adopting strategies to ensure the structure of the corporation (Famma and Jensen, 1983).

In a recent study of the corporate governance in the Hong Kong banking industry, Tsui and Gul (2000) argued that the quality of the members in the board of directors is more important to achieve a high corporate governance standard. They investigated a number of boards of directors of the listed banks in Hong Kong, and found that board where the majority of directors hold at least Master degrees are perceived to be of a high standard.

According to Jensen and Meckling's (1976) convergence-of-interest hypothesis, when the shareholding ratio of the board of directors exceed a certain amount, the directors' self-interest and the company's interest will be integrated. This will give the board of directors more incentives on supervision of the management team's activities, and hence improve the performance of the firm. The same result was reported in Kesner's study (1987), where the higher the shareholding ratio, the more incentives for the board, and the better the firm performance.

On the other hand, members of the board of directors may have their own interests in the company. They may use the company's resources to acquire the company or to reject public open offers of acquisition due to their own interests (Jensen and Ruback, 1983). Allen and Cebenoyan (1991) found that listed banks were more likely to make acquisitions that would add value to the banks when the ownership concentration is low. These studies are referred to as the entrenchment hypothesis, that is, when the share rights are highly controlled by the board, the possibility of entrenchment is higher as well, which leads to poor firm performance.

Morck, Shleifer and Vishny (1988) analyze firm performance measured by Tobin's Q and found that the Tobin's Q increases in the early stage-indicating a positive association between the share structure and the firm value; and decreases in the later stage, indicating a negative relation between the share structure and firm value. In other

words, the relationship between share structure and Tobin's Q is non-linear.

In conclusion, the effects of convergence of interest and entrenchment can give rise to different relationships between ownership structure and firms performance.

2.3 Summary

Previous academic research has been extensively discussing the topic of corporate governance in the banking industry. It has found that agency problems do have impact on firm performance, and corporate governance is used to reduce or eliminate the problem. The various studies of the board composition show that the separation of the roles of Chairman of the board of directors and CEO of the company is required. Moreover, a good quality member in board of directors is the fundamental requirement for good corporate governance practice.

Research questions: The main research questions of this study is set out to investigate are as follows:

1. Is the corporate governance structure of a bank important to its performance in the Hong Kong banking industry?

2. How to construct an optimal corporate governance policy in order to achieve the best firm performance in the Hong Kong banking industry?

3. Does the size of the bank affect its performance in the Hong Kong banking industry?

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodological approach that will be used to provide answers to the research questions set out in the Literature Review section. In this section, we (1) provide a brief motivation for the study; (2) carry on the definition and explanation of the variables that are used for this study; (3) introduce the sample and the source of the materials; (4) outline the research method and the research hypothesis; (5) state the ethical issues concern in this research; (6) conclude with a brief summary.

3.2 Motivation

The banking industry plays a critical role in the efficient allocation of capital in an economy. It also promotes monetary and financial stability to the economy as a whole. In addition, the Hong Kong financial market is one of the major world centers playing an important role in the international financial system. Therefore, we choose the Hong Kong banking industry as the research topic for this study. We will focus on the performance of the Hong Kong banking industry and, in particular, investigate the impact of corporate governance on bank performance, and examine how banks construct their corporate governance policy in order to reach the goal of firm value maximization.

3.3 Variable Measurement

The objective of this study is to examine the relationship between corporate governance, bank performance, while controlling for a number of firm specific factors that may affect bank performance.

Bank performance

The measures of bank performance used in this study are: Return on assets (ROA), Return on equity (ROE), Market-to-Book Ratio, Risk-adjusted return on capital (RAROC), Efficiency of interest management, Efficiency of non-interest management, and Cost efficiency ratio. The definition and explanation of the variables (see Saunders and Cornett, 2005) is as follows:

1. Return on Assets (ROA)

ROA equals after tax net income divided by average total assets of a bank. This aims to examine the amount of after tax net income that can be earned for every dollar of assets in the bank. It reflects whether the bank uses assets effectively in order to produce its income, so it is an important profitability indicator. However caution needs to be exercised in situations where high ROAs reflect big cost cuts such as those on IT development, skilled, labor force, advertising, etc that may impact adversely on the long term competitiveness of the institution.

2. Return on Equity (ROE)

ROE equals after tax net income divided by average total equity of a bank. This aims to examine the amount of after tax net income that can be earned for every dollar of equity. It indicates the amount of income that shareholders will earn in a bank. An increase in ROE due to an increase in leverage may be an issue of concern for the bank's management.

3. Market-to-Book ratio

Market-to-Book ratio equals the current share price divided by the book value per share. Book value per share equals the total book value divided by the number of outstanding shares, besides that the total book value can be calculated by the bank's total tangible assets less its total liabilities. It argues that a higher market-to-book ratio will signal more potential investment opportunities for the bank to investors.

4. Risk-Adjusted Return on Capital (RAROC)

The ideal indicator of bank performance should contain the relationship between risk and return. The concept of RAROC was developed by Bankers Trust in the late 1970s as means to evaluate the performance of a company. The purpose of developing RAROC measurement is intended to create an objective measurement indicator for analyzing financial performance in different market operations. Prokopczuk, Rachev, and Truck (2004) have used the level of debt ratio and several credit risk indices to investigate the risk of investment portfolio of banks. Although ROA and ROE are more common measures that banks use as an indicator of performance, in this study we also consider RAROC, as larger banks increasingly focus on risk adjusted performance measures.

RAROC is defined as "the ratio of risk adjusted return to economic capital. The economic capital is the amount of money which is needed to secure the survival in a worst case scenario." (http://en.wikipedia.org/wiki/Risk_adjusted_return_on_capital). The risk adjusted return can be calculated by financial net income less expected loan impairment allowances, also called bad debt, from the year; while economic capital is calculated by capital adequacy ratios (CAR), which can be found from the annual report of the bank, multiplied by total capital. The equation is as follows:

$$RAROC = \frac{Financial\ net\ income - Loan\ impairment\ allowances}{CAR \times Total\ Capital}$$

(i)   Financial net income

Financial net income contains three parts, they are: (1) the income part, which includes interest income, dividend received on financial investment, gains less loss from financial investment, and net trading income; (2) Capital cost part, which includes interest expenses; and (3) business operation part, which is measured by operating expenses multiplied by business income for every dollar from net operating profit. Therefore, the financial net income is calculated as follows:

Financial net income =   Interest income, (a)

$+$ Dividend received on financial investment, (b)

$+$ Gains less loss from financial investment, (c)

$+$ Net trading income, (d)

$-$ Interest expenses

$-$ $Operating\ expense \times \dfrac{a + b + c + d}{Net\ operating\ profit}$

All variables of calculating financial net income can be found from the financial statement of the annual report of the bank.

(ii)   Loan impairment allowances

Credit business is the main business for commercial banks. Since banks use a large portion of their funds for providing credit to firms and individuals, so they face the possibility that firms or individuals may be unable to return the funds, which makes banks exposed to losses from providing credit business. In general, banks use historical data and various quantitative methods to measure the probability that firms or individuals will break the credit agreement. The amount of loan impairment allowances can be found from the financial statement of the bank.

(iii)   Capital adequacy ratio (CAR)

CAR is referred as "a percentage of the risk from bank's capital. It determines the capacity of the bank in terms of meeting the time liabilities and other risk such as credit risk and operational risk." (http://en.wikipedia.org/wiki/Capital_adequacy_ratio). Banks in Hong Kong are required to submit their capital adequacy ratio (CAR) on a consolidated basis to the Hong Kong Monetary Authority for its regulatory purposes and in accordance with the Third Schedule of the Banking Ordinance (HKMA, 2000).

5. Efficiency of interest management

If we separate the business activity of a bank into interest and non-interest managements, then we can get the efficiency ratio for interest management from net interest income divided by total assets. This ratio examines the earning performance of a bank from an aspect of business that related to interest management. The level of efficiency ratio of interest management will show how well the pricing strategy that a bank is made in past.

6. Efficiency of non-interest management

Non-interest income and expenses mainly include fees from service charges. Others include commission income, net trading income, net gain/loss on financial investment, net gain/loss on investment on securities, net insurance premium income, other operating income, and net insurance benefits and claims, etc. This study investigates whether corporate governance policy will have an effect on the efficiency of interest and non-interest management.

7. Cost efficiency ratio

The cost efficiency ratio is used to evaluate how efficiently a bank is operating. It accounts for employee compensation and benefits, general and administrative expenses, depreciation of property, plant, and equipment, and amortization of intangible assets. The formula for calculating the cost efficiency ratio is non-interest incomes divided by non-interest expenses. Banks wish to keep the operating costs down in order to remain competitive, so they calculate the cost efficiency ratio to estimate their overhead structure. This is because the cost efficiency ratio allows banks to understand how they can operate their business effectively. The cost efficiency ratio is used to measure the profitability of a bank. That is, the higher the cost efficiency ratio, the better management performance of a bank. Therefore, banks may want to know the cost efficiency ratio before making the operating decisions.

Corporate Governance

The measures of corporate governance used in this study are: the size of board of directors and the level of loans from related-party. The definition and explanation of the variables are as follows:

1. Size of board of directors

Size of board of directors is the total number of members within the board of directors. This study will examine the extent to which the bank performance will be affected by the size of the board of directors.

2. Related-party loans

The level of related-party loans represents the amount of loans made to directors and officers of the bank. It is measured as the amount of loans made to directors and officers divided by the net value of the bank. Banks may provide credit services to related-party without collateral when corporate governance is not healthy. This study will examine whether the provision of related-party loans will damage bank performance or not.

Controlling variables

The controlling variables used in this study are: market share of debt and bank's size in terms of assets. The definition and explanation of the variables are as follows:

1. Market share of debt

The bank's market share of debt is defined as the percentage of an individual bank's total debt issues relative to total debt issues in the industry. The issues of debt refer to securities on trading assets, financial assets designed at fair value, financial investment of available-for-sale, and financial investment of held-to-maturity. In general, the main business of a bank is to collect funds from depositors and transfer these funds as a loan to firms and individuals. Banks often require additional capital that may be raised through issues of debt or equity, since a higher ratio of a bank's market share of debt may be advantageous in enhancing the investment opportunities and its earning capacity at the expense of increasing the riskiness of the bank.

2. Bank size

The size of an individual bank is calculated as the total assets of a bank divided by the total assets of the industry. It is expected that larger banks will perform better, because they may have more diversified investment opportunities, better management, and employ better technology.

Table 3-1: Definition of variables

	Variable	Formula
Bank Performance	ROA	$$\frac{Net\ income}{Total\ assets}$$
	ROE	$$\frac{Net\ income}{Total\ equity}$$
	Market-to-Book ratio	$$\frac{Share\ price}{Book\ value\ per\ share}$$
	RAROC	$$\frac{Financial\ net\ income - Loan\ impariment\ allowances}{CAR \times Total\ Capital}$$
	Efficiency of interest management	$$\frac{Interest\ income - Interest\ expenses}{Total\ assets}$$
	Efficiency of non-interest management	$$\frac{Non\ interest\ income - Non\ interest\ expenses}{Total\ assets}$$
	Cost efficiency ratio	$$\frac{Non\ interest\ income}{Non\ interest\ expenses}$$
Corporate Governance	Board of directors size	Total number of members within the board of directors
	Level of related-party loans	$$\frac{Loan\ to\ related\ party}{Net\ value\ of\ Bank}$$
Controlling Variables	Market share of debt	$$\frac{Bank_i\ total\ debt\ issues}{Total\ debt\ issues\ in\ industry}$$
	Bank size	$$\frac{Bank_i\ total\ assets}{Total\ assets\ in\ industry}$$

3.4 Data Collection

The data is annual observations on Hong Kong licensed banks from 2005 to 2007. According to the Hong Kong Monetary Authority, there are 24 licensed banks that were incorporated in Hong Kong in 2007. The data was collected from Bank scope and annual reports from banks' web-sites.

Limitation on data collection

As most of information for CITIBANK (Hong Kong) Limited was not available, this bank was deleted from the sample. Also, market-to-book ratios are only reported for listed banks.

3.5 Research Method

The impact on bank performance from corporate governance policy may be subject to time lags. This study adopts the research method of Cordeiro and Veliyath (2003) in using panel methods to analyze the relationship between corporate governance and bank performance. The sample of companies consists of data for 23 banks from 2005 to 2007 giving a total sample size of 23*3 = 69 observations for every variable.

There are two parts in the empirical analysis. First, Mean Equality Tests are used to assess if there are differences in performance between two different groups of banks (listed banks and non-listed banks). Secondly, Panel Regression methods are used to analyze the relationship between bank performance and corporate governance while controlling for bank specific effects that are likely to influence performance.

Mean Equality Test

Mean equality test is used to test the null hypothesis that two independent subgroups have equal means (EView 5 Users Guide, 2004). This study focuses in analyzing two subgroups: listed banks and non-listed banks. We test whether there is a significant difference of bank performance and corporate governance practice by comparing listed banks and non-listed banks. We would expect that listed banks perform better than non-listed banks because listed banks have better governance structures in place. In general, listed banks are larger banks in the banking industry. This is because they can raise funds by issuing their securities to acquire more projects and thus to achieve the goal of the value maximization. Moreover, members in the board of directors from listed banks may less likely controlled by the management when compared with non-listed banks. It may because the separation roles of the board of directors and the management in listed banks are more clear than non-listed banks. In addition, board acting independently from management is more likely to make decisions that are to the benefit of the bank's long-term performance.

Hypotheses of the study

In order to assess the influences of corporate governance on bank performance, we set out four testable hypotheses as follow:

Hypothesis 1: The larger size of board of directors, the better performance of a bank will be.

We expect that in banks with larger size of boards of directors, the level of independence between board of directors and management team of the bank will be

higher and the transparency about the management of a bank will also be higher. Larger boards facilitate better monitoring of the operation of the business, which in turn will reduce the agency problems between shareholders and managers. As a result the performance of a bank is likely to improve.

Hypothesis 2: The lower level of trading volume from related-party, the better the performance of a bank will be.

We believe that the credit quality control level will be reduced when a bank is associated with a higher level of trading volume from related-party, and this is likely to damage bank performance.

Hypothesis 3: The larger size of a bank, the better performance of a bank will be.

We expect that a larger bank will have better ability to absorb different types of risk from its investments. Moreover, larger banks are expected to be better managed and use better information technology, which should improve bank performance.

Hypothesis 4:   An inverted U-relationship in the effect of market share of debt on bank performance.

Banks that are more likely issue debt to raise more capital for their business will perform better. Better capitalized banks may be advantageous in obtaining more diversified investment opportunities and enhance technology information, which should improve bank performance. Also, issuing debt may help mitigate the agency problem of outside equity. Jense and Meckling (1976) stated that higher leverage ratio reduces the agency problem by encouraging managers to pay more attention to the choice of investment. Banks with higher leverage ratio should force managers to generate at least

enough cash flow to pay interest expenses, since mangers will lose their jobs when banks face insolvency. However, when the bank has a sufficiently high level of debt, further debt increases may have negative effects on its performance. Berger and Bonaccorsi di Patti (2006) argued that increased debt will reduce the agency costs of outside equity, but increase the agency costs of outside debt at the same time. They argued that if the firm has a relatively high level of debt, further debt increases will have significant agency problems of outside debt, since the firm may face insolvency. Therefore, the hypothesis predicts that an increase in the level of market share of debt will improve the bank performance, but a negative relationship between the level of market share of debt and bank performance when the level of market share of debt becomes sufficiently high.

Panel Regression

This study will use panel regressions to analyze the relationship between bank performance and corporate governance, controlling for the market share of debt and bank size (assets). We report the results of a panel model with fixed effects. The fixed effects model runs the regression analysis with a constant coefficient that refers to slopes, while intercepts are differ according to the cross-sections. From the fixed effects model, we select fixed effects on cross-section to examine cross-section differences in intercepts. To allow for cross-section heteroskedasticity, we use cross-section weights under GLS weights panel options in EViews for estimating a feasible GLS specification. Period weights (PCSE) were also used under coefficient covariance methods from the panel options in order to obtain robust standard error (EView 5 Users Guide, 2004). The regression model allowing for fixed effects is as follows:

$$Y_{it} = \alpha_i + \beta_1 G_{1i} + \beta_2 G_{2i} + \gamma_1 CV_{1i} + \gamma_2 CV_{2i} + \gamma_3 CV_{3i} + \varepsilon_{it}$$

Where:

Y_{it} is the dependent variable, which is a measure of bank performance such as ROA, ROE, Market-to-Book ratio, RAROC, Efficiency of interest management, Efficiency of non-interest management, and Cost efficiency ratio.

G_{1i} and G_{2i} are the independent variables of corporate governance, which measure the size of the board of directors and the level of loans to related-party, respectively.

$CV_{1i}, CV_{2i},$ and CV_{3i} are the independent variable of controlling variables, which measure the bank size in terms of assets, the market share of debt, and $\frac{1}{2}(Market\ Share\ of\ Debt)^2$, which to allow the reverse causality to be non-monotonic, respectively.

α_i is the intercept of the model.

β and γ are the slopes of corporate governance and controlling variables, respectively.

ε_i is an error term.

3.6 Ethical Issues

All the data is collecting from Bank scope and annual report of the banks. All of this data is public information. Therefore, there is no ethical concern in this research.

CHAPTER 4: EMPIRICAL ANALYSIS

4.1 Introduction

The purpose of this study is to investigate the impact of corporate governance on bank performance in the Hong Kong banking industry from 2005 to 2007. This section reports (1) the descriptive statistics of the variables used in the empirical analysis; (2) the mean equality tests on bank performance and corporate governance measures; (3) the results of the panel regression on bank performance; and (4) concludes with a brief summary of this section.

4.2 Descriptive Statistics

The descriptive statistics of the bank performance, corporate governance, and control variables are given in Tables 4.1 – 4.11.

Bank performance

1. Overall bank performance

(a) Return on assets (ROA) and Return on equity (ROE)

From table 4-1, the top five banks in the Hong Kong banking industry in terms of ROAs from 2005 through 2007 are: Hong Kong & Shanghai Bank, Wing Lung Bank, Standard Chartered Bank, Bank of China, and Hang Seng Bank, respectively. It seems most of larger banks use their assets more effectively than smaller banks. It appears banks with

large amount of assets must work more effectively and have competitive advantage when competitive with banks with small amount of assets in general. The average ROAs for Hong Kong banks in 2005 – 2007 are: 0.92%, 1.01%, and 1.05%, respectively, exhibiting a positive trend over time.

From table 4-2, the top five banks in terms of ROEs are: Hang Seng Bank, Hong Kong & Shanghai Bank, Standard Chartered Bank, Wing Hang Bank, and Bank of China, respectively. The result shows that most of larger banks are ranked in higher places, which illustrates that larger banks pay more attention on shareholder earnings. The average ROE in 2005 – 2007 are: 11.09%, 12.07%, and 12.78%, respectively, exhibiting a positive trend over time.

(b) Market-to-Book ratio

The market-to-book ratio indicates how investors value each of the banks. From table 4-3, the top five banks in terms of average market-to-book ratios are: Hong Kong & Shanghai Bank, Hang Seng Bank, Fu Bon Bank, China Construction Bank, and Bank of China, respectively. The average market-to-book ratios in 2005 - 2007 are: 1.1%, 1.22%, and 0.89%, respectively. On average, the market values of the banks are only slightly higher than their book value in the Hong Kong banking industry from 2005 to 2007. This suggests that investors are feeling conservatively about the future prospect of the Hong Kong banking industry.

(c)   Risk-Adjusted Return on Capital (RAROC)

Table 4-4-1 details the RAROC calculations from 2005 through 2007. The maximum value of financial net income was HK$698 billion and the minimum value was HK$-179 billion. This shows that the variation of the earnings performance is large before deducting losses from loan impairment. Moreover, the maximum value of the loan impairment charged was HK$5.8 billion and the minimum value was HK$681 thousand. It shows the variation of the assets quality is large. In addition, the amount of loan impairment may be affected by the size of bank. The average amounts of loan of impairment charged from 2005 to 2007 are: HK$24.7 million, HK$57.7 million, and HK$73.9 million, respectively, showing a steady increase over time. Therefore, the average amount of returns after risk-adjustment from 2005 to 2007 is: HK$1.7 billion, HK$2.8 billion, and HK$ 2.7 billion, respectively. This shows that the growth rate of returns is faster than the loan impairment growth rate, especially for 2006. This signals a good performance of banks to investors, since gains from financial earning are good enough to cover the losses from loan impairment. Additionally from table 4-4-1, the average amounts of risk-adjusted capital from 2005 to 2007 are: HK$ 1.36 billion, HK$ 1.61 billion, and HK$ 1.73 billion, respectively, showing a positive trend over the years.

From table 4-4-2, the average ratios of RAROC from 2005 to 2007 are: 1.24%, 2%, and -0.39%, respectively. The RAROC becomes worse in 2007, which may signal that the business environment for banks became more difficult for operating business, perhaps as a result of the start of the sub-prime crisis. The top five banks in terms of RAROC are: Hong Kong & Shanghai Bank, Hang Seng Bank, East Asia Bank, Industrial and Commercial Bank of China, and Bank of China, respectively.

2. *Bank performance − specific parts of business*

(a) Efficiency of interest management and non-interest management

Table 4-5 shows the top five banks in terms of interest management efficiency ratios from 2005 to 2007 are: Bank of China, China Construction Bank, Wing Lung Bank, Standard Chartered Bank, and Shanghai Commercial Bank, respectively. Table 4-6 shows the top five banks in terms of non-interest management efficiency ratios from 2005 to 2007 are: Industrial and Commercial Bank of China, Bank of China, Hong Kong & Shanghai Bank, Standard Chartered Bank, and Hang Seng Bank, respectively. It appears that large banks perform better than small banks in general for the business from interest and non-interest management. The average ratios of interest management efficiency for these three years are: 1.62%, 1.59%, and 1.63%, respectively. The average ratios of non-interest management efficiency for the same period are: 0.71%, 0.75%, and 1.02%, respectively. The results show a constant growth rate for the business on both interest and non-interest management of banks. Both results are desirable, since interest income is good enough to cover interest expenses and non-interest income also able to cover non-interest expenses.

(b) Cost efficiency ratio

Table 4-7 shows the top five banks in terms of cost efficiency ratios from 2005 to 2007 are: FuBon Bank, CITI Ka Wah Bank, Hong Kong & Shanghai Bank, Hang Seng Bank, and Bank of China, respectively. The average ratios of cost efficiency from 2005 to 2007 are: 41.77%, 40.07%, and 50.61%, respectively. The average ratios of cost efficiency have increased from 2005 to 2007, indicating the amount of non-interest expenses required to spend on running the businesses of banks is in at decreasing trend over the years. This may reflect the response of banks to survive in an increasingly in competitive environment.

Based on these statistical results of bank performance, Hang Seng Bank, Hong Kong & Shanghai Bank, Bank of China, and Standard Chartered Bank generally perform better other banks in every category of bank performance regardless of the overall or the specific parts of business performance. These banks have better performance may because they have better governance structures in place. Therefore, our research examines the statistical analysis of corporate governance to investigate the relationship between bank performance and corporate governance.

Corporate governance

Table 4-8 shows the top five banks in terms of the number of members in the board of directors from 2005 to 2007 are: Chong Hing Bank, Hang Seng Bank, Hong Kong & Shanghai Bank, Public Bank, and Bank of East Asia, respectively. The range of the number of members in the board of directors for 2005 to 2007 is from 9 to 20, and the average number of members in the board of directors is 15. Table 4-9 shows the best five banks in terms of level of trading volume from related-party loans from 2005 to 2007 are: Public Bank, Hang Seng Bank, Wing Lung Bank, Hong Kong & Shanghai Bank, and Standard Chartered Bank, respectively. The range of the level of trading volume from related-party loans is from 0.01% to 6.76%, the average level of trading volume from related-party loans is 0.64%.

These statistical results of the corporate governance analysis indicate that Hang Seng Bank, Hong Kong & Shanghai Bank, and Public Bank hold a high standard of corporate governance structure. Note that Hang Seng Bank won the best corporate governance award at the Corporate Governance Asia and the best wealth management bank award at the Asian Banks competition from 2005 to 2007. The results in this section corroborate our previous findings on bank performance where it was found that Hang Seng Bank

and Hong Kong & Shanghai Bank are the top performing banks. On this basis of these findings, we surmise that the corporate governance structure of a bank is important to its performance in the Hong Kong banking industry.

Controlling variables

Table 4-10 shows the top five banks in terms of the level of market share of debt from 2005 to 2007 are: Hong Kong & Shanghai Bank, Bank of China, Hang Seng Bank, Standard Chartered Bank, and Industrial and Commercial Bank of China, respectively. The maximum ratio of market share of debt is 40.04%, the minimum ratio is 0.05%, and the average ratio is 4.35%. Table 4-11 shows the top five banks in terms of size (assets) are: Hong Kong & Shanghai Bank, Bank of China, Hang Seng Bank, Standard Chartered Bank, and Bank of East Asia, respectively. The largest bank in the Hong Kong banking industry is Hong Kong & Shanghai Bank, which holds 49.14% of the total assets of the industry, while the smallest bank is Mevas Bank that only holds 0.01% of the total assets of the industry.

Our previous analysis has shown that the four largest banks in terms of assets, Hong Kong & Shanghai Bank, Bank of China, Hang Seng Bank, and Standard Chartered Bank, are the best performance in the Hong Kong banking industry. It may be argued that banks holding a high level of market share of debt in the industry are advantageous in enhancing investment opportunities, which in turn benefits their business performance. Moreover, the largest bank (Hong Kong & Shanghai Bank) in the Hong Kong banking industry is one of note-issuing banks in Hong Kong and has a long business history and reputation. It can be argued that they have an incentive to achieve high operating performance to maintain their high credit reputation.

Table 4-1: Return on assets from 2005 through 2007

Bank Name	ROA(%)				
	2005	2006	2007	Average	Rank
Hong Kong & Shanghai Banking Corporation Limited	2.00	1.90	2.60	2.17	1
Bank of China (Hong Kong) Limited	1.67	1.56	1.53	1.59	4
Hang Seng Bank, Limited	1.44	1.46	1.78	1.56	5
Stardard Chartered Bank (Hong Kong) Limited	1.40	1.70	1.70	1.60	3
Bank of East Asia, Limited	1.20	1.30	1.20	1.23	9
DBS Bank (Hong Kong) Limited	0.60	0.80	0.65	0.68	18
Industrial and Commercial Bank of China (Asia) Limited	0.90	1.00	1.00	0.97	13
Wing Hang Bank, Limited	1.35	1.47	1.53	1.45	6
Dah Sing Bank Limited	1.20	1.20	0.70	1.03	10
Nan Yang Commercial Bank, Limited	0.90	1.01	1.05	0.99	12
CITI Ka Wah Bank, Limited	0.65	0.55	0.05	0.42	21
Wing Lung Bank, Limited	1.50	2.00	1.50	1.67	2
Shanghai Commercial Bank Limited	0.95	0.95	1.09	1.00	11
Chong Hing Bank Limited	0.90	0.90	0.80	0.87	15
FuBon Bank (Hong Kong) Limited	0.50	0.60	0.80	0.63	19
China Construction Bank (Asia) Cororation Limited	1.20	1.20	1.40	1.27	8
Chi Yu Banking Corporation Limited	0.80	0.85	1.05	0.90	14
Bank of Communications Corporation Limited	0.60	0.90	0.60	0.70	17
Tai Yau Bank Limited	0.50	0.55	0.70	0.58	20
Tai Sang Bank Limited	0.90	1.05	2.05	1.33	7
Mevas Bank Limited	0.15	0.21	0.25	0.20	23
Public Bank (Hong Kong) Limited	0.30	0.45	0.30	0.35	22
Standard Bank Asia Limited	0.60	0.40	1.35	0.78	16
Maximum	1.67	2.00	2.05	1.67	
Minimum	0.15	0.21	0.05	0.20	
Median	0.90	0.98	1.05	0.98	
Average	0.92	1.01	1.05	0.99	
Standard Deviation	0.41	0.45	0.53	0.43	

Table 4-2: Return on equity from 2005 through 2007

| Bank Name | ROE (%) | | | | |
	2005	2006	2007	Average	Rank
Hong Kong & Shanghai Banking Corporation Limited	27.50	27.40	35.40	30.10	2
Bank of China (Hong Kong) Limited	18.27	17.02	17.40	17.56	5
Hang Seng Bank, Limited	37.40	31.10	32.10	33.53	1
Stardard Chartered Bank (Hong Kong) Limited	21.70	22.60	24.60	22.97	3
Bank of East Asia, Limited	12.10	13.40	14.50	13.33	6
DBS Bank (Hong Kong) Limited	10.00	11.19	11.96	11.05	13
Industrial and Commercial Bank of China (Asia) Limited	10.80	11.90	12.30	11.67	10
Wing Hang Bank, Limited	17.10	18.90	20.50	18.83	4
Dah Sing Bank Limited	13.60	14.00	8.40	12.00	9
Nan Yang Commercial Bank, Limited	9.97	11.30	12.43	11.23	12
CITI Ka Wah Bank, Limited	8.28	11.20	9.78	9.75	15
Wing Lung Bank, Limited	11.80	15.30	11.50	12.87	7
Shanghai Commercial Bank Limited	10.70	10.26	11.34	10.76	14
Chong Hing Bank Limited	7.00	8.50	8.20	7.90	17
FuBon Bank (Hong Kong) Limited	6.50	8.50	11.40	8.80	16
China Construction Bank (Asia) Cororation Limited	6.60	7.60	8.00	7.40	18
Chi Yu Banking Corporation Limited	11.55	10.04	15.16	12.25	8
Bank of Communications Corporation Limited	4.80	7.40	5.50	5.90	21
Tai Yau Bank Limited	3.38	3.24	4.26	3.63	23
Tai Sang Bank Limited	3.50	8.20	10.20	7.30	19
Mevas Bank Limited	3.80	5.30	12.70	7.27	20
Public Bank (Hong Kong) Limited	4.80	7.40	5.50	5.90	21
Standard Bank Asia Limited	10.23	11.13	13.47	11.61	11
Maximum	37.40	31.10	32.10	33.53	
Minimum	3.38	3.24	4.26	3.63	
Median	10.11	11.16	11.73	11.14	
Average	11.09	12.07	12.78	11.98	
Standard Deviation	7.62	6.17	6.42	6.58	

Table 4-3: Market-to-Book ratio from 2005 through 2007

| Bank Name | Market-to-Book ratio | | | | |
	2005	2006	2007	Average	Rank
Hong Kong & Shanghai Banking Corporation Limited	1.35	1.83	1.12	1.43	1
Bank of China (Hong Kong) Limited	1.20	1.62	0.99	1.27	5
Hang Seng Bank, Limited	1.20	1.52	1.23	1.32	2
Stardard Chartered Bank (Hong Kong) Limited	1.01	1.53	1.21	1.25	6
Bank of East Asia, Limited	0.76	1.04	0.82	0.87	9
DBS Bank (Hong Kong) Limited	N/A	N/A	N/A	-	-
Industrial and Commercial Bank of China (Asia) Limited	1.54	1.34	0.86	1.25	7
Wing Hang Bank, Limited	0.66	0.97	0.87	0.83	10
Dah Sing Bank Limited	0.29	0.42	0.72	0.48	13
Nan Yang Commercial Bank, Limited	N/A	N/A	N/A	-	-
CITI Ka Wah Bank, Limited	N/A	N/A	N/A	-	-
Wing Lung Bank, Limited	0.81	0.72	0.69	0.74	12
Shanghai Commercial Bank Limited	N/A	N/A	N/A	-	-
Chong Hing Bank Limited	1.35	0.57	0.34	0.75	11
FuBon Bank (Hong Kong) Limited	1.31	1.42	1.14	1.29	3
China Construction Bank (Asia) Cororation Limited	1.52	1.41	0.92	1.28	4
Chi Yu Banking Corporation Limited	N/A	N/A	N/A	-	-
Bank of Communications Corporation Limited	1.34	1.48	0.65	1.16	8
Tai Yau Bank Limited	N/A	N/A	N/A	-	-
Tai Sang Bank Limited	N/A	N/A	N/A	-	-
Mevas Bank Limited	N/A	N/A	N/A	-	-
Public Bank (Hong Kong) Limited	N/A	N/A	N/A	-	-
Standard Bank Asia Limited	N/A	N/A	N/A	-	-
Maximum	1.54	1.83	1.23	1.43	
Minimum	0.29	0.42	0.34	0.48	
Median	1.20	1.41	0.87	1.25	
Average	1.10	1.22	0.89	1.07	
Standard Deviation	0.37	0.44	0.25	0.30	

Table 4-4-1: The explanation on calculating the RAROC from 2005 through 2007

		Financial net income	Loan impairment charged	Risk-Adjusted Return	Capital adequency ratio (%)	Total capital	Risk-Adjusted Capital	RAROC(%)
	Maximum	327,604,835,686.60	2,645,000,000.00	325,540,835,686.60	28.60	154,065,000,000.00	19,104,060,000.00	17.04
	Minimum	-12,027,485,889.25	680,952.38	-12,040,524,698.77	9.89	86,752,751.47	15,181,731.51	-22.72
2005	Median	21,906,304,796.94	266,987,126.29	21,639,317,670.65	17.02	18,386,278,869.21	2,694,182,131.91	1.24
	Average	1,732,676,978.84	24,743,000.00	1,702,868,931.22	16.40	8,047,100,000.00	1,357,136,000.00	3.16
	Standard Deviation	70,584,403,453.37	676,575,182.37	70,049,284,558.20	4.34	33,335,871,719.68	4,256,803,717.21	10.00
	Maximum	475,372,389,897.92	4,809,000,000.00	470,563,389,897.92	33.00	183,981,000,000.00	24,837,435,000.00	18.95
	Minimum	-14,108,111,855.20	2,406,305.44	-14,146,318,504.81	13.20	373,652,995.24	69,499,457.11	-36.43
2006	Median	32,884,347,002.65	369,832,282.50	32,514,514,720.15	17.11	21,058,069,675.47	3,112,563,981.92	2.00
	Average	3,035,652,475.90	57,727,000.00	2,791,804,475.90	16.10	9,683,600,000.00	1,607,477,600.00	3.14
	Standard Deviation	101,185,346,482.40	1,034,209,970.47	100,166,443,837.20	4.35	39,277,160,876.56	5,270,161,685.84	11.21
	Maximum	697,973,373,787.59	5,805,000,000.00	692,168,373,787.59	21.70	206,449,000,000.00	23,948,084,000.00	28.90
	Minimum	-179,078,183,006.01	1,686,978.98	-179,180,485,006.01	11.20	456,000,000.00	74,328,000.00	-88.44
2007	Median	35,122,186,108.84	387,676,431.87	34,734,509,676.96	14.83	22,885,543,343.44	2,982,110,253.02	-0.39
	Average	2,767,141,964.21	73,891,534.93	2,729,814,808.88	14.30	9,878,700,000.00	1,728,405,000.00	3.13
	Standard Deviation	154,250,184,434.58	1,194,423,056.44	153,107,452,264.92	2.76	43,379,055,867.49	5,034,605,603.30	22.04

Table 4-4-2: RAROC from 2005 through 2007

Bank Name	RAROC (%)				
	2005	2006	2007	Average	Rank
Hong Kong & Shanghai Banking Corporation Limited	17.04	18.95	28.90	21.63	1
Bank of China (Hong Kong) Limited	9.26	12.79	14.62	12.22	5
Hang Seng Bank, Limited	10.34	12.56	21.95	14.95	2
Stardard Chartered Bank (Hong Kong) Limited	3.25	3.14	3.13	3.17	12
Bank of East Asia, Limited	15.50	13.46	14.38	14.45	3
DBS Bank (Hong Kong) Limited	-4.33	0.79	-2.52	-2.02	16
Industrial and Commercial Bank of China (Asia) Limited	15.68	11.05	15.06	13.93	4
Wing Hang Bank, Limited	4.38	6.27	3.37	4.67	9
Dah Sing Bank Limited	1.40	2.50	2.14	2.01	13
Nan Yang Commercial Bank, Limited	4.23	5.83	6.56	5.54	6
CITI Ka Wah Bank, Limited	-3.77	-1.34	-88.44	-31.18	23
Wing Lung Bank, Limited	4.06	6.92	4.94	5.31	7
Shanghai Commercial Bank Limited	3.03	4.21	5.56	4.27	10
Chong Hing Bank Limited	-2.12	-3.83	-9.27	-5.07	19
FuBon Bank (Hong Kong) Limited	-22.72	-18.22	-16.61	-19.18	21
China Construction Bank (Asia) Cororation Limited	0.87	0.62	-0.05	0.48	15
Chi Yu Banking Corporation Limited	3.36	5.22	7.11	5.23	8
Bank of Communications Corporation Limited	-7.03	-1.86	2.46	-2.14	18
Tai Yau Bank Limited	3.50	3.29	4.97	3.92	11
Tai Sang Bank Limited	3.16	0.69	0.10	1.32	14
Mevas Bank Limited	-22.31	-36.43	-4.68	-21.14	22
Public Bank (Hong Kong) Limited	-7.37	-1.24	-16.36	-8.32	20
Standard Bank Asia Limited	-0.93	0.72	-6.20	-2.14	17
Maximum	17.04	18.95	28.90	21.63	
Minimum	-22.72	-36.43	-88.44	-31.18	
Median	3.16	3.14	3.13	3.17	
Average	1.24	2.00	-0.39	0.95	
Standard Deviation	10.00	11.21	22.04	12.20	

Table 4-5: Efficiency of interest management from 2005 through 2007

Bank Name	Efficiency of interest management (%)				
	2005	2006	2007	Average	Rank
Hong Kong & Shanghai Banking Corporation Limited	1.78	1.98	2.03	1.93	6
Bank of China (Hong Kong) Limited	2.16	2.25	2.10	2.17	1
Hang Seng Bank, Limited	1.91	1.75	1.97	1.88	7
Stardard Chartered Bank (Hong Kong) Limited	1.86	2.13	1.95	1.98	4
Bank of East Asia, Limited	1.57	1.65	1.52	1.58	14
DBS Bank (Hong Kong) Limited	1.63	1.82	1.76	1.74	10
Industrial and Commercial Bank of China (Asia) Limited	1.14	1.27	1.24	1.22	20
Wing Hang Bank, Limited	1.66	1.74	1.73	1.71	11
Dah Sing Bank Limited	1.59	2.04	1.83	1.82	8
Nan Yang Commercial Bank, Limited	1.59	1.70	1.82	1.70	12
CITI Ka Wah Bank, Limited	1.35	1.18	1.26	1.26	18
Wing Lung Bank, Limited	2.86	1.65	1.60	2.04	3
Shanghai Commercial Bank Limited	2.08	1.97	1.88	1.98	5
Chong Hing Bank Limited	1.51	1.31	1.41	1.41	16
FuBon Bank (Hong Kong) Limited	1.01	1.31	1.41	1.24	19
China Construction Bank (Asia) Cororation Limited	2.02	2.03	2.28	2.11	2
Chi Yu Banking Corporation Limited	1.63	1.62	1.57	1.61	13
Bank of Communications Corporation Limited	1.83	1.15	2.25	1.74	9
Tai Yau Bank Limited	1.57	1.57	1.18	1.44	15
Tai Sang Bank Limited	1.18	1.16	1.26	1.20	21
Mevas Bank Limited	1.00	1.17	1.40	1.19	22
Public Bank (Hong Kong) Limited	1.48	1.50	1.05	1.34	17
Standard Bank Asia Limited	0.76	0.72	0.96	0.81	23
Maximum	2.86	2.25	2.28	2.17	
Minimum	0.76	0.72	0.96	0.81	
Median	1.59	1.65	1.60	1.70	
Average	1.62	1.59	1.63	1.61	
Standard Deviation	0.45	0.39	0.38	0.36	

Table 4-6: Efficiency of non-interest management from 2005 through 2007

| Bank Name | Efficiency of non-interest management (%) | | | | |
	2005	2006	2007	Average	Rank
Hong Kong & Shanghai Banking Corporation Limited	1.11	1.23	1.62	1.32	3
Bank of China (Hong Kong) Limited	1.72	1.71	1.77	1.73	2
Hang Seng Bank, Limited	0.69	0.95	1.52	1.05	5
Stardard Chartered Bank (Hong Kong) Limited	1.22	1.21	1.38	1.27	4
Bank of East Asia, Limited	0.89	1.04	0.66	0.86	9
DBS Bank (Hong Kong) Limited	0.23	0.21	0.71	0.38	19
Industrial and Commercial Bank of China (Asia) Limited	2.20	2.32	2.92	2.48	1
Wing Hang Bank, Limited	0.65	0.70	0.83	0.73	12
Dah Sing Bank Limited	0.82	1.00	0.80	0.87	8
Nan Yang Commercial Bank, Limited	0.54	0.14	0.18	0.29	23
CITI Ka Wah Bank, Limited	0.35	0.23	0.41	0.33	22
Wing Lung Bank, Limited	0.36	0.69	0.74	0.60	15
Shanghai Commercial Bank Limited	0.58	0.37	0.81	0.59	16
Chong Hing Bank Limited	0.56	0.62	0.96	0.71	13
FuBon Bank (Hong Kong) Limited	0.51	0.70	1.03	0.75	11
China Construction Bank (Asia) Cororation Limited	0.78	0.85	1.42	1.02	6
Chi Yu Banking Corporation Limited	0.36	0.17	0.47	0.33	21
Bank of Communications Corporation Limited	0.28	0.33	0.61	0.41	18
Tai Yau Bank Limited	0.74	0.77	1.17	0.89	7
Tai Sang Bank Limited	0.53	0.62	0.98	0.71	14
Mevas Bank Limited	0.35	0.49	0.66	0.50	17
Public Bank (Hong Kong) Limited	0.15	0.11	0.78	0.35	20
Standard Bank Asia Limited	0.66	0.74	0.99	0.80	10
Maximum	2.20	2.32	2.92	2.48	
Minimum	0.15	0.11	0.18	0.29	
Median	0.58	0.70	0.83	0.73	
Average	0.71	0.75	1.02	0.82	
Standard Deviation	0.48	0.53	0.57	0.51	

Table 4-7: Cost efficiency ratio from 2005 through 2007

Bank Name	Cost efficiency ratio (%)				
	2005	2006	2007	Average	Rank
Hong Kong & Shanghai Banking Corporation Limited	49.90	57.20	66.40	57.83	3
Bank of China (Hong Kong) Limited	33.20	35.30	69.70	46.07	10
Hang Seng Bank, Limited	51.70	50.70	63.00	55.13	4
Stardard Chartered Bank (Hong Kong) Limited	42.40	42.70	44.00	43.03	13
Bank of East Asia, Limited	54.40	45.00	51.40	50.27	8
DBS Bank (Hong Kong) Limited	48.40	43.70	45.30	45.80	11
Industrial and Commercial Bank of China (Asia) Limited	42.30	35.50	43.30	40.37	14
Wing Hang Bank, Limited	37.30	36.40	39.20	37.63	17
Dah Sing Bank Limited	44.50	42.10	77.40	54.67	6
Nan Yang Commercial Bank, Limited	30.00	27.00	26.60	27.87	21
CITI Ka Wah Bank, Limited	55.40	48.10	92.40	65.30	2
Wing Lung Bank, Limited	33.80	32.30	49.20	38.43	16
Shanghai Commercial Bank Limited	31.50	29.50	27.00	29.33	20
Chong Hing Bank Limited	48.90	50.60	63.40	54.30	7
FuBon Bank (Hong Kong) Limited	73.60	61.10	64.50	66.40	1
China Construction Bank (Asia) Cororation Limited	46.10	42.20	43.20	43.83	12
Chi Yu Banking Corporation Limited	28.80	24.70	22.90	25.47	23
Bank of Communications Corporation Limited	51.70	50.70	62.00	54.80	5
Tai Yau Bank Limited	28.10	34.30	77.30	46.57	9
Tai Sang Bank Limited	32.02	30.78	28.52	30.44	19
Mevas Bank Limited	41.20	41.40	37.10	39.90	15
Public Bank (Hong Kong) Limited	28.00	29.00	26.60	27.87	21
Standard Bank Asia Limited	27.60	31.40	42.70	33.90	18
Maximum	73.60	61.10	92.40	66.40	
Minimum	27.60	24.70	22.90	25.47	
Median	42.30	41.40	45.30	43.83	
Average	41.77	40.07	50.57	44.14	
Standard Deviation	11.65	9.88	19.01	11.92	

Table 4-8: Number of members in the board of directors from 2005 through 2007

Bank Name	2005	2006	2007	Average	Rank
			BOD size		
Hong Kong & Shanghai Banking Corporation Limited	18	19	19	18.67	2
Bank of China (Hong Kong) Limited	13	13	14	13.33	16
Hang Seng Bank, Limited	19	18	19	18.67	2
Stardard Chartered Bank (Hong Kong) Limited	15	15	16	15.33	8
Bank of East Asia, Limited	17	17	19	17.67	5
DBS Bank (Hong Kong) Limited	12	12	12	12.00	18
Industrial and Commercial Bank of China (Asia) Limited	13	14	15	14.00	13
Wing Hang Bank, Limited	12	11	11	11.33	20
Dah Sing Bank Limited	15	15	13	14.33	11
Nan Yang Commercial Bank, Limited	10	10	14	11.33	20
CITI Ka Wah Bank, Limited	11	12	12	11.67	19
Wing Lung Bank, Limited	14	13	14	13.67	15
Shanghai Commercial Bank Limited	15	16	15	15.33	8
Chong Hing Bank Limited	19	19	20	19.33	1
FuBon Bank (Hong Kong) Limited	10	10	10	10.00	23
China Construction Bank (Asia) Cororation Limited	14	14	14	14.00	13
Chi Yu Banking Corporation Limited	14	14	15	14.33	11
Bank of Communications Corporation Limited	9	9	13	10.33	22
Tai Yau Bank Limited	13	13	13	13.00	17
Tai Sang Bank Limited	17	17	17	17.00	6
Mevas Bank Limited	15	15	15	15.00	10
Public Bank (Hong Kong) Limited	19	18	18	18.33	4
Standard Bank Asia Limited	18	15	18	17.00	6
Maximum	19.00	19.00	20.00	19.33	
Minimum	9.00	9.00	10.00	10.00	
Median	14.00	14.00	15.00	14.33	
Average	14.43	14.30	15.04	14.59	
Standard Deviation	3.03	2.88	2.79	2.81	

Table 4-9: The level of related party loans from 2005 through 2007

Bank Name	Level of related party loans (%)				
	2005	2006	2007	Average	Rank
Hong Kong & Shanghai Banking Corporation Limited	0.05	0.04	0.03	0.04	4
Bank of China (Hong Kong) Limited	0.03	0.21	0.65	0.30	17
Hang Seng Bank, Limited	0.03	0.03	0.02	0.03	2
Stardard Chartered Bank (Hong Kong) Limited	0.05	0.07	0.11	0.08	5
Bank of East Asia, Limited	3.92	4.94	6.76	5.21	23
DBS Bank (Hong Kong) Limited	0.16	0.10	0.07	0.11	6
Industrial and Commercial Bank of China (Asia) Limited	0.16	0.10	0.07	0.11	6
Wing Hang Bank, Limited	4.27	4.27	2.51	3.68	22
Dah Sing Bank Limited	0.53	0.54	0.65	0.57	18
Nan Yang Commercial Bank, Limited	0.16	0.10	0.07	0.11	6
CITI Ka Wah Bank, Limited	0.16	0.10	0.07	0.11	6
Wing Lung Bank, Limited	0.04	0.03	0.02	0.03	3
Shanghai Commercial Bank Limited	1.39	1.22	1.14	1.25	20
Chong Hing Bank Limited	1.72	1.50	1.36	1.53	21
FuBon Bank (Hong Kong) Limited	0.79	0.79	0.78	0.79	19
China Construction Bank (Asia) Cororation Limited	0.16	0.10	0.07	0.11	6
Chi Yu Banking Corporation Limited	0.15	0.18	0.17	0.17	16
Bank of Communications Corporation Limited	0.05	0.18	0.15	0.13	15
Tai Yau Bank Limited	0.16	0.10	0.07	0.11	6
Tai Sang Bank Limited	0.16	0.10	0.07	0.11	6
Mevas Bank Limited	0.16	0.10	0.07	0.11	6
Public Bank (Hong Kong) Limited	0.02	0.01	0.01	0.01	1
Standard Bank Asia Limited	0.16	0.10	0.07	0.11	6
Maximum	4.27	4.94	6.76	5.21	
Minimum	0.02	0.01	0.01	0.01	
Median	0.16	0.10	0.07	0.11	
Average	0.63	0.65	0.65	0.64	
Standard Deviation	1.18	1.31	1.46	1.28	

Table 4-10: The level of market share of debt from 2005 through 2007

Bank Name	Market share of Debt (%)				
	2005	2006	2007	Average	Rank
Hong Kong & Shanghai Banking Corporation Limited	37.14	38.53	40.04	38.57	1
Bank of China (Hong Kong) Limited	19.50	20.90	20.39	20.26	2
Hang Seng Bank, Limited	15.18	15.37	16.08	15.54	3
Stardard Chartered Bank (Hong Kong) Limited	4.13	4.90	4.60	4.54	4
Bank of East Asia, Limited	2.52	2.10	2.18	2.27	7
DBS Bank (Hong Kong) Limited	2.02	1.63	1.50	1.72	9
Industrial and Commercial Bank of China (Asia) Limited	3.20	2.58	2.44	2.74	5
Wing Hang Bank, Limited	1.61	1.75	1.60	1.65	10
Dah Sing Bank Limited	2.27	2.61	2.06	2.31	6
Nan Yang Commercial Bank, Limited	1.25	1.06	0.94	1.08	14
CITI Ka Wah Bank, Limited	1.92	1.20	1.43	1.52	11
Wing Lung Bank, Limited	0.81	0.80	0.85	0.82	16
Shanghai Commercial Bank Limited	1.33	1.15	1.04	1.17	13
Chong Hing Bank Limited	1.89	1.41	1.02	1.44	12
FuBon Bank (Hong Kong) Limited	1.07	0.70	1.11	0.96	15
China Construction Bank (Asia) Cororation Limited	2.19	1.72	1.31	1.74	8
Chi Yu Banking Corporation Limited	0.56	0.48	0.36	0.47	17
Bank of Communications Corporation Limited	0.37	0.22	0.31	0.30	19
Tai Yau Bank Limited	0.14	0.19	0.14	0.16	21
Tai Sang Bank Limited	0.11	0.07	0.05	0.08	23
Mevas Bank Limited	0.12	0.09	0.07	0.09	22
Public Bank (Hong Kong) Limited	0.27	0.24	0.18	0.23	20
Standard Bank Asia Limited	0.38	0.30	0.29	0.32	18
Maximum	37.14	38.53	40.04	38.57	
Minimum	0.11	0.07	0.05	0.08	
Median	1.61	1.20	1.11	1.44	
Average	4.35	4.35	4.35	4.35	
Standard Deviation	8.58	9.00	9.28	8.95	

Table 4-11: Size (assets) of the bank from 2005 through 2007

Bank Name	Bank size (%)				
	2005	2006	2007	Average	Rank
Hong Kong & Shanghai Banking Corporation Limited	46.72	47.38	49.14	47.75	1
Bank of China (Hong Kong) Limited	14.53	13.97	13.28	13.93	2
Hang Seng Bank, Limited	10.15	10.06	9.28	9.83	3
Stardard Chartered Bank (Hong Kong) Limited	5.89	5.88	5.99	5.92	4
Bank of East Asia, Limited	4.17	4.42	4.90	4.50	5
DBS Bank (Hong Kong) Limited	3.15	2.97	2.90	3.01	6
Industrial and Commercial Bank of China (Asia) Limited	2.02	2.20	2.39	2.20	7
Wing Hang Bank, Limited	1.82	1.84	1.74	1.80	8
Dah Sing Bank Limited	1.53	1.50	1.41	1.48	10
Nan Yang Commercial Bank, Limited	1.66	1.47	1.54	1.56	9
CITI Ka Wah Bank, Limited	1.43	1.35	1.38	1.39	11
Wing Lung Bank, Limited	1.31	1.28	1.16	1.25	13
Shanghai Commercial Bank Limited	1.41	1.41	1.34	1.39	11
Chong Hing Bank Limited	0.87	0.95	0.86	0.89	14
FuBon Bank (Hong Kong) Limited	0.87	0.80	0.75	0.81	15
China Construction Bank (Asia) Cororation Limited	0.68	0.74	0.46	0.63	16
Chi Yu Banking Corporation Limited	0.55	0.51	0.49	0.52	17
Bank of Communications Corporation Limited	0.56	0.56	0.32	0.48	18
Tai Yau Bank Limited	0.03	0.05	0.07	0.05	22
Tai Sang Bank Limited	0.11	0.10	0.09	0.10	21
Mevas Bank Limited	0.01	0.01	0.01	0.01	23
Public Bank (Hong Kong) Limited	0.28	0.26	0.32	0.29	19
Standard Bank Asia Limited	0.23	0.31	0.21	0.25	20
Maximum	46.72	47.38	49.14	47.75	
Minimum	0.01	0.01	0.01	0.01	
Median	1.41	1.35	1.34	1.39	
Average	4.35	4.35	4.35	4.35	
Standard Deviation	9.87	9.98	10.29	10.05	

4.3 Mean Equality Analysis

As the results of the statistical analysis, we postulate that listed banks may be advantageous in enhancing the investment opportunities if compared with non-listed banks. This may be due to the reason that listed banks are better positioned to raise the required additional capital through both debt and equity issues. Therefore, the sample was divided into two subgroups: listed banks and non-listed banks. The mean equality analysis was used to examine if there are any difference on business performance between these two subgroups.

Bank performance

According to the results of the mean equality tests from table 4-12, there is a statistically significant difference between listed banks and non-listed banks in terms of both overall and specific parts of business performance. From overall performance, listed banks perform better than non-listed banks regardless of performance assessed on ROA, ROE, or RAROC criteria. The mean value of ROA for listed banks is 1.29%, while for non-listed banks is 0.72%. This shows that listed banks in terms of ROA perform better than non-listed from 2005 through 2007. Moreover, the mean value of ROE for listed banks is 15.61%, which is higher than non-listed banks value of 9.08%. This result shows the performance in terms of ROE for listed banks from 2005 to 2007 is superior compared with non-listed banks. Similarly, the mean value of RAROC for listed banks is 3.83%, compared to -2.80% for non-listed banks, indicating that investors are more confident about the future prospect of the listed banks. All these differences are statistically significant at the 1% level.

On the other hand, the results from table 4-12 show that only the efficiency of non-interest management is statistically significant difference at 1% under the specific parts of business performance category. The mean value of the efficiency of non-interest management for listed banks is 1.06%, while for non-listed banks is 0.52%. This result shows the performance in terms of the efficiency of non-interest management for listed banks from 2005 to 2007 is significantly superior when compared with non-listed banks. Performance difference between listed and non-listed banks based on interest management ratio is significant at the 5% level. However, there is an insignificant

difference between listed and non-listed banks based on the performance of cost efficiency ratio.

Corporate governance

The results of mean equality tests from table 4-13 shows a statistically significant difference between listed banks and non-listed banks in terms of the level of related-party loans; however, there is an insignificant difference between listed and non-listed banks in terms of the size of board of directors. The mean value of the related-party loans for listed banks is 0.20%, while for non-listed banks is 0.99%. This result shows the structure of corporate governance in terms of the level of related-party loans for listed banks appears to be is healthier than for non-listed banks during the period of study.

Controlling variables

Table 4-13 shows a statistically significant difference between listed banks and non-listed banks in terms of market share of debt. The mean value of market share of debt for listed banks is 7.17%, which is significantly higher than the non-listed banks with mean of 0.68%. This result shows listed banks have an advantage on issuing debt securities.

Moreover, table 4-13 shows a statistically significant difference between listed and non-listed banks in terms of the bank size. The mean value of bank size for listed banks is 7.04%, while for non-listed banks is only 0.861%. This result shows that listed banks are may be in a better position to achieve operational and portfolio diversification efficiencies when compared with non-listed banks.

Table 4-12: Mean Equality Test - Performance Ratios

	Variable	Listed banks (Mean)	Non-listed banks (Mean)	T-value
Overall performance	ROA (%)	1.287	0.724	5.318***
	ROE (%)	15.605	9.075	3.904***
	RAROC (%)	3.834	-2.795	3.826***
Specific parts of performance	Efficiency of interest management (%)	1.71	1.487	2.364 **
	Efficiency of non-interest management (%)	1.062	0.517	4.778***
	Cost efficiency ratio (%)	44.790	43.327	0.409

Notes:

1. ***   *indicates statistically significant at 1%,*
   **   *indicates statistically significant at 5%,*
   *   *indicates statistically significant at 10%.*

2. *Listed banks include: Hong Kong & Shanghai Bank, Bank of China, Hang Seng Bank, Stardard Chartered Bank, Bank of East Asia, Industrial and Commercial Bank of China, Wing Hang Bank, Dah Sing Bank, Wing Lung Bank, Chong Hing Bank, Fu Bon Bank, China Construction Bank, and Bank of Communications.*

   Non-listed banks include: DBS Bank, Nan Yang Commercial Bank, CITI Ka Wah Bank, Shanghai Commercial Bank, Chi Yu Bank, Tai Yau Bank, Tai Sang Bank, Mevas Bank, Public Bank, and Standard Bank Asia Limited.

Table 4-13: Mean Equality Test - Corporate governance and controlling variables ratios

	Listed banks (Mean)	Non-listed banks (Mean)	T-value
Corporate Governance			
BOD size	14.667	14.5	0.237
Level of Related-party loans (%)	0.199	0.985	2.587**
Controlling Variable			
Market Share of Debt (%)	7.166	0.684	3.228***
Bank size (%)	7.035	0.855	2.685***

Note:

*** *indicates statistically significant at 1%,*
** *indicates statistically significant at 5%,*
* *indicates statistically significant at 10%.*

4.4 Regression Analysis

In this section, we apply a panel regression model with fixed effects to test the impact of corporate governance on bank performance both overall and for specific parts of business performance. The overall measures of bank performance include ROA, ROE, Market-to-book ratio, and RAROC. The specific parts of business performance include the Efficiency of interest management, Efficiency of non-interest management, and Cost of efficiency ratios. Corporate governance is provided by the size of board of directors and the level of related-party loans. Controlling variables include the level of market share of debt of a bank and the size (assets) of a bank. The results of the panel regression analysis are shown in table 4-14. All models appear to have very good statistical fitness judged by high adjusted R-squared values and highly significant F-ratios. Durbin-Watson values suggest that there are no serial correlation problems.

Overall performance

To investigate the impact of corporate governance and controlling variables on the overall bank performance, we will need to evaluate the influences of corporate governance and controlling variables on ROA and ROE, discuss how the market-to-book ratio of a bank is affected by its corporate governance, and comment on how corporate governance influences the risk management of a bank that in turn affect its performance.

1. The impact of corporate governance and controlling variable on ROA

Table 4-14 shows a one unit (member) increase in the size of board of directors increases the ROA by 0.03 percentage points. The result indicates that, all else constant, a bank will perform better if there is larger number of members in the board of directors within the sample range of board of directors from 9 to 20 members. Thus hypothesis 1, stated in Chapter 3, is supported by the empirical results. It shows that the board of directors must play an important role for the bank's long term performance. This is because the board of directors is a collective of people who are responsible for approving the strategy and business plan of the bank. Therefore, the existence of board of directors is necessary since it will coordinate the conflict between shareholders and managers.

Table 4-14 states that a decrease in the level of related-party loans of 1 percentage point increases the ROA by 0.0046 percentage points. This effect is significant at 5% level. It shows that banks with lower levels of related-party loans perform better on average. This finding corroborates hypothesis 2, stated in Chapter 3. We argue that related-party borrowing may have less restrictions or covenants compared to other types of borrowers. Therefore, higher levels of related-party loans are expected to adversely affect the bank's business performance, because it affects competence and the quality of the loan portfolio. Higher exposure to related-party loans will raise the probability of loan impairment and adversely affect the ROA of banks.

Table 4-14 also shows an increase in the size of banks of 1 percentage point increases the ROA by 0.12 percentage points. Thus hypothesis 3, stated in Chapter 3, is supported. This may because larger banks have better ability to diversify different types of risk from the investments, since they have sufficient capital to improve technology information and diversify their portfolio.

Table 4-14 shows an inverted U-relationship between the level of market share of debt and the ROA. This relationship is supported significantly at 1% level. Thus we find empirical support for hypothesis 4, stated in Chapter 3. Note that the maximum point in the quadratic relationship between the market share of debt and ROA can be calculated by $\partial ROA/\partial Level\ of\ market\ share\ of\ debt = 0$. This occurs at the point where the market share of debt is about 39% (0.1993/0.0051). From table 4-10, we can see that this level corresponds to the market share of debt of Hong Kong & Shanghai Bank. This bank has the best performance on ROA as shown in Table 4-1.

2. The impact of corporate governance and controlling variable on ROE

Table 4-14 shows a one unit (member) increase in the size of board of directors increases the ROE by 0.37 percentage points. This effect is significant at 1% level. It indicates that, all else constant, a bank will perform better if there is larger number of members in the board of directors within the sample range of board of directors. Thus hypothesis 1, stated in Chapter 3, is supported by the empirical results.

Table 4-14 states that a decrease in the level of related-party loans of 1 percentage point increases the ROE by 0.06 percentage points. This effect is significant at 10% showing that banks with lower levels of related-party loans perform better on average. This finding corroborates hypothesis 2, stated in Chapter 3. Moreover, table 4-14 shows the size of banks is positively related to ROE. Thus hypothesis 3, stated in Chapter 3, is supported.

Table 4-14 shows an inverted U-relationship between the level of market share of debt and the ROE of banks. This relationship is supported significantly at 1%. Thus we find empirical support for hypothesis 4, stated in Chapter 3. Note that the maximum in the quadratic relationship between the market share of debt and ROE is occurred at the point where the market share of debt is about 11% (1.3054/0.1143). From table 4-10, we can see that this level corresponds to the market share of debt of Hang Sent Bank. This bank has the best performance on ROE as shown in Table 4-2.

3. *The impact of corporate governance and controlling variable on market-to-book ratio*

Table 4-14 shows a one unit (member) decrease in the size of board of directors increases the market-to-book-ratio by 0.06 percentage points, but this is only significant at the 10% level. Hypothesis 1, stated in Chapter 3, thus not supported[2]. Table 4-14 also shows a negative relationship between the level of related-party loans and the market-to-book ratio. Hypothesis 2, stated in Chapter 3, is supported at 1% significant level from the empirical results. It implies that market perceives more favorably banks that rely less on related-party loans.

Table 4-14 shows that the size (assets) of banks is negatively related to the market-to-book ratio. Thus we found empirical is not supported for hypothesis 3, stated in Chapter 3. Arguably the lack of empirical support for hypothesis 1 discussed above may be interpreted in the partial regression context, i.e. the effect on board size after controlling for bank size. Moreover, table 4-14 shows a U-relationship between the level of market share of debt and the market-to-book ratio. Thus we find empirical is not

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[2] A possible limitation of this study is that we do not control for the number of independent directors on the board. However, empirical evidence (e.g. see Hermalin and Weisbach, 1991) suggests that this distinction may not be empirically important for firm performance.

supported for hypothesis 4, stated in Chapter 3.

4. *The impact of corporate governance and controlling variable on RAROC*

Table 4-14 shows the impacts of corporate governance and controlling variable on RAROC is similar to the results from the ROA and ROE regressions. For instance, the level of related-party should influence the variation of RAROC and this effect should be negative. This is because banks with higher level of related-party loans should increase the amount of loan impairment provisions, since the related-party may not need to provide sufficient security related documentation when borrowing from the bank. Therefore, higher level of related-party loans will increase loan impairments of the bank, which has a negative impact on RAROC.

Specific parts of bank performance

For the specific parts of bank performance, we will describe the influences of corporate governance and controlling variables on the efficiency of interest and non-interest management and discuss the impact of cost efficiency ratio by the corporate governance of the bank.

1. *The impact of corporate governance and controlling variable on the efficiency of interest management*

Table 4-14 shows a one unit (member) increase in the size of board of directors increases the ratio of efficiency of interest management by 0.03 percentage points. This effect is significant at 10% level. It indicates that, all else constant, a bank will perform better if there is larger number of a member within the board of directors within the sample range of board of directors. Thus the hypothesis 1, stated in Chapter 3, is supported by the empirical results.

Table 4-14 states that a decrease in the level of related-party loan of 1 percentage point increases the ratio of efficiency of interest management by 0.007 percentage points. It shows that banks with lower levels of related-party loans perform better on average. This finding corroborates hypothesis 2, stated in Chapter 3. Moreover, Table 4-14 shows the size of banks is positively related to ratio of efficiency of interest management. Thus hypothesis 3, stated in Chapter 3, is supported. The effect is significant at 10% level.

Table 4-14 shows an inverted U-relationship between the level of market share of debt and the ratio of efficiency of interest management of banks. This relationship is supported significantly at 1% level. Thus we find empirical support for hypothesis 4, stated in Chapter 3. Note that the maximum in the quadratic relationship between the market share of debt and the ratio of efficiency of interest management is occurred at the point where the market share of debt is about 23% (0.2888/0.0129). This indicates that the level of market share of debt is negatively related to the market-to-book ratio for banks with lower ($< 23\%$) market share of debt. Hence this finding suggest that only for the largest banks (such as the Hong Kong & Shanghai Bank with $> 23\%$ share of debt) standard agency predictions apply (see hypothesis 4) while for other banks it appears that the agency costs of outside debt become more important from a market perspective than the agency costs of outside equity.

2. *The impact of corporate governance and controlling variable on the efficiency of non-interest management*

Table 4-14 shows a one unit (member) increase in the size of board of directors increases the ratio of efficiency of non-interest management by 0.1 percentage points. This effect is significant at 1% level. It shows that, all else constant, a bank will perform better if there is larger number of a member in the board of directors within the sample range of board of directors. Thus the hypothesis 1, stated in Chapter 3, is supported by the empirical results.

Table 4-14 states that an increase in the level of related-party loan of 1 percentage point increases the ratio of efficiency of non-interest management by 0.001 percentage points. It shows that banks with higher levels of related-party loans perform better on average. Thus hypothesis 2, stated in Chapter 3, is violated. Moreover, table 4-14 shows the size of banks is positively related to ratio of efficiency of non-interest management. Thus hypothesis 3, stated in Chapter 3, is supported.

Table 4-14 shows an inverted U-relationship between the level of market share of debt and the ratio of efficiency of non-interest management. Thus we find empirical support for hypothesis 4, stated in Chapter 3. Note that the maximum in the quadratic relationship between the market share of debt and the ratio of efficiency of non-interest

management is occurred at the point where the market share of debt is about 24% (0.2334/0.0097). From table 4-10, we can see that this level corresponds to the market share of debt of Bank of China. This bank is one of the best five performances on the efficiency of non-interest management as as shown in Table 4-6.

3. *The impact of corporate governance and controlling variable on the cost efficiency ratio*

Table 4-14 shows a one unit (member) increase in the size of board of directors increases the cost efficiency ratio by 0.45 percentage points. This indicates that, all else constant, a bank will perform better if there is larger number of members in the board of directors within the sample range of board of directors. Thus hypothesis 1, stated in Chapter 3, is supported by the empirical results.

Table 4-14 states that a decrease in the level of related-party loans of 1 percentage point increases the cost efficiency ratio by 0.16 percentage points. This effect is significant at 5%. It shows that banks with lower levels of related-party loans perform better on average. This finding corroborates hypothesis 2, stated in Chapter 3. Moreover, table 4-14 shows the size of banks is positively related to the cost efficiency ratio. Thus hypothesis 3, stated in Chapter 3, is supported.

Table 4-14 shows an inverted U-relationship between the level of market share of debt and the cost efficiency ratio. This relationship is supported significantly at 1%. Thus we find empirical support for hypothesis 4, stated in Chapter 3. Note that the maximum in the quadratic relationship between the market share of debt and the cost efficiency ratio is occurred at the point where the market share of debt is about 33% (6.3810/0.195). From table 4-10, we can see that this level corresponds to the market share of debt of Hong Kong & Shanghai Bank. This bank is one of the best five performances on the cost efficiency ratio as shown in Table 4-7.

4.5 Summary

This section summarizes the key findings of the empirical analysis with reference to the testable hypotheses outlined in Chapter 3.

1. Listed banks perform better than non-listed banks

The results of mean equality tests indicate that there is a statistically significant difference between listed banks and non-listed banks for both overall and specifics part of business performance. From overall performance, listed banks perform better than non-listed banks regardless of the performance on ROA, ROE, or RAROC. However, the significant difference between listed banks and non-listed banks only appear in terms of the efficiency of non-interest management from the specifics part of business performance.

The results for corporate governance indicate that listed banks perform better than non-listed banks in terms of the level of related-party loans. However, there is no significant difference between listed banks and non-listed banks in terms of the size of board of directors. The results for controlling variables indicate that listed banks perform better than non-listed banks in terms of the market share of debt and bank size.

2. Corporate governance policy effects on bank performance

The results of fixed effects panel regressions provide in general empirical support for all hypotheses (1, 2, 3, and 4), stated in Chapter 3, from the overall performance and the specific parts of business performance.

Table 4-14: Impact of corporate governance on bank performance: The Fixed effects model of panel estimates 2005 - 2007

Bank Performance	Overall performance				Specific parts of business performance		
	ROA	ROE	Market-to-Book ratio	RAROC	Efficiency of interest management	Efficiency of non-interest management	Cost efficiency ratio
Constant	-0.4637	2.0690	4.8936***	-20.7713***	-0.5079	-1.9063***	-8.9127
Corporate Governance							
BOD size	0.0283	0.3736***	-0.0613*	0.2684**	0.0274*	0.0967***	0.4459
Related-party loans	-0.0046**	-0.0564*	-0.0171***	-0.1096*	-0.0075	0.0011	-0.1587**
Controlling Variable							
Bank size	0.1215	1.2723	-0.358	3.2459***	0.2659*	0.2779	4.3441**
Market Share of Debt	0.1993***	1.3054***	-0.1708	3.0011***	0.2888***	0.2334	6.3810***
$\frac{1}{2}(Market\ Share\ of\ Debt)^2$	-0.0051**	-0.1143***	0.0118*	-0.1278***	-0.0129***	-0.0097*	-0.1951***
F-statistic	92.6361***	132.8362***	12.4099***	164.2830***	46.5433***	58.7055***	20.0904***
Adjusted R-squared	0.9733	0.9813	0.8362	0.9848	0.9476	0.9582	0.8835
Durbin-Watson stat	2.7813	2.9717	2.9698	2.6601	2.4534	2.6539	2.3609

Note:

*** *indicates statistically significant at 1%,*
** *indicates statistically significant at 5%,*
* *indicates statistically significant at 10%.*

CHAPTER 5: CONCLUSION AND RECEMMENDATION

5.1 Introduction

This section summarizes the main findings and provides some recommendations for banks operation in the Hong Kong banking industry.

5.2 Comments on research questions

1. Corporate governance policy is important to bank performance

This study has found that banks with larger size of board of directors and with a lower level of related-party loans tend to perform well. This finding illustrates the importance of corporate governance for bank performance. Arguably, the level of related-party loans is a key consideration for constructing an optimal corporate governance policy in order to achieve best practice in the Hong Kong banking industry. High levels of related-party lending may signal to the market that the corporate governance policy of the bank is not healthy. This will adversely affect the reputation of the bank and damage its performance.

2. Size affects the level of bank performance

The result of panel regression shows that the size of banks is positively related to bank performance, indicating that the larger bank, the better its performance will be. This is because large banks have better ability to diversify different types of risk from the investments, since they have sufficient capital to improve technology information and employ a better management team.

5.3 Other findings

The empirical results of this study showed that listed banks performed better than non-listed banks. Therefore, listed banks may be at a competitive advantage in comparison to non-listed banks. However, we find that the level of related-party loans is

high in some listed banks. For example, the Bank of East Asia held 6.76% of total loans as related-party loans in 2007. This potentially creates substantial credit risks and reduces the reputation of the bank. Our analysis suggests that banks must pay attention to monitor the level of related-party loans at sustainable rates.

From another aspect of corporate governance policy, this study found that banks perform well with a low level of related-party loans and high level of market share of debt. This shows that these arrangements are important for successful corporate governance policy both in terms of controlling agency costs of outside debt and equity. This is important since competition in the Hong Kong banking industry is very strong.

REFERENCES

Allen, L. and Cebenoyan, A. S. (1991). Bank acquisitions and ownership structure: theory and evidence. *Journal of Banking and Finance*. 15, pp. 425-48

Berger, A. N. and Bonaccorsi di Patti, E., (2006), Capital structure and firm performance: A new approach to testing agency theory and an application to the banking industry. *Journal of Banking and Finance*, 30(4), pp. 1065-1102

Berle, A., Means G (1932). *The Modern Corporation and Private Property*. New York, MacMillan.

Capital adequacy ratio, Retrieved May 7, 2009, from Wikipedia, the free encyclopedia. Website: http://en.wikipedia.org/wiki/Capital_adequacy_ratio

Carse, D. (2000). *Speech: The importance of corporate governance in banks.* Retrieved May 7, 2009, from The Year 2000 Millennium Dinner of The Association of International Accountants – Hong Kong Branch, Hong Kong Bankers Club, Hong Kong. Website: http://www.info.gov.hk/hkma/eng/speeches/speechs/david/20000317.htm

Cordeiro, J. J. and Veliyath R. (2003), Beyond Pay for Performance: A Panel study of the Determinants of CEO Compensation. *American Business Review*, 21(1), pp. 56-56.

Denis, D. K. (2001). Twenty-Five Years of Corporate Governance Research and Counting. *Review of Financial Economics*. 10(3): 191-212.

Dharwadkar, R., G. George, & Brandes, P. (2000). Privitization in emerging economies: An agency perspective. *Academy of Management Review*. 25(3): 650-669.

EViews 5 User's Guide. (2004). *EViews 5 User's Guide.* Quantitative Micro Software, LLC.

Fama, E. F. and M. C. Jensen (1983). Separation of ownership and control. J*ournal of Law and Economics*. 26(2): 301-326.

Hermalin B. E. and M. S. Weisbach (1991). The effects of board composition and Financial Management. 20, 101-112.

Hong Kong Monetary Authority (HKMA). (2000). *Guideline on Corporate Governance of Locally Incorporated Authorised Institutions*. January 2000.

Hong Kong Trade Development Council, (2007), *Economic and Trade Information on Hong Kong*, February 2007.

Jensen, M.C. (1986). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers, *The American Economic Review*, 76, 659-665.

Jensen, M. C. and W. Meckling (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*. 3: 305-360.

Jensen, M. C. and R. S. Ruback (1983). The Market for Corporate Control: The Scientific Evidence. *Journal of Financial Economics*. 11(104): 5-51.

Kesner, I. F. (1987). Directors' Stock Ownership and Organizational Performance: An Investigation of Fortune 500 Companies. *Journal of Management* 13(3): 499-509.

Klein, P., Shapiro D., and Young J., 2004. Corporate governance, family ownership and firm value: the Canadian evidence. *Simon Fraser University. Working Paper*.

Ma, F. (2005) *Secretary for Financial Services and Treasury of Hong Kong Special Administrative Region*.

Morck R., Shleifer A., & Vishny R. W. (1988). Management Ownership and Market Valuation: An Empirical analysis. *Journal of Financial Economics*, 20(1-2): 293-316.

Nam, I. C., Kang, Y., and Kim, J. K. (1999). Comparative Corporate Governance Trends in Asia. *Paper presented at the Conference on Corporate Governance In Asia: A Comparative Perspective, First Asian Corporate Governance Roundtable Meeting, Seol, Korea*, 3-5 March.

OECD (1997). *The impact of insititutional investors on OECD financial markets.* Financial Market trends No 68.

Prokopczuk M., Rachev S. and Truck S. (2004). Quantifying risk in the electricity business: A RAROC-based approach. *Journal Energy Economics*. 29 (5): 1033-1049

Risk adjusted return on capital, Retrieved May 7, 2009, from Wikipedia, the free encyclopedia. Website: http://en.wikipedia.org/wiki/Risk_adjusted_return_on_capital

Saunders, A. and Cornett, M. M. (2005). *Financial Markets and Institutions: An introduction to the risk management approach*. Boston, Mass: McGraw-Hill/Irwin.

Shleifer, A. and R. Vishney (1986). Large shareholders and corporate control. *Journal of Political Economy*. 94: 461-488.

Stanwick, P. A., and Stanwick, S. D. (2005). Managing Stakeholder interest in turbulent times: A study of corporate governance of Canadian firms. *Journal of American Academy of Business Cambridge*, Vol. 7 Iss. 2: 42.

Tsui, J., and Gul, F.A., (2000), Corporate Governance and Financial Transparencies in the Hong Kong Special Administration Region of The People's Republic of China. *The Second Asian Roundtable on Corporate Governance*. May 31 – June, 2000

Appendix

1. Mean Equality Tests

Bank Performance – ROA

Test for Equality of Means Between Series
Date: 05/23/09   Time: 18:15
Sample: 1 39
Included observations: 39

Method	df	Value	Probability
t-test	67	5.318476	0.0000
Anova F-statistic	(1, 67)	28.28619	0.0000

Category Statistics

Cariable	Count	Mean	Std. Dev.	Std. Err. of Mean
ROA_LISTED	39	1.286923	0.456261	0.073060
ROA_NONLISTED	30	0.723500	0.408498	0.074581
All	69	1.041957	0.516388	0.062166

Bank Performance – ROE

Test for Equality of Means Between Series

Date: 05/23/09   Time: 18:20

Sample: 1 39

Included observations: 39

Method	df	Value	Probability
t-test	67	3.904475	0.0002
Anova F-statistic	(1, 67)	15.24492	0.0002

Category Statistics

Variable	Count	Mean	Std. Dev.	Std. Err. of Mean
ROE_LISTED	39	15.60487	8.662798	1.387158
ROE_NONLISTED	30	9.074700	3.353800	0.612317
All	69	12.76567	7.574090	0.911813

Bank Performance - RAROC

Test for Equality of Means Between Series

Date: 05/23/09   Time: 18:22

Sample: 1 39

Included observations: 39

Method	df	Value	Probability
t-test	67	3.825851	0.0004
Anova F-statistic	(1, 67)	3.333734	0.0723

Category Statistics

Variable	Count	Mean	Std. Dev.	Std. Err. of Mean
RAROC_LISTED	39	3.834034	10.57108	1.692727
RAROC_NONLISTED	30	-2.794750	19.23355	3.511549
All	69	0.951954	15.20422	1.830373

Bank Performance - Efficiency of interest management

Test for Equality of Means Between Series
Date: 05/23/09   Time: 18:23
Sample: 1 39
Included observations: 39

Method	df	Value	Probability
t-test	67	2.363570	0.0210
Anova F-statistic	(1, 67)	5.586462	0.0210

Category Statistics

Variable	Count	Mean	Std. Dev.	Std. Err. of Mean
EFF_INT_LISTED	39	1.709744	0.372315	0.059618
EFF_INT_NONLISTED	30	1.487333	0.406507	0.074218
All	69	1.613043	0.400339	0.048195

Bank Performance - Efficiency of non-interest management

Test for Equality of Means Between Series
Date: 05/23/09   Time: 18:27
Sample: 1 39
Included observations: 39

Method	df	Value	Probability
t-test	67	4.778091	0.0000
Anova F-statistic	(1, 67)	22.83015	0.0000

Category Statistics

Variable	Count	Mean	Std. Dev.	Std. Err. of Mean
EFF_NON_INT_LISTED	39	1.061538	0.572288	0.091639
EFF_NON_INT_NONLISTED	30	0.516667	0.283346	0.051732
All	69	0.824638	0.539716	0.064974

Bank Performance - Cost efficiency ratio

Test for Equality of Means Between Series

Date: 05/23/09   Time: 18:29

Sample: 1 39

Included observations: 39

Method	df	Value	Probability
t-test	67	0.409035	0.6838
Anova F-statistic	(1, 67)	0.167310	0.6838

Category Statistics

Variable	Count	Mean	Std. Dev.	Std. Err. of Mean
COST_EFF_LISTED	39	44.79026	12.18566	1.951268
COST_EFF_NONLISTED	30	43.32667	17.52130	3.198936
All	69	44.15391	14.64373	1.762898

Corporate Governance – Board of directors

Test for Equality of Means Between Series

Date: 05/23/09   Time: 18:30

Sample: 1 39

Included observations: 39

Method	df	Value	Probability
t-test	67	0.236931	0.8134
Anova F-statistic	(1, 67)	0.056136	0.8134

Category Statistics

Variable	Count	Mean	Std. Dev.	Std. Err. of Mean
BOD_LISTED	39	14.66667	3.156725	0.505481
BOD_NONLISTED	30	14.50000	2.515469	0.459260
All	69	14.59420	2.876471	0.346286

Corporate Governance – the level of related-party loans

Test for Equality of Means Between Series

Date: 05/23/09   Time: 18:31

Sample: 1 39

Included observations: 39

Method	df	Value	Probability
t-test	67	2.586866	0.0119
Anova F-statistic	(1, 67)	6.691878	0.0119

Category Statistics

Variable	Count	Mean	Std. Dev.	Std. Err. of Mean
RELATED_PARTY_LISTED	39	0.199000	0.361170	0.065940
RELATED_PARTY_NONLISTED	30	0.984872	1.630844	0.261144
All	69	0.643188	1.302271	0.156775

Controlling variables – the level of market share of debt

Test for Equality of Means Between Series

Date: 05/23/09   Time: 18:32

Sample: 1 39

Included observations: 39

Method	df	Value	Probability
t-test	67	3.228317	0.0019
Anova F-statistic	(1, 67)	10.42203	0.0019

Category Statistics

Variable	Count	Mean	Std. Dev.	Std. Err. of Mean
MARKET_DEBT_LISTED	39	7.165641	10.96517	1.755833
MARKET_DEBT_NONLISTED	30	0.683667	0.620247	0.113241
All	69	4.347391	8.822208	1.062069

Controlling variables – bank size

Test for Equality of Means Between Series

Date: 05/23/09   Time: 18:33

Sample: 1 39

Included observations: 39

Method	df	Value	Probability
t-test	67	2.685238	0.0091
Anova F-statistic	(1, 67)	7.210503	0.0091

Category Statistics

Variable	Count	Mean	Std. Dev.	Std. Err. of Mean
SIZE_LISTED	39	7.035385	12.55829	2.010936
SIZE_NONLISTED	30	0.855000	0.934720	0.170656
All	69	4.348261	9.901006	1.191941

2. Panel Regression Analysis with fixed effects

The impact of corporate governance on ROA

Dependent Variable: ROA

Method: Panel EGLS (Cross-section weights)

Date: 05/28/09   Time: 19:55

Sample: 2005 2007

Cross-sections included: 23

Total panel (balanced) observations: 69

Linear estimation after one-step weighting matrix

Period weights (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BOD	0.028308	0.018648	1.517978	0.1367
RELATED_PARTY	-0.004586	0.001742	-2.632084	0.0119
MARKET_DEBT	0.199250	0.057117	3.488456	0.0012
0.5*MARKET_DEBT^2	-0.005128	0.002248	-2.280994	0.0278
SIZE	0.121468	0.092310	1.315872	0.1955
C	-0.463674	0.361285	-1.283404	0.2066

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

R-squared	0.983872	Mean dependent var	2.449258
Adjusted R-squared	0.973251	S.D. dependent var	2.393150
S.E. of regression	0.211464	Sum squared resid	1.833406
F-statistic	92.63609	Durbin-Watson stat	2.781261
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.983359	Mean dependent var	1.057536
Sum squared resid	1.891700	Durbin-Watson stat	2.438672

The impact of corporate governance on ROE

Dependent Variable: ROE

Method: Panel EGLS (Cross-section weights)

Date: 05/28/09   Time: 19:57

Sample: 2005 2007

Cross-sections included: 23

Total panel (balanced) observations: 69

Linear estimation after one-step weighting matrix

Period weights (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BOD	0.373551	0.115963	3.221297	0.0025
RELATED_PARTY	-0.056405	0.032776	-1.720901	0.0928
MARKET_DEBT	1.305441	0.394582	3.308412	0.0020
0.5*MARKET_DEBT^2	-0.114261	0.029689	-3.848649	0.0004
SIZE	1.272349	1.033737	1.230826	0.2254
C	2.068991	3.248366	0.636933	0.5277

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

R-squared	0.988698	Mean dependent var	25.02775
Adjusted R-squared	0.981255	S.D. dependent var	19.72402
S.E. of regression	1.993318	Sum squared resid	162.9060
F-statistic	132.8362	Durbin-Watson stat	2.971675
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.987185	Mean dependent var	12.76609
Sum squared resid	184.7083	Durbin-Watson stat	2.439448

The impact of corporate governance on Market-to-Book ratio

Dependent Variable: M_B

Method: Panel EGLS (Cross-section weights)

Date: 05/28/09   Time: 19:58

Sample: 2005 2007

Cross-sections included: 13

Total panel (balanced) observations: 39

Linear estimation after one-step weighting matrix

Period weights (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BOD	-0.061263	0.034544	-1.773484	0.0907
RELATED_PARTY	-0.017102	0.004076	-4.195674	0.0004
MARKET_DEBT	-0.170753	0.128054	-1.333446	0.1967
0.5*MARKET_DEBT^2	0.011780	0.006266	1.880103	0.0740
SIZE	-0.358124	0.250853	-1.427627	0.1681
C	4.893641	0.878011	5.573554	0.0000

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

R-squared	0.909470	Mean dependent var	2.848412
Adjusted R-squared	0.836184	S.D. dependent var	4.778514
S.E. of regression	0.287658	Sum squared resid	1.737696
F-statistic	12.40988	Durbin-Watson stat	2.969783
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.894240	Mean dependent var	1.065897
Sum squared resid	2.030034	Durbin-Watson stat	2.731495

The impact of corporate governance on RAROC

Dependent Variable: RAROC

Method: Panel EGLS (Cross-section weights)

Date: 05/28/09   Time: 19:59

Sample: 2005 2007

Cross-sections included: 23

Total panel (balanced) observations: 69

Linear estimation after one-step weighting matrix

Period weights (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BOD	0.268355	0.111454	2.407768	0.0206
RELATED_PARTY	-0.109604	0.059454	-1.843503	0.0725
MARKET_DEBT	3.001057	0.689911	4.349917	0.0001
0.5*MARKET_DEBT^2	-0.127757	0.031740	-4.025121	0.0002
SIZE	3.245874	0.733654	4.424256	0.0001
C	-20.77134	3.402883	-6.104040	0.0000

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

R-squared	0.990841	Mean dependent var	11.99835
Adjusted R-squared	0.984810	S.D. dependent var	26.85382
S.E. of regression	2.101251	Sum squared resid	181.0254
F-statistic	164.2830	Durbin-Watson stat	2.660109
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.989000	Mean dependent var	3.230580
Sum squared resid	217.4249	Durbin-Watson stat	2.285459

The impact of corporate governance on Efficiency of interest management

Dependent Variable: EFF_INT

Method: Panel EGLS (Cross-section weights)

Date: 05/28/09   Time: 20:00

Sample: 2005 2007

Cross-sections included: 23

Total panel (balanced) observations: 69

Linear estimation after one-step weighting matrix

Period weights (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BOD	0.027435	0.014144	1.939681	0.0593
RELATED_PARTY	-0.007470	0.004753	-1.571586	0.1237
MARKET_DEBT	0.288808	0.047887	6.031043	0.0000
0.5*MARKET_DEBT^2	-0.012850	0.003190	-4.027956	0.0002
SIZE	0.265896	0.132365	2.008819	0.0512
C	-0.507946	0.488255	-1.040329	0.3043

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

R-squared	0.968405	Mean dependent var	3.703383
Adjusted R-squared	0.947598	S.D. dependent var	5.635689
S.E. of regression	0.195910	Sum squared resid	1.573618
F-statistic	46.54332	Durbin-Watson stat	2.453410
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.963491	Mean dependent var	1.623333
Sum squared resid	1.818334	Durbin-Watson stat	1.982687

The impact of corporate governance on Efficiency of non-interest management

Dependent Variable: EFF_NON_INT

Method: Panel EGLS (Cross-section weights)

Date: 05/28/09   Time: 20:00

Sample: 2005 2007

Cross-sections included: 23

Total panel (balanced) observations: 69

Linear estimation after one-step weighting matrix

Period weights (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BOD	0.096671	0.023106	4.183871	0.0001
RELATED_PARTY	0.001063	0.004509	0.235871	0.8147
MARKET_DEBT	0.233378	0.144917	1.610429	0.1150
0.5*MARKET_DEBT^2	-0.009665	0.005471	-1.766687	0.0847
SIZE	0.277940	0.193801	1.434148	0.1591
C	-1.906340	0.629752	-3.027127	0.0043

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

R-squared	0.974785	Mean dependent var	2.382695
Adjusted R-squared	0.958181	S.D. dependent var	3.494980
S.E. of regression	0.477807	Sum squared resid	9.360279
F-statistic	58.70549	Durbin-Watson stat	2.653938
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.970426	Mean dependent var	1.272029
Sum squared resid	10.97868	Durbin-Watson stat	2.165779

The impact of corporate governance on Cost efficiency

Dependent Variable: COST_EFF

Method: Panel EGLS (Cross-section weights)

Date: 05/28/09   Time: 20:01

Sample: 2005 2007

Cross-sections included: 23

Total panel (balanced) observations: 69

Linear estimation after one-step weighting matrix

Period weights (PCSE) standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BOD	0.445914	0.459992	0.969396	0.3380
RELATED_PARTY	-0.158737	0.062211	-2.551605	0.0145
MARKET_DEBT	6.380967	1.044653	6.108215	0.0000
0.5*MARKET_DEBT^2	-0.195146	0.064938	-3.005114	0.0045
SIZE	4.344113	1.722443	2.522065	0.0156
C	-8.912726	7.236686	-1.231603	0.2251

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

R-squared	0.929727	Mean dependent var	73.48974
Adjusted R-squared	0.883450	S.D. dependent var	47.33428
S.E. of regression	6.131399	Sum squared resid	1541.356
F-statistic	20.09044	Durbin-Watson stat	2.360865
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.924260	Mean dependent var	33.48174
Sum squared resid	1661.269	Durbin-Watson stat	2.024866