

# Corporate Governance and Firm Valuations: Evidence from Hong Kong

Name: Lei, Adrian Cheuk Hung  
Address: School of Economics and Finance,  
The University of Hong Kong, Hong Kong  
Contact Number: (852) 9210-5439  
Fax Number: (852) 2713-4232  
Email: adrianlei@gmail.com

Name: Song, Frank M.  
Address: School of Economics and Finance,  
The University of Hong Kong, Hong Kong  
Contact Number: (852) 2857-8507  
Fax Number: (852) 2548-1152  
Email: fmsong@econ.hku.hk

**Send correspondence to:** Lei Adrian Cheuk Hung, School of Economics and Finance,  
the University of Hong Kong, Pokfulam Road, Hong Kong. Phone: +852 92105439.  
Fax: +852 27113638. Email: adrianlei@gmail.com

# Corporate Governance and Firm Valuations: Evidence from Hong Kong

## ABSTRACT

Do corporate governance standards affect firm value? Are shareholders in emerging markets willing to pay a premium for higher governance standards? We construct a corporate governance index to represent Hong Kong corporate governance standards and rank listed companies according to the index. Our model has 17 variables covering five governance mechanisms: board structure, executive compensation, ownership structure, executives' conflict of interest, and transparency standards. We compare and analyze the special characteristics of H Shares, Red Chips, and family controlled companies among listed companies. Our results indicate that these areas significantly impact firm value, and Hong Kong investors are willing to pay substantial premium for better governance standards. We find that firms with better rating in our CG model have higher firm value, which implies that firms can increase their valuations by restructuring their corporate governance standards according to our model.

**Keywords:** Corporate governance, market for corporate control, ownership, market valuation.

**JEL Classification:** G34, G32

## Table of Content

- 1 Introduction
- 2 Corporate Governance Mechanisms Overview
  - 2.1 Agency Problem
  - 2.2 Executive Compensation
  - 2.3 Board Structure
  - 2.4 Corporate Control
  - 2.5 Financial Transparency and Disclosure
  - 2.6 Corporate Governance and Market Value
- 3 Formulation of Corporate Governance Indices and CG Score
  - 3.1 The Structure of HK stock market
  - 3.2 Sources and Scope of Data
  - 3.3 Structure and Definition of CG variables and sub-indices
  - 3.4 Index Formation: Factor Analysis
  - 3.5 Construction of overall CG index
  - 3.6 Empirical Model
- 4 Comparative Analysis of HK listed companies by types and characteristics
  - 4.1 Full Sample Summary Statistics
  - 4.2 Mainland China Companies: H Shares and Red Chips
  - 4.3 Family-controlled Companies
- 5 Empirical Results on Valuations, CG Indices and CG Score
  - 5.1 Board Structure Index
  - 5.2 Executive Compensation Index
  - 5.3 Ownership Structure Index
  - 5.4 Conflict of Interest Index
  - 5.5 Transparency Standard Index
  - 5.6 Classifying firms into 4 grades: better grades with higher firm value
- 6 Concluding Remarks

## 1 Introduction

Do firms' corporate governance standards affect firm market value? Are shareholders in Hong Kong willing to pay a premium for higher governance standards? How is this premium compared to other emerging markets? The recent well-known corporate scandal cases, such as Enron, World-Com and Gold-Face Hold in Hong Kong, triggered awareness of corporate governance in Asia.

Corporate Governance (CG) is a set of mechanisms to make sure management maximizes shareholders value, and to avoid moral hazards of the management. Moral hazards can be defined as actions by management that benefit themselves but destroy investors' value. According to Shleifer and Vishny (1997), corporate governance deals with how the financial supplier assures the corporate will pay them reasonable return of their investment.

The separation of ownership and control of a company creates numerous interesting topics for researchers in economics and finance. (Jensen and Merkling 1976, Fama 1980, Williamson 1988, Hansen and Lott 1996, Shleifer and Vishny 1997, etc.) How can the investor assure the managers work the hardest to make the best use of their investments? Managers may have an objective to maximize their private benefits at the expense of the shareholders and other stakeholders. The main goals of corporate governance are to assure managers work for the best interests of shareholders and to make sure that the controlling shareholders do not exploit other shareholders and stakeholders.

How do large shareholders affect firm value? The distinctive ownership structure of Hong Kong family based and concentrated shareholdings enables detailed study in this issue. According to Holderness (2003), insiders hold approximately 20% of randomly selected listed firms in United States. However, our data indicates insider

hold 51.5% of stakes in the top 100 listed companies of Hong Kong. The concentrated ownership structure suggests that large shareholders in Hong Kong may be able to extract more private benefits from individual investors and creditors. Most of the top 100 listed companies are family based or group based. From our database summary statistics, 25 of 100 highest market value companies are controlled by ten big families. Substantial shareholder's family relationships severely weaken external force to monitoring of the firms. Therefore, internal governance mechanisms are critical towards corporate governance in Hong Kong. In spite of this, little has been done to establish an overall corporate governance framework for Hong Kong.

Conflict between large shareholders and minority shareholders is a new perspective of corporate governance, where the large shareholders 'tunnels' company's value into their own pocket. Tunneling, as defined in Johnson *et al.*(2000), refers the phenomenon that controlling shareholders transferring assets and values out of firms to benefit themselves. The controlling shareholders transfer assets of the firm stealthily through some "underground" tunnel. This tends to happen in poor legal enforcement countries like Czech Republic (Johnson *et al.* 2000), India (Bertrand *et al.* 2002) and Korea (Bae *et al.* 2002 and Sung 2003). For example, Bae *et al.*(2002) note that Samsung SDS of Korea sold 3.21 million shares of its bonds with warrant to the family of the firm controller, at price per share of 7150 won while OTC market were trading at 55000 won per share. It is interesting to examine if tunneling exist in Hong Kong? La Porta *et al.* (1999) report that Hong Kong corporations are predominantly controlled by families, which are vulnerable to tunneling activities, is worthwhile for further investigation.

The major areas of internal corporate governance mechanisms in Hong Kong are board structure, executive compensation, ownership structure, conflict of interest in

executives, and financial transparency. Based on these five areas, we will construct a general model representing overall corporate governance of Hong Kong and rank the listed company of Hong Kong. Accordingly, we will proceed to further in-depth investigation of board structure, ownership structure, executive compensation and conflict of interest of the board, compare and contrast different types of listed companies – Hong Kong based companies, mainland based H-shares and Red-Chips, and family controlled companies.

The Asian financial crisis and recent corporate scandals triggered extensive research of corporate governance in Asia. CLSA (2001) conducts a general corporate governance survey of Asia, and finds that better governed firms have higher performance. Patel *et al.*(2002) of Standard and Poor's develop a model to measure Transparency and Disclosure of firms in emerging markets. Gompers *et al.* (2003) formulate a Governance index to proxy the shareholders right in the US during 1990s. They find that US firms with better shareholders right have higher firm value, sales growth and profits. La Porta *et al.* (1999) provide an overall study of control structure, including Hong Kong. Based on their research, Claessens *et al.* (2000) undertake a broad survey of Asia corporate ownership structure. They report that older firms are generally family controlled, and significant wealth of East Asia is concentrated in few families. The Hong Kong Exchange and Clearing Limited (HKEx) strives to improve corporate governance standards of Hong Kong Listed Companies, and their research center frequently publishes surveys and reports. They have conducted Primary Market Survey of 1998 and 2002, with which they have studied corporate governance of listed companies from the the perspective of investment banks, fund managers and listed companies themselves. 32% of investment bankers and 28% of fund managers considered corporate governance of Main Board Companies as good, while 30% and

38% respectively considered it poor. 40% of the listed companies considered themselves kept good corporate governance standards while 20% replied negatively, which mildly improve from the 1998 surveys that record 38% positive feedback and 18% negative feedback. To our best knowledge, our study is the first research to construct a scoring system for Hong Kong corporate governance. The result should contribute in further researches of corporate governance in emerging markets, enhancing corporate governance of Asia.

## **2 Corporate Governance Mechanisms Overview**

### **2.1 Agency problem**

Berle and Means(1932) is the first to examine separation of ownership and control – the root of agency problem. Fama(1980) describes agency problem as manager has an incentive to consume more perquisites than previously agreed. If management incentives are properly aligned with the shareholder's interest, there will be less agency problem. The costs of Agency problem, as defined by Jensen and Meckling(1976), is the sum of expenditures of monitoring and bonding, and the residual loss. In order to reduce agency costs, management are monitored internally and/or externally. Internal monitoring will be performed by shareholders and creditors, while external force will be the possibility of takeover and product market competition. There are various proposals to ease the agency problem. John and Senbet (1998) suggest that companies with debt contracts are monitored with clearer guidance, since debt reduce agency costs as debt contracts have better delineated rights for law enforcement. Abowd and Kaplan(1999) point out that agency theory

predicts stock related compensation will align executive and shareholder interests because the payoffs to these two parties are better linked. In this perspective, Haugen and Senbet(1981) suggest the use of convertible bonds and managerial stock options to increase executives' incentives to increase firm value. This method has been widely adopted by technology companies, generating vast incentives through high growth and capital gains. A study of Singapore companies stock option plans by Ding and Sun (2001) indicate that investors view these plans positively, featured by rise of stock prices after announcement of Executive Stock Option Plan (ESOP). They argue that investors perceived management incentives are better aligned with the shareholder's objectives after the adoption of ESOP. However, ESOP do not always act positively towards shareholder's value. Johnson and Tian (2000) examine nontraditional stock option schemes and finds that some options lead to stronger incentives to increase stock price, but increase risk-taking activities, and reduce dividend yield.

## 2.2 Executive Compensation

To align management incentives with firm objectives, appropriate compensation package is the major catalyst. Normally compensations are divided into four categories – basic, bonus, stocks and options, and other long term benefits such as pensions. Probably the most well known research on executive compensation in the 1990s is Jensen and Murphy(1990). They estimate that CEO wealth changed \$3.25 per \$1000 change in shareholder's wealth. This implies insufficient pay-performance sensitivity related compensation, hindering management objective to maximize shareholder's wealth. In a similar approach, a range of studies examine the linkage



between compensation and firm performance. Brunello(2001) *et. al.*, focus on management team instead of only the CEO. They report that Italy has a low pay-performance sensitivity compared to foreign countries, and where mid-to-high level management increased 31 thousands lire per 1 billion lire increase in firm's real profit.

The cost of firm executive compensation is estimated by creating a hedge portfolio that matches the cash flows of the executive compensation portfolio. Abowd and Kaplan (1999) report that in 1996, the value of long-term components in the S&P 500 companies' compensation portfolio are significantly higher than the short-term components. Although the value of long-term components is elevated, does it really help to align management incentives with the long-term objective of shareholders? Abowd and Kaplan (1999) argue that such long-term components in the executive compensation scheme may not be attractive in the perspective of executives, and they would be willing to exchange these long-term components into lower value short-term rewards. They estimated that there are 1.8% increase in total compensation per 1% increase in compensation risk, which imply that the management are willing to forgo approximately half of the value in the long-term components for low risk short-term reward.

It is very difficult to measure the effectiveness of executive compensation; one major reason is the toughness to match executive payoffs with stock price or company performance. A common view is that there are insignificant relationship between executive compensation and stock prices. However, Hall and Liebman (1998) use a recent 15-year panel data set of US listed stocks and find strong relationship of firm performance and CEO remuneration. This view contrast with common views on compensation and stock price relationship, particularly with the arguments of Jensen

and Murphy (1990), which states that there are lack of pay-performance sensitivity in compensation packages. This radical difference may be due to the structural changes in compensation packages during the 80s that shift to the use of stock options extensively, while Jensen and Murphy (1990) examined a data set of proxy statements from 1969 to 1983. Between 1980 and 1994, Hall and Liebman (1998) report that CEO compensation and pay-performance sensitivity had strongly increased. They show that the CEO direct compensation has increased 136% in real terms, and the median elasticity of CEO compensation with respect to market value increased from 1.2 to 3.9. They explain the difference of their research with Jensen and Murphy (1990) is mainly due to the inclusion of growth in value of stocks and stock options in the period of analysis.

Another perspective of executive compensation researches is the effect of executive compensation on stock market returns. Research difficulty will be similar to the effectiveness of executive compensation scheme, because stock returns are embedded with shareholders expectations. Prior researches generally uses stock market reactions or performance to relate with the effect of incentive plans, but the expectation component in stock prices forbids testing for optimal compensation system. Abowd and Kaplan (1999) review that unintended effects may come along with incentive plans, especially when there are caps or floors in the compensation skills. They note that prior researches show that when the manager is operating above the upper bound, they tend to reduce earnings of the company, but not vice versa. If the unintended effect is taken out, there can be more positive effect of compensation scheme, and this opens new directions for incentive planning research.

A recent literature survey by Murphy (1999) reports that United States executives are the highest paid in the world in 1997, with Hong Kong third in the world. In US,

data are readily available for research purpose and it has been extensively studied. Latest trend focuses on other countries, especially the rarely studied emerging markets. The current literature can be enriched by investigating Hong Kong executive compensation structure, which has a high level of executive compensation and unique firm characteristics.

### 2.3 Board Structure

The board of directors is the bridge between shareholders and management, which plays a vital role in corporate governance. They are elected by the shareholders to be their representatives to monitor company operations, strategy, and other significant transactions. However, they are still agents with their own motives different from shareholders, therefore, incentives to the board of directors are important towards their monitoring performance. To generate incentives for directors, appropriate compensations such as stocks or stock options may be necessary. Main *et al.* (1996) analyze board emoluments in Britain, and report that executive share option schemes enhance performance. In contrast, Vafeas (2000) report that incentive plans of directors and operating performance has no significant relationship.

In Hong Kong, it is common that chairman of the board of directors is also CEO of the company. This may create a self-monitoring situation which will impair the monitoring role of the board. Palmon and Wald (2002) finds that it is beneficial for small firms to have CEO/Chairman duality, but large firms need the check and balance effect from the separation of CEO and chairman position. The composition of the board may influence firm's operating performance. Prevost *et al.* (2002) find that board composition and firm performance positively impact each other. They discover

that proportion of outsiders is positively related to board size and is negatively related to future growth. Eisenberg *et al.* (1998) report a negative relationship between board size and profitability of small and midsize firms in Finland. These two studies suggest that large board size may hinder firm performance. The number of outside directors in a board is also a concern in board composition, because outsiders can be additional monitoring devices. In contrast, insiders can provide experience and expertise which can support the firm's operation while more exposed to potential self-dealing and share price manipulation problems.

## 2.4 Corporate control

Vast amount of literature are based on the market for corporate control, such as Manne(1965), Shleifer and Vishny(1986), Barclay and Holderness(1991) and Bebchuk(1994), though not much has been done in minority shareholders perspective. Barclay and Holderness(1989) show that premiums are paid for the control of a company, which leads to both pecuniary and non-pecuniary private benefits. Zingales(1995) analyzes the value of corporate votes in United States. Shleifer and Vishny (1986) demonstrate theoretically the difference in the value of large and small shareholders.

### 2.4.1 Role of large shareholders

Legal system of a country plays an important role in protecting small equity investors. However, even for well established legal system, sometimes the cost for enforcing law is prohibitive for small investors, and relying on legal protection is too passive for small investors. Shleifer and Vishny (1997) recommend equity investors to

form groups for more effective control, preferably over 51% so that the group can have absolute control in voting situations. Yet, in practice it is very difficult for shareholders to form groups, especially for individual investors. The above suggestion is only applicable to institutions such as banks and mutual funds, which hold substantial minority shares of companies and have a better network to interact with each other.

Being a large shareholder, not necessarily having control over the firm, would still exert more effort to monitor the company relative to smaller investors. The existence of large shareholders in corporate ownership may solve the free-rider problem of monitoring effort. Shleifer and Vishny (1986) suggest that monitoring role of a company is performed by large shareholders. Large shareholders are entitled to receive significant cash flows from the company to cover the cost of monitoring and information gathering. Shleifer and Vishny (1986) conduct a brief survey on corporate ownership around the world. In the US, several hundred publicly listed firms have a control shareholder with 51 percent or more shares, but it is relatively dispersed comparing to other countries. In particular, East Asia has corporations typically owned by family and their offspring, such as Cheung Kong Holdings of Hong Kong possessed by Li's family.

#### 2.4.2 The objective of large shareholders

Shleifer and Vishny (1997) propose that legal protection and concentrated ownership are essential for a good corporate governance system. They claim that larger investors have the ability to control the management, and legal protection can avoid explicit expropriation of the investors or minorities by management. However, the situation can be contradictory. In regulation perspective, effective legal protection

can imply more defined regulations. If regulations are vague, then costs of lawsuits will be high. Conversely, setting more regulations and laws hindered flexibility of companies, this in turn lowers companies' profit. It is very difficult to generate the appropriate regulations, therefore internal corporate governance mechanisms play vital role in CG of emerging markets.

From large shareholders perspective, their objective is to maximize their own benefits. Regulations may restrain some moral hazards from management, but controlling shareholders can still expropriate the minorities. Hansen and Lott (1996) analyze the objective of a large shareholder with a diversified portfolio. The controlling shareholder may not have the objective to maximize the company value, but the total portfolio value held by him/her. So if the shareholder has the power to influence the company, he/she will attempt to maximize total portfolio value by controlling major issues of the companies he/she has invested. Minority shareholders will be worse off, because the affected companies did not maximize shareholders' value.

Prior empirical researches provide evidence of concentrated ownership effects on firms. Elston and Goldberg(2003) report that concentrated ownership leads to lower executive compensation. This supports the view that large shareholders exert more effort in monitoring (Shleifer and Vishny (1986)), although there's no conclusion whether it improves the firm's value. What if large shareholders undertake management role? It is interesting to investigate whether firms with blockholders as management pay themselves significantly higher. Holderness(2003) discovers that directors with block shares indeed pay more to themselves than diversely held firms, but in an insignificant amount.

### 2.4.3 Tunneling

There are other ways for controlling shareholders to extract private benefits from a firm, and one recent focus is tunneling. Tunneling, as defined in Johnson *et al.* (2000), refers to the phenomenon that controlling shareholders transferring assets and values out of firms to benefit themselves. The controlling shareholders may take up management, and assets of the firm are transferred stealthily through some “underground” tunnel. This happens in poor legal enforcement countries like Czech Republic (Johnson *et al.* 2000), India (Bertrand *et al.* 2002) and Korea (Bae *et al.* 2002 and Sung 2003). Bae *et al.*(2002) note that Samsung SDS of Korea sold 3.21 million shares of its bonds with warrant to the family of the firm controller, at price per share of 7150 won while OTC market were trading at 55000 won per share. How do we reveal tunneling activities? Bertrand *et al.* (2002) suggest that if controllers transfer values out of low-cash-flow-right firm to high-cash-flow-right firm, then a negative shock for low-cash-flow-right firm will respond with a positive shock of the high-cash-flow-right firm. They tested their hypothesis against Indian business groups and found that tunneling was significant. Bae *et al.* (2002) analyzed mergers and acquisition of Korean companies, and find that the bidding firm had negative announcement return, while the bidding firm’s group had positive announcement return, replicated by holding value-weighted portfolio of the group’s companies. Sung (2003) report that when resources are transferred into a Korean business group, they are often wasted, suggesting the existence of tunneling. Does tunneling exist in other emerging markets such as Hong Kong? La Porta *et al.* report that Hong Kong corporations are predominantly controlled by families. They seem to be vulnerable to tunneling activities, which is worthwhile for further investigation.

## 2.5 Financial Transparency and Disclosure

Patel *et al.* (2002) of Standard & Poor's construct a questionnaire of 98 questions to formulate an index for financial transparency. They divide their questions into three major categories of disclosures: Ownership Structure and Investor Rights, Financial Transparency and Disclosure, Board Structure and Process. Then they search through company annual reports to find out possible attributes to the questions, and use binary basis on each question to create objectivity. They find that Asian emerging market and South Africa have better transparency compared to Middle East, Eastern Europe, and Latin America, but they fail to find significant differences between various economic sectors. It is interesting to investigate whether better transparency and disclosure lead to higher firm valuation. Yet, it is difficult to construct objective measures of financial transparency and disclosure, leaving sparse literature in this area.

## 2.6 Corporate Governance and Market Value

Most literature focus on one aspect of corporate governance and determine their effects on firm value, particularly the relationship of ownership and market value. Hiraki *et al.* (2003), Sung (2003) and Chen (2001) investigate ownership structure and market value in Japan, Korea and China respectively. Brunello *et al.* (2001) analyze executive compensation and firm value in Italy. Few academicians have attempted to link general corporate governance and firm value.

Recently, Gompers *et al.* (2003) have constructed a corporate governance index to evaluate shareholders right at firm level. They find that higher index score gives better return by taking long position of a stock. They construct their corporate



governance index in 5 categories: Delay, Protection, Voting, Other and State. In these categories, there are total 24 governance rules with equal weights in index, such as golden parachutes, blank check and by laws. Although this index is comprehensive on external forces of corporate governance, internal factors, such as boards composition, corporate control and financial transparency, are neglected. Their model may not be applicable to emerging markets with developing legal system, such that an index focusing on internal mechanisms may be more suitable to measure Emerging Markets CG.

Bai, Liu, Lu, Song and Zhang(2004) construct an index to reflect overall level of governance practice for China's listed companies. The categories in their index are board structure, ownership structure, financial transparency, market for corporate control, and legal framework. Their results indicate better corporate governance leads to higher firm value, and Chinese investors are willing to pay a premium for better corporate governance. The unique characteristics of China stock market make it difficult to generalize their findings to other emerging markets. To create a comprehensive index for emerging markets, the above research can be compared with corporate governance research of Hong Kong stock markets, where the stock market of Hong Kong consist of local, China, and international companies, and seemingly with a better legal structure and enforcement. But then, do investors of Hong Kong stock market value corporate governance of firms?

### **3 Formulation of CG Indices and CG Score**

#### **3.1 Brief Structure of HK stock market**

There are two trading platforms in HK securities market - the Main Board and the Growth Enterprise Market (GEM), managed by HKEX. The Main Board is the market for established companies with profitable operating track records. GEM is a new market to provide capital formation opportunities for growth companies, set up in November 1999 to facilitate capital needs of tech companies. The major difference of Main Board and GEM is that Main Board companies must have a track record of at least three years, with profit of HK\$20 million in latest financial year and an aggregate profit of HK\$30 million in latest two financial years. GEM does not have profit record requirement, though companies applying need to have at least 24 months of active business period, with some exceptional cases that shortened the period to 12 months.

Up to December 2004, there are total 1106 tradable equities listed on the main board and secondary board (GEM), 902 and 204 respectively, according to HKEX online database. HKEX defines 25 large cap firms from the 1106 companies, all of these firms are listed on the main board. There are 106 H Shares Company and 84 red chips listed in both main board and GEM. H Share companies are incorporated in Mainland China, and approved by the China Securities Regulatory Commission to be listed in Hong Kong. The letter H stands for Hong Kong. Red chip companies are Mainland controlled companies incorporated outside of Mainland China, which the largest shareholders directly held at least 35% companies' shares, or indirectly through companies controlling these entities.

Listed companies seeking primary listing in Hong Kong, no matter incorporated in or outside of HK, must comply with the Listing Rules, the Codes on Takeovers and Mergers and Share Repurchases issued by Securities and Futures Commission (SFC) of HK, and other applicable ordinances. Therefore, companies incorporated outside HK should be treated equally with HK incorporated companies under regulation laid by the stock exchange.

### 3.2 Sources and Scope of Data

The corporate governance variables and control variable data are extracted from Hong Kong Listed Companies Annual Reports of financial year 2001-2002, details attached in Appendix. We collected the data of all stocks listed on main board of HK. There are 51 newly listed companies and 10 foreign companies in 2002. We excluded newly listed companies in year 2002, because a bias can be created due to the prerequisite of good track record to satisfy listing requirements. We also leave out foreign companies in our database because there are significant differences in the annual report layout compared with the local companies. Accounting data were downloaded from Datastream International 2002, with the complement of annual reports to fill in missing data.

### 3.3 Structure and Definition of CG variables and sub-indices

Detailed variable description can be found in Table 1 of appendix. A summary of index variables in our model can be found in Table 2 of appendix. The following discuss the construction of CG variables according to the five mechanisms.

**Board Structure:** The board structure index consists of three variables. 1) *Percentage of INEDs in the board of directors.* The higher the percentage represents more independence of the board, and the firms are better governed in terms of minority stakeholders' protection. 2) *No CEO/Chairman Duality.* The percentage of CEO/Chairman duality is 56.6% in 2002, indicates that more than half of the board of directors in Hong Kong are not up to foreign independence standards. Therefore, no CEO/Chairman duality may enhance the monitoring role of the board, which will positively affect firm value. 3) *No family members in board.* One of the special characteristics of HK firms are over 43% boards have family members presence in the board. If there are no family members in one board, it may represent the controlling power is not dictated by family groups, which tend to put their family in position instead of the best.

**Executive Compensation:** It contains three variables. 1) *Variable compensation over total compensation.* This ratio represents the pay-sensitivity to the executives of the firms, with higher pay-sensitivity leading to better effort paid by executives. 2) *Base compensation over total compensation.* Basic salary is the fundamental of a compensation package, thus superior basic salary and allowances should be able to attract more competent person to take up the executive position. 3) *If Variable > Base Compensation.* This dummy variable equals 1 if variable compensation is larger than the base compensation. It separate high pay-sensitivity firms from the low pay-sensitivity firms, which we should be able to see an increase in firm value if the company adopt such kind of compensation schemes.

**Ownership Structure:** This area contains five variables. 1) *Percentage of*

*Largest Shareholders.* Shleifer and Vishny (1986) suggest that monitoring role of a company is performed by large shareholders. If the largest shareholder has more stakes in a firm, he or she will be more able and willing to monitor firm's operation. 2) *Percentage of Directors Shareholding.* This variable captures all directors' stockholding of their company. Similar to the previous variable, a higher percentage of stockholdings should enhance the monitoring role, because the directors have more control of the firm. 3) *Largest shareholdings value.* This variable records cash flow to the largest shareholders. Shleifer and Vishny (1986) points out that large shareholder is entitled to receive significant cash flows from the company to cover the cost of monitoring and information gathering. Therefore, the more significant cash flows the shareholders are going to receive from the company, the more effort they will exert to monitor the company. 4) *Directors shareholding value.* The directors should exert more effort to monitor the company if they are entitled substantial cash flows of their company. Note that this variable captures the aggregate amount of shareholding value by all directors. The larger the holdings value should increase the monitoring effectiveness of the board. 5) *Number of Substantial Shareholders.* According to the Securities and Futures Ordinance of Hong Kong Section 336, an interest of 5% (10% before April 2003) or more by shareholders of a company has to be disclosed in the company's annual report. We record the number of substantial shareholders, and the largest shareholder shareholdings. Although there maybe stacks of holding company in the list of substantial shareholders, the ultimate holding company can be tracked so that there are no duplication of substantial shareholders.

**Conflict of Interest:** There are three variables in this category: Conflict of interest in executive directors, conflict of interest in non-executive directors, and conflict of interest in independent non-executive directors. This area is a new CG

mechanism, and is crucial towards firm valuation. The listing rules of HK require directors to disclose their ownership or significant relationship in competing business in the annual report. However, from investors' point of view, conflict can still arise among the related companies which cannot be solved fairly by the directors. If there are no directors engage directly or indirectly in competing businesses, the company will be more independent and act more impartially. This index is expected to increase when there are no directors engaged in competing business.

**Transparency Standards:** There are three variables in this area. 1) *Big4 as auditors*. It is almost a standard procedure for listed company to appoint one of the Big4 as their auditors, yet there are still about 10% of the companies appoint other auditors. Big4 may bring positive effect to firm's reputation in CG and account reporting. 2) *Fully complied with the code of best practice*. There are various codes of best practice around the world, and HK code of best practice is not mandatory. If the company did not fully comply with the code, they have to disclose why they did not. Investors may view positively on firm value if the company fully comply with the code. 3) *Issue ADR in US market*. Firms issue ADR are expected to conform to stricter regulations and accounting standards, therefore investors may pay a slight premium for such firms.

### 3.4 Index Formation: Factor Analysis

How to combine the 17 variables to five indexes? Gompers *et al.* (2003) governance index consist of 24 variables, and all of them are dummy variables. He adds one point to each variable when the variables show an increase towards shareholders right or improve corporate governance, and the index is created by

summing up them. This method creates data that are more transparent and reproducible. CLSA (2001) and Patel(2002) of S&P also apply similar method to arrive an index. In order to objectively form an index, we used factor analysis to form index to condense our variables into various CG internal mechanisms components<sup>1</sup>. We generate one index score for each of the five classifications, so the largest eigenvalue vector will be used to calculate the index score.

### 3.5 Construction of overall CG Index

Prior studies mainly use binary variables to construct CG index. Gompers *et al.* (2003) add 24 binary variables to form an index with a range of 0-24. CLSA (2001) designed a questionnaire consists of 57 binary questions under seven criteria. 16 of these 57 questions are non-subjective, because the data collectors will have to judge independently on these 16 questions. 55 of the 57 questions are equally weighted except two of them<sup>2</sup>. Standards & Poor's research by Patel *et al.* (2002) use 98 questions to develop a transparency & disclosure score. Our corporate governance index is generated by summing up the rankings of all five sub-indices, and normalizes

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<sup>1</sup> The principal factor analysis considers the variability in a variable that is common with other variables Referring to the Stata Reference Manual Release 7, factor analysis finds q common factors that reconstruct the p original variables.

$$y_{ij} = z_{i1}b_{1j} + z_{i2}b_{2j} + \dots + z_{iq}b_{qj} + e_{ij}$$

where

$y_{ij}$  is the value of the  $i$ th observation on the  $j$ th variable,  $z_{ik}$  is the  $i$ th observation on the  $k$ th common factor,  $b_{kj}$  is the set of linear coefficients known as the factor loadings,  $e_{ij}$  is similar to a residual but known as the  $j$ th variable's unique factor. The factors loadings can be examined and interpreted infinite number of ways, as a result factor analysis has been criticized for subjectivity in analysis. However, in this paper, we only used the above model to form index variables from the CG variables we collected. Using the score command in Stata, it creates a new set of variables that are the estimates of the first k factors produced by factor command. According to Stata Reference manual, the formula of regression scoring for the command score is,

$$\hat{f} = \Lambda \Sigma^{-1} x$$

where  $\Lambda$  is the unrotated loading matrix.

<sup>2</sup> These two questions are “whether there has been any controversy over whether the board or senior management has made decisions that favoured them over shareholders.” and “whether any decisions by senior management have been perceived to favour majority shareholders over minorities.”

to 0-100<sup>3</sup>. Therefore, our corporate governance index gives an ordinal comparison between these companies.

### 3.6 Empirical Model

We use Tobin's q to proxy firm value, which has been applied extensively in prior corporate governance researches. (Demsetz and Lehn (1985), Hiraki (2002), Bai *et al* (2004), and Gompers *et al.* (2003)). The regression model is as follows,

$$\begin{aligned} \text{Tobin's } Q = & \alpha_0 + \alpha_1 \text{Board} + \alpha_2 \text{Compensation} + \alpha_3 \text{Conflict} + \alpha_4 \text{Ownership} \\ & + \alpha_5 \text{Transparency} + \phi_1 \text{HShare} + \phi_2 \text{RedChip} + \phi_3 \text{DERatio} + \phi_4 \ln \text{sales} \\ & + \phi_5 \text{Industries...} + \phi_8 \text{Industries} + \varepsilon \end{aligned} \quad (1)$$

Where,

Tobin's Q = (Market Value of Common Stocks + Preferred Stocks + Long - term Debt + Inventories + Current Liabilities - Current Assets) / Total Asset following Chung and Pruitt(1994),

*Board* = Board Structure Index

*Compensation* = Compensation Index

*Conflict* = Conflict of Interest Index

*Ownership* = Ownership Structure Index

*Transparency* = Transparency Standard Index

*HShares* = Dummy variable, equals 1 if company belongs to H Share

*RedChip* = Dummy variable, equals 1 if company belongs to Red Chips

*DERatio* = Total Loan Capital / Total Share Capital

*lnsales* = Natural Log of Total Sales

*Industries* = Dummy variable, equals to 1 if company belongs to respective financial industry

We apply the approximate Tobin's q developed by Chung and Pruitt (1994)

<sup>3</sup> To normalize, we use (CG score – 5)/3370\*100. The five sub-indexes have rankings starts from 1, so we have to deduct 5 from the score. The maximum CG score is 3370.



because it is impractical to calculate the theoretical  $q$ , and the approximated  $q$  produce highly accurate replication of the theoretical  $q$ . HShares and RedChips dummies distinguish major differences between HK and Mainland China related firms. Leverage is controlled by DERatio; Firm size is controlled by natural log of total sales. Differences in industrial characteristics are controlled by industrial dummies<sup>4</sup>.

## **4 Comparative Analysis of HK listed companies by types and characteristics**

### *4.1 Full Sample Summary Statistics*

Full sample summary statistics are available in Table 3 of Appendix. Comparison of different types and characteristics of firms can be found in Table 4 Panel A and B. The following are the analysis of descriptive statistics in various areas.

#### *4.1.1 Firm Valuation*

Tobin's  $q$  and Market to Book Value have median value of 0.4398 and 0.56<sup>5</sup>, indicating the market was probably in a trough. In fact, Hang Seng Index plunged from historical high 18398 points on 28<sup>th</sup> March 2000 to 9231.29 on 31<sup>st</sup> December. However, the absolute value of the Tobin's  $q$  will not affect our analysis on corporate

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<sup>4</sup> Industrial sectors are classified according to the Hong Kong Standard Industrial Classification Version 1.1 by Census and Statistics Department, HKSAR. There are 14 major industrial classifications, and we further group them into five industries because of the relative small sample size of each industry: Construction and Properties; Utilities and Large Cap; Financials, Services, IT, and diversified; and Manufacturing.

<sup>5</sup> Tobin's  $Q$  are calculated according to Chung and Pruitt (1994) approximation formula ((Market Value of Common Stocks + Preferred Stocks + Long-term Debt + Inventories + Current Liabilities – Current Assets)/ Total Assets). The distribution of Tobin's  $Q$  and Market to Book Value are extremely skewed due to some outliers, as the mean is significantly deviated from the median. To continue our analysis, we have to take out cases with outliers. The distribution of the adjusted data approaches to normal distribution after dropping out some of the outlying cases. The causes of these extreme cases are negative shareholder's equity, or unusually low asset value.

governance and valuation, since we analyze data on a relative basis.

Top 100 stocks in MV usually have a much higher liquidity than the rest of the stock market. The market value of Top 100s are more than 2000 million HKD (approx 260 million USD) with the highest 808241 million HKD (approx 100 billion USD). The top 100 market value firms have higher average and median Tobin's Q and Market to Book Value compare to the Full Sample. In contrasts, Small 100 have low Tobin's q (mean = 0.4), and average market value only 39 million HKD.

The following is the descriptive analysis of index variables: board structure, conflict of interest, executive compensation, ownership structure, and transparency and disclosure standards.

#### *4.1.2 Board Structure*

The board structure of Hong Kong listed companies are as follows. The median number of executive director (ED) is 5, non-executive director (NED) is 0, independent non-executive director (INED) is 2, and total number of directors is 8. Note that there is an average of 1 non-executive director in companies, where if a board consists of non-executive directors, usually they employ more than 1 non-executive director.

There is a specific rule governing the structure and appointment of independent directors for listed companies in Hong Kong. In 2002, a board must have at least two independent non-executive directors according to HK listing rules. The median INED is 2, and the mean of INED is about 2.5, implies that most Hong Kong companies, especially the smaller ones, viewed INED as a requirement of regulations rather than enhancement of corporate governance. The percentage of independent directors is

25% of the board, significantly lower than US and European standards. Bhagat and Black (2002) state that the guidelines provided by Council of Institutional Investors in US suggest 2/3 of independent directors in a board of listed companies, that is, “substantial majority” in order to maintain independence of the board of directors. While effect of high percentage of INED on corporate performance is ambiguous, a greater percentage most probably will help to monitor the board and the management in the standpoint of stakeholders and minority shareholders. Following this argument, the listing rules have been amended recently<sup>6</sup>. The new regulation increases the number of INED in each board, and restricts that at least 1 of the INED must have professional qualification. Many of the listed companies have to accommodate to this new regulation since most companies do not have professionally qualified INED. We shall see significant changes in board of directors’ compositions in the coming year. Our future research will track the corresponding effect of such changes on corporate governance and corporate performance of Hong Kong.

CEO/Chairman duality is under major discussion in corporate governance research recently. (Bai, Liu, Lu, Song and Zhang(2004), Griffith *et al* (2002), O’Sullivan (2000)) This issue varies worldwide, one of the common practices is that chairman of the boards and CEO should be separated to enhance internal monitoring mechanism. It is also common in US that the chairman position is undertaken by an independent director. In Hong Kong, CEO/Chairman duality is almost a convention. 94% of the boards have executive director acting as chairman. Unadjusted CEO as

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<sup>6</sup> The following is a quotation from the listing rules of Hong Kong Chapter 3 rule 19: *In respect of all listed issuers whose securities were admitted to listing on or before 31 March, 2004, the following transitional provisions apply:—*

(1) *the listed issuer must have at least one independent non-executive director who has appropriate professional qualifications or accounting or related financial management expertise by 30 September, 2004; and*

(2) *the listed issuer must have at least three independent non-executive directors by 30 September, 2004.*

chairman<sup>7</sup> has an average of 45.88%. We adjust this figure by consider CEO having strong personal relationship with Chairman as CEO/Chairman duality e.g. Husband and wife, Brothers, Sisters. The percentage increased to 56.6%, illustrates that more than half of the board of directors in Hong Kong do not have the ‘independence’ as described by the foreign standards. These figures came with the special characteristics of Hong Kong Listed Companies, since nearly half of the firms have family members presence in board, and more than half of the listed companies are family owned or having a dominant shareholder. Later in our corporate governance model, we have tested whether such ownership and board structure adversely affect firm valuation or not.

There are usually more directors in larger firms than smaller firms. For large firms, there are a median of 3 INEDs in each board, imply that larger firms are taking more initiatives towards a better independent board of directors. Despite, for top 100 firms, average number of family member in board decreased (1.35 to 1.11) , these companies are more aware of concentrated power in CEO/Chairman duality, because CEO as Chairman dropped relatively more than ED as Chairman. The average number of Family in board decreased compared with the full sample summary statistics, though there are still quite a number of family-based large enterprises in the stock market, with well-known figures such as Li Ka Shing, his son Richard Li, Kwok’s Family, Swire Group.

#### *4.1.3 Conflict of Interest*

Disclosure requirements of HK Listing Rules state that if a director has

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<sup>7</sup> Equals 1 if CEO acts as the Chairman

significant interest holdings that will probably affect the benefit of corresponding listed company, they have to disclose in 'Directors' Interests in Competing Business' section in the annual report. As of 31st March, 2002, interests of directors in competing business are required to be disclosed in pursuant to Rule 8.10 of the Listing Rules. Holding shares of other listed or private companies in related industry may trigger the disclosure requirement. There are 14 % ED and 5% NED that have conflict of interest with the listed company they are working with. Although it seems to be a small percentage, it can seriously affect the board independence, hindering their monitoring effectiveness. It is also interesting that there are INEDS having conflict of interest with the company, in contrast, INEDS are supposed to be completely independent to the firm. Nevertheless, there are only few of them so the big picture will not be disrupted.

In top 100 firms, there is significant increase in Conflict of Interest among directors. The mean of the figures are approximately double that of the full sample, indicating that there is more interest in competing business by directors in large firms of HK. Tycoons and large families in Hong Kong hold portfolio of listed companies, which some of these companies in the same industry. This creates lack of independence in the board of directors, as the controlling shareholders themselves are the directors of related companies. Besides, the controlling shareholders can appoint directors who work for their interest. This sets up conditions for tunneling, that is, the transfer of firm's asset to management or large shareholders.

#### *4.1.4 Executive Compensation*

There are large deviations among companies executive compensations, a general idea is that higher market value firm paying higher executive compensation, yet

different industries and types of firms have their specific compensation pattern. More than half of the firms only pay fix compensation to the executive directors, as the median of variable compensation is 0. Only 228 of 691 firms have paid variable compensation to the executive directors in the financial year 2001/2002. For Top 100 firms, they have lower base to variable ratio (1.7:1) compared to the full sample (3.9:1) and Small 100 firms (18:1). These figures suggest that larger firms have management that are better aligned with firm's objective to maximize shareholder's value. The small firms try to increase incentive to management through executive share option plan (ESOP). 91% of small firms use ESOP, while only 69% of Top 100 firms employ it. This may imply low efficiency of ESOP, and we shall test the effectiveness in the perspective of whether it enhances corporate performance in the empirical section.

#### *4.1.5 Ownership Structure*

From Table 3, average directors held 32.9% of listed companies issued shares. If directors hold significant amount of issued shares, their interest should be aligned with shareholder's interest. We will focus on the value of directors' shareholdings, as it represents nominal return which can be quantified. We shall test this implication with our model, whether higher directors' shareholding value will increase firm value or not. Holderness(2003) discovers that directors with block shares pay more to themselves than diversely held firms, but in an insignificant amount, this will be discussed in the next section.

Shleifer and Vishny (1986) report that in US, several hundred publicly listed firms have a controlling shareholder with 51 percent or more shares. In HK, the average largest shareholder in each company hold 45% of the companies issued

shares, implying that most companies has a controlling large shareholders, where they can control voting and major decisions. According to the disclosure of interests in Securities Ordinance, any individual holding a 10% interest or more in a listed company is regarded as a substantial shareholder, which our dataset follow this definition and record substantial shareholders at 10% level. A substantial shareholder is required to inform the market through the Stock Exchange within five days of any transaction resulting in a change of 1 per cent or more of his shareholding in the company. After 1<sup>st</sup> April 2003, the amended rule is to require disclosure of blockholders with 5% of total issued shares, to facilitate higher transparency in ownership structure of HK listed companies. Consequently in future research, it will be able to account the effectiveness of such major changes in disclosure requirements, and whether it improves corporate governance and firm value. The median number of substantial shareholder is 1 and the maximum number of substantial shareholder's is 4. Only 24 of the 691 companies do not have any blockholders at 10% level, for example HSBC, the largest market value firm in HK. There are conflicted views on the effect if there exists controlling shareholders; Shleifer and Vishny (1986) demonstrate the monitoring role of a company is actually performed by large shareholders. Large shareholders are entitled to receive significant cash flows from the company to cover the cost of monitoring and information gathering. Elston and Goldberg(2003) report that concentrated ownership leads to lower executive compensation. This supports the view that large shareholders exert more effort in monitoring, although there's no conclusion whether that improves the firm's value. Tunneling happens in poor legal enforcement countries like Czech Republic (Johnson *et al.* 2000), India (Bertrand *et al.* 2002) and Korea (Bae *et al.* 2002 and Sung 2003), where large shareholders transfer firm assets through an "underground" tunnel. It is

interesting to investigate whether tunneling exist in Hong Kong.

In Top 100, the percentage of issued shares held by directors' drop from 32.8% to 18.9%, while the percentage of issued shares held by largest shareholders increased from 45.5% to 49.3%. The average number of substantial shareholders remains at 1.23 with a slightly higher standard deviation. The most significant change comparing to the full sample, is the median shares held by directors, decreased from 34.8% to 1.1365%. Nevertheless, the value of the shares held by the directors can increase since the market values of these firms are much higher. The higher nominal value of the directors' shareholdings leads to a better alignment of interest and increased the sensitivity to director's total payoff (shares, options, direct compensations).

#### *4.1.6 Transparency and Disclosure Standards*

91% of HK listed companies appoint Big Four as their auditor. Only 2 of the top 100 did not appoint Big Four in 2002 financial year. The reputations of these auditing firms create better affirmation for their annual report. Code of best practice of Hong Kong is not mandatory to listed companies, but they have to disclose matters that do not follow the guidelines. For example, disclosure will be necessary if the appointment of INED did not conform to the code of best practice. For accuracy and simplicity, the variable will be equal to 1 if there is an exceptional item in the code of best practice section, otherwise equal to 0. The statistics show 47% of the firm have exceptional items, we shall further explore this variable to see if there are any significance on corporate governance standards.

There are two ways for HK companies to cross-list in US, either by direct cross-listings or via American Depositary Receipts (ADR). The listing requirements



are basically the same for both types of cross-listings. If non-US companies would like to cross-list in NYSE/Nasdaq, they have to conform to the US GAAP and make appropriate SEC filings. However, US investors can still access the foreign firms that are trading in OTC, which makes those requirements close to voluntary. Our index also record the effect of companies issued American Depositary Receipts<sup>8</sup> (ADR). There are 13.7% of the firms that sells ADR. It is quite common for large companies of HK to issue ADR (mean = 0.51), as large corporate tends to internationalise and try to attract foreign equity investors. It is interesting to see whether the broader market base for share trading increase firm value of Hong Kong.

#### *4.2 Mainland China Companies: H shares and Red Chips*

Table 4 Panel A is a comparison between different types of stocks. There is a huge discount of Tobin's q of H share (mean = 0.37) compared with the full sample (mean = 0.66). The valuation of red chip (Tobin's q mean = 0.67) is at the same level of the Full Sample (mean = 0.66). There are significant differences in the corporate governance standards of H shares with HK stocks. Their executive compensations are extremely low, with no variable compensation or executive stock option plans. The living standard and salary are much lower in China than HK on average, creating such low executive compensations. Despite some of these H shares are worldwide conglomerates, they still follow convention Mainland companies' executive compensations rather than international salary standards.

Furthermore, Red Chips and H Shares have more INEDs (mean = 2.7 and 3.15

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<sup>8</sup> The Bank of New York is the world's largest depository for American Depositary Receipts (ADRs), allow HK companies to offer dollar-denominated securities to investors around the world. Although typically denominated in U.S. dollars, Depositary Receipts can also be denominated in Euros. Depositary Receipts are eligible to trade on all U.S. stock exchanges as well as on many European stock exchanges.

respectively) than Full Sample (mean = 2.52). From the process of data collection, we discover that mostly they employ Hong Kong permanent residents as INED, and many of these INEDs are delegates of CPPCC<sup>9</sup> (Hong Kong Affairs) or NPC<sup>10</sup> (Hong Kong). The board of directors almost do not hold any shares of their own company, which may hinder the alignment of management and shareholders interest. Consequently, the directors do not have conflict of interest, since they do not hold any interest in shares of other companies. They do not have family members in board, since directors are appointed by the PRC government. However, there can be another type of “family” members in board - the government officials and their relatives. In fact, there are some executives that are family members of government officials. Further research on this issue may find additional explanation to their discounted share price.

Red Chips have the lowest mean of CEO/Chairman duality (0.21 or 0.22 (adjusted)). Almost no family members in board, hence the difference of unadjusted and adjusted<sup>11</sup> mean of CEO/Chairman duality is very small. Only 2 out of 67 of the red chip companies have family members in board, which they are two brothers are in each of the companies. Directors do not hold any shares. Then where does the conflict of interest comes from? (Approx. 21% of companies have conflict of interest problem) The directors of Red Chips are often government officials, academics, and there are directors belonging to parents which held multiple subsidiaries with similar business nature. The largest shareholders of Red Chips held on average 54% of company's issued share, which is among the highest of different type of companies, and these

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<sup>9</sup> “CPPCC” is an abbreviation of Chinese People's Political Consultative Conference. It is an important Chinese political organization composed of multi-party cooperation and political consultation.

<sup>10</sup> “NPC” is an abbreviation of National People's Congress

<sup>11</sup> If the CEO and the Chairman have family relationship, it will be considered as existence of CEO as Chairman, and that will be the adjusted CEO as Chairman variable figures. We consider this relationship replicates CEO/Chairman Duality.

ultimate holding companies are parents of multiple subsidiaries that operate in China.

#### 4.3 *Presence of Family Member in Board*

We use the presence of family members in board to proxy family controlled companies, because the family need substantial control in order to inject family members in board. There is almost no family member in boards for H Shares and Red Chips, using this as a yard stick, the chance of having true needs of directors in the same family is very low. Detailed statistics can be found in Table 4 Panel B of appendix. Valuation and Board Structure are similar for both groups (mean = 0.47 and 0.45), but if we adjust<sup>12</sup> the CEO as Chairman variable, the actual CEO/Chairman Duality increase substantially to 69% among this group. The power concentration in the board may hinder the monitoring role of board structure, which the board may only act for the interest of the family group. The percentage of issued shares held by directors of family group (mean = 0.46) is significantly higher than non-family group (mean = 0.23). They have control power in both the boards and the shareholdings, and results are two diverse effects. Shleifer and Vishny (1986) suggest that monitoring role of a company is performed by large shareholders. The concentrated ownership should align the interest of directors with the shareholders. On the other hand, these companies are more vulnerable to tunneling (Johnson *et. al.* (2000)). Empirical results in the next section will analyze these effects on firm value, and what is the perception of market participants.

How about the effect on executive compensation? Holderness (2003) discovers that directors with block shares pay more to themselves than diversely held firms, but

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<sup>12</sup> *Ibid.*

in an insignificant amount. We find similar results, as family in board companies' compensation is slightly higher than no family in board companies<sup>13</sup>, but in a relatively small amount comparing to diversity of executive compensation in our sample.

#### *4.3.1 Top 10 family groups*

33 listed companies are controlled by 10 big families in HK, total market value 933,471 millions HKD (approx 119.7 billion USD). They have significantly higher valuation than other firms in HK (Tobin's q mean = 0.83). Since these firms are much larger in size, they have larger board size and higher percentage in ADR (39%). Our indices indicate there are major differences in their executive compensations and conflict of interest. They have the highest base to variable compensation ratio of 1:1, while the full sample ratio is 3.9:1. Share option scheme are not as common as other listed companies, only 55% companies adopted share option plan. Although director's shareholdings decrease, these shares have an average value of 270.6 billion HKD (approx 34.69 billion USD), that means on average the each board of directors owns 8.2 billion HKD (approx 1.05 billion USD) on 31<sup>st</sup> Dec 2002.

Companies in the top ten family groups appear to have strong fundamentals in CG. However, they exhibit the highest in conflict of interest, with over 50% of the directors have interest in competing business because these families hold a variety of shareholdings and positions across listed and private companies. Policy should be set to prevent tunneling activities among these firms, as they exhibit particular

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<sup>13</sup> The statistics are: Family in Board: Executive Director's Fee (mean = 0.24) Base Compensation (mean = 7.53) Executive Variable Compensation (mean = 2.1). No Family in Board: Executive Director's Fee (mean = 0.31), Base Compensation (mean = 6.14) Executive Variable Compensation (mean = 1.44).

vulnerability to moral hazards. These firms undertake substantial amount of connected transactions, further research in this area may provide direct evidence of tunneling.

## **5 Empirical Results on Valuations with CG Indices and CG Score**

Table 5 in appendix displays the result of our model, which is a linear regression model of the five indices with control variables. Correlations between variables are low, indicates that multi-collinearity problem is not significant in this model. The following is the discussion is based on the results in Table 5.

### *5.1 Board Structure Index*

The board of directors' index is positively significant with firm value. The major concept behind this result is that higher independence increases CG premium. However, a lot of independent directors in Hong Kong are lack of neutrality, because the appointment of independent directors is made by the board of directors, usually controlled by the largest shareholder. Besides, some of the independent directors are not qualified to undertake the position. On 30<sup>th</sup> September 2004, the regulation will be tightened up to require 3 INEDS per board and one of them must have professional financial management or accounting related expertise. Yet, the independence of the directors still has a lot of room for improvement. While Bhagat and Black (2002) suggest that independence did not produce superior firm performance and independence is only the by-product of low profitability, our findings suggest board independence increase firm value.

There is a significant positive effect on firm value if there are no family members

in board. 43.8% of the firms in Hong Kong that are run by families, or by boards that contains 2 or more members that have family relationship. Family members may not be the best person to be in the board of directors, or important positions such as CEO. However, the largest shareholders on average hold 45% stakes of the firm, which mostly enable them to have total control over the firm, including the selection of management and directors. For larger firms, only 31% of companies contain family members, because worldwide conglomerates need expertise to run, leaving lesser room for family members.

Over 50% of the firms in HK exhibit CEO/Chairman duality. This may hinder participation of non-executive directors and outside directors as suggested by O'Sullivan (2000). Our findings suggest avoiding duality may help the firm to induce investors to pay a premium due to better corporate governance.

## *5.2 Executive Compensation Index*

As expected, this index affect positively and significantly the firm value. The ratio of variable compensation and base compensation demonstrates the need for higher pay-performance sensitivity compensation packages. Most of the listed company emphasised on base compensation, especially Red Chips and H Shares, which they only pay fixed and relatively low. The better way to organize a compensation package is to level the base compensation with industry and increase the pay-performance sensitivity through short term and long term bonus. Our results are similar to Hall and Liebman (1998), which use a recent 15-year panel data set of US listed stocks and find strong relationship of firm performance and CEO remuneration. However, due to that the detailed executive compensation scheme of

HK listed companies are publicly unavailable, our results can only analyse the executives directors as a whole instead of just the CEO.

Family members in board predominantly represent concentrated ownership and management by the family. Our finding is that firm with family members in board pay on average 7.5 million HKD in base compensation and 2.1 million HKD in variable compensation, while firms without family members pay on average 6.15 million HKD and 1.44 million HKD in form of base and variable compensations respectively. After running a two tail t test in difference of means, only the base compensation of two groups are significantly different in 5% level. Other variables, such as variable compensations, INED fees and executive director's fee all exhibit insignificant results. These findings considerably support Holderness (2003), which directors with block shares will pay more to themselves than diversely held firms but insignificantly.

Most of the companies employed executive share option scheme, but the effectiveness is in doubt. Some companies merely used share options scheme to satisfy the need for long-term compensation. Note that one of the limitations of our analysis that share option scheme a long term compensation method, our valuation only includes year 2002 Tobin's q, which may not fully account the long term effect for share option scheme. Our further research on corporate governance in HK will involve panel data analysis of yearly data, to facilitate modelling of long term compensation effectiveness.

### *5.3 Ownership Structure Index*

Ownership structure of HK is family based and concentrated. Our result are positive and highly significant, implies that concentrated ownership improves HK

listed companies CG. Note that directors' shareholdings are expressed in terms of their total value instead of percentage. According to Holderness (2003), stock holdings in terms of dollar rather than percentage of total shares can be a better measure of management incentive of a firm. The highly positive figures suggest that the higher value of director's shareholdings, the better the incentive is aligned with firm's interest, and therefore higher firm value. Executives of smaller firms in HK may have a higher shareholding percentage, but it does not lead to better incentive alignment because of the low value of their holdings. It is the nominal value of the director's shareholdings, when the stock price of the firm's increases, boosts the wealth of the director sufficiently to prevent moral hazards from directors and management.

Shleifer and Vishny (1986) reveal that monitoring role of a company is actually performed by large shareholders. Large shareholders are entitled to receive significant cash flows from the company to cover the cost of monitoring and information gathering. Conversely, the problem underlying can be the expropriation of minority shareholders by larger shareholders. The investors of HK companies may fear that large shareholders maximize the value of their own portfolio instead of the listed firm, as discussed in Hansen and Lott (1996). Our regression results of full sample supports Shleifer and Vishny (1986), because the percentage of shares held by largest shareholder are highly positively significant to firm value in HK. Usually one party held the controlling shares of listed firms, and there are few large groups that held multiple listed companies. Furthermore, controlling shareholders are present in most of the companies, therefore, the higher the controlling shareholders stakes in the firm, the more monitoring effort will be exerted to protect their own benefits, because more cash flow of the firm belongs to the controlling shareholders. Minority shareholders can then free ride the effort made by the large shareholders.



#### *5.4 Conflict of Interest Index*

The conflict of interest index is the combination of ED, NED, INED in competing business. It is surprising to see if there are directors disclosed that they have stakes in competing business, firm value are negatively affected considerably. This implies that directors should not have interest in competing business, since such ownership creates ambiguous situations for directors to balance interest between businesses. Investors may perceive that directors can ‘tunnel’ firm asset if they have interest in the same industry. Although there is no direct evidence in tunnelling for HK listed companies, the negative relationship between Conflict of Interest and Tobin’s q suggests that investors adversely select firms with no directors’ conflict of interest. Insiders form the board of directors, INEDs are appointed by the board, and this situation enables tunnelling to materialize easily. Further research of listed companies connected transactions may provide direct evidence of tunnelling activities.

#### *5.5 Transparency Standard Index*

Although the coefficient of Transparency standards is positive, the result is not significant. The possible reason for this finding is that the index did not represent the complete picture of financial transparency. This is one of the major limitations in analyzing transparency, because most of the transparency data are subjective. However, it appears that complying with the code of best practice can demonstrate the firm awareness in governance standards and are committed to raise these standards. In order to unify the collection of data, we have simplified the classification of

exceptions into a yes/no question. The insignificant result may be due to the classification of exceptions are not in detail, and there are some exceptions that will not have material damage to the corporate governance of a firm.

Firm's cross-listing in US through ADR should have a higher standard of corporate governance, and a broader base of investors should lead to higher firm value. Yet, the firm value has not been enhanced significantly. One of the reasons is firms cross-listing in US do not necessarily conform to the US standards if the ADR is traded only in the OTC market. Secondly, the average volume of trades of HK companies in ADR markets are much lower than in HKEX, consequently, the price of HK stocks are not significantly affected.

#### *5.6 Classifying firms into 4 grades: better grades higher firm value*

This section tests the robustness of our results. Firm value varies among firms with similar corporate governance rating by our index. For example, in the list of top 30 CG index ranking, the lowest Tobin's q is 0.24 while the highest is 1.51. In this section we divided our 690 observation into four groups according to their corporate governance index score, grade 1 is the best governed and grade 4 is the poorest. Table displays descriptive statistics of various groups. Mean of Tobin's q in higher grade CG firms are larger than means of lower grade CG firms.

<b>Grade</b>	<b>N</b>	<b>Mean</b>	<b>Std Dev.</b>	<b>Min</b>	<b>Median</b>	<b>Max</b>
1	172	0.73	0.67	0.03	0.54	3.48
2	172	0.71	0.79	0.03	0.44	4.55
3	172	0.60	0.54	0.03	0.44	3.73
4	174	0.59	0.56	0.05	0.39	2.99
<b>Total</b>	<b>690</b>	<b>0.65842</b>	<b>0.650053</b>	<b>0.025458</b>	<b>0.440249</b>	<b>4.546055</b>

To formally test the above results, we performed t tests on the equality of means. The mean of Tobin's q in grade 1 are significantly higher than 3 and 4, and for grade 2 it is marginally higher than grade 3, but significantly higher than grade 4. This analysis further confirms that from our corporate governance model, the better governed firms display higher firm value.

The following table use t tests to assess the equality of means. We test whether mean of Tobin's q of grade J firms is higher than grade I firms.

T	I=2	I=3	I=4
J=1	0.2385	1.9381**	2.144**
J=2		1.4791*	1.6726**
J=3			0.2581

Results show that firms with higher CG grading have higher firm value than firm with lower CG grading. Firms in the first two grades are quite close in firm value, although the median firm value in grade 1 is considerably higher than grade 2.

## 6 Concluding Remarks

We constructed a comprehensive CG index to objectively identify corporate governance of Hong Kong listed companies. Our corporate governance index clearly identifies better governed firms be valued higher. Similar to Bai *et. al.* (2002), our findings indicates HK investors pay a premium for better governed companies. In future research, developing more quantifiable transparency standards measures will help enriching the index, which may add more significance of transparency to firm value.

From the 5 index representing 17 variables, four of them shown significant impact to firm value, they are board structure, executive compensation, conflict of

interest and ownership structure. These index and variables are useful indication to objectively distinguish good and bad CG companies. Particularly, HK investors prefer concentrated ownership structure, which contradicts concepts discussed in Hansen and Lott (1996). As discussed in Shleifer and Vishny (1997), the strong legal environment of HK may prevent large investors to expropriate minorities, so that the gain in enhanced monitoring efficiency outweigh the loss in tunnelling activities by controlling shareholders (Johnson *et.al.*(2000), Bertrand *et. al.* 2002, Bae *et. al.* 2002 and Sung 2003).

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## **Appendix**

### **Table 1: Variables Definition**

<b>Detailed Variable Definitions</b>	
No. of ED	Number of Executive Directors
No. of NED	Number of Non-Executive Directors
No. of INED	Number of Independent Non-Executive Directors
CEO as Chairman (unadjusted)	Equals 1 if there exist the CEO of a company also acts as the Chairman
CEO as Chairman(adjusted)	includes also the case when CEO and Chairman has family relationship
ED as Chairman	Equals 1 if an executive directors acts as the Chairman in the board of directors
No. of Family Members in Board	Equals the total number of ED, NED and INED that has family relationships
Exist Family Members in Board	Equals 1 if there exist family related members in board
Exist ED Conflict of Interest	Equals 1 if there exist executive directors engaging in competing business
Exist NED Conflict of Interest	Equals 1 if there exist Non-Executive Directors engaging in competing business
Exist INED Conflict of Interest	Equals 1 if there exist Independent Non-Executive Directors engaging in competing business
Executive Director's Fee	Total executive director ' s fees stated in the notes of financial statements in annual reports
Executive Base Compensation	Executive directors basic salary, allowances, pensions and other fixed payments stated in the notes of financial statements in annual reports
Executive Variable Compensation	Discretionary bonus and other variable compensation stated in the notes of financial statements in annual reports
Independent Director's Fee	Independent Non-Executive Director ' s Fee
Exist Share Option Scheme	Equals to 1 if there exist share option scheme for executives
% of issued shares held by Directors	Total issued shares held by the board of directors in percentage
% of issued shares held by Largest Shareholder	Total issued shares held by largest shareholder in percentage
No. of Substantial Shareholders	Number of shareholders that holds 10% or more issued shares (5% from 2003 onwards)
Big Four	Equals 1 if the company is audited by Big Four
Code of Best Practice	Equals 1 if there are exceptions in the code of best practice section in the annual report
American Depository Receipts	Equals 1 if there exist ADR of the company trading in US
Tobin's q	= ((Market Value of Common Stocks + Preferred Stocks + Long-term Debt + Inventories + Current Liabilities – Current Assets)/ Total Assets)
MTBV	Market to Book Value downloaded from Datastream
CG Index	defined as the sum of rankings generated from ranking sub-indices (Board Structure, Executive Compensation, Conflict of Interest, Ownership Structure and Transparency Standards)
In(sales)	natural logarithm of main revenue
DE ratio	defined as book value of total loan capital divided by total share capital
Industries	Industrial dummies. Each observations have been assigned a condensed industry category, based on Hong Kong Standard Industrial Classification Version 1.1 by Census and Statistics Department, HKSAR



## Table 2: Summary of Index Variables

Our model consists of the following five indices. Variables are condensed to respective index using factor analysis. These indices are applied in our regression model in the empirical section.

Index	Variables
Board Structure	Percentage of INEDs in board
	No CEO/Chairman Duality
	No family members in board
Executive compensation	Variable Compensation over Total Compensation
	Base Compensation over Total Compensation
	If Variable > Base Compensation
Ownership Structure	Percentage of Largest Shareholder
	Percentage of Directors Shareholding
	Directors Shareholding value
	Largest Shareholding value
	Number of Substantial Shareholders
Conflict of Interest	No conflict of interest in Executive Director
	No conflict of interest in Non-Executive Director
	No conflict of interest in Independent Non Executive Director
Transparency Standards	Big4 as auditor
	fully comply with code of best practice
	Issue ADR in US market

**Table 3: Variables Summary Statistics (Full Sample)**

This table is the descriptive statistics of all CG variables, financial data, and dummy variables. The sample size is 691, and these are companies listed in Main Board of HK. Details of the variables are presented in Table 1.

Variable	N	Mean	Std. Dev.	Min	Median	Max
Tobin's Q	691	0.66	0.65	0.03	0.44	4.55
Market Value	691	4780	36373	0	302	808241
Market to Book Value	667 <sup>14</sup>	1.08	3.14	-18.02	0.56	49.93
No. of ED	691	4.89	2.15	0.00	5.00	15.00
No. of NED	691	1.03	1.72	0.00	0.00	11.00
No. of INED	691	2.52	0.98	0.00	2.00	10.00
Total No. of Directors	691	8.44	3.00	0.00	8.00	21.00
CEO as Chairman (unadjusted)	691	0.46	0.50	0.00	0.00	1.00
CEO as Chairman (adjusted)	691	0.57	0.50	0.00	1.00	1.00
ED as Chairman	691	0.94	0.23	0.00	1.00	1.00
No. of Family Members in Board	691	1.35	1.79	0.00	0.00	10.00
Exist Family Members in Board	691	0.44	0.50	0.00	0.00	1.00
Executive Director's Fee	691	0.28	0.84	0	0.00	12.36
Executive Base Compensation	691	6.75	7.86	0	4.54	95.00
Executive Variable Compensation	691	1.73	9.80	0	0.00	214.00
Independent Director's Fee	691	0.25	0.36	0	0.18	6.49
% of issued shares held by Directors	691	0.33	0.27	0	0.35	0.92
% of issued shares held by Largest Shareholder	691	0.45	0.19	0	0.47	0.90
Exist ED Conflict of Interest	691	0.15	0.35	0.00	0.00	1.00
Exist NED Conflict of Interest	691	0.05	0.21	0.00	0.00	1.00
Exist INED Conflict of Interest	691	0.00	0.07	0.00	0.00	1.00
No. of Substantial Shareholders	691	1.23	0.55	0	1.00	4.00
Big4	691	0.91	0.29	0.00	1.00	1.00
H Shares	691	0.06	0.23	0	0	1
Red Chips	691	0.10	0.30	0	0	1
Code of Best Practice	691	0.47	0.50	0.00	0.00	1.00
ADR	691	0.14	0.34	0.00	0.00	1.00

<sup>14</sup> The data for market to book value are downloaded from datastream with missing data. This variable is a complementary measure to firm valuation.

**Table 4: Variable summary statistics**

**Panel A: Top 100, Small 100, H Shares, Red Chips**

This table is the segmented descriptive statistics of all CG variables, financial data, and dummy variables. The sample size is 691, and these are companies listed in Main Board of HK. Details of the variables are presented in Table 1. Top 100 represents the highest hundred market value companies in HK on 31<sup>st</sup> Dec 2002. Small 100 represents the lowest hundred market value companies in HK on 31<sup>st</sup> Dec 2002.

Summary Statistics of Variables	Full Sample			Top 100			Small 100			H Share			Red Chip		
Variable	N	Mean	Median	N	Mean	Median	N	Mean	Median	N	Mean	Median	N	Mean	Median
Tobin's Q	691	0.66	0.44	100	0.94	0.69	100	0.40	0.24	40	0.37	0.32	67	0.67	0.56
Market to Book Value	667	1.08	0.56	92	1.41	1.03	99	0.41	0.26	38	0.44	0.37	63	0.98	0.79
Market Value	691	4780	302	100	30525	6557	100	39	42	40	2500	949	67	11996	1220
No. of ED	691	4.89	5.00	100	6.34	6.00	100	3.99	4.00	40	6.38	6.50	67	6.49	6.00
No. of NED	691	1.03	0.00	100	2.05	1.00	100	0.60	0.00	40	1.58	0.00	67	1.12	0.00
No. of INED	691	2.52	2.00	100	3.38	3.00	100	2.21	2.00	40	3.15	3.00	67	2.70	3.00
Total No. of Directors	691	8.44	8.00	100	11.77	12.00	100	6.80	6.00	40	11.10	11.00	67	10.31	9.00
CEO as Chairman (unadjusted)	691	0.46	0.00	100	0.34	0.00	100	0.55	1.00	40	0.40	0.00	67	0.21	0.00
CEO as Chairman (adjusted)	691	0.57	1.00	100	0.46	0.00	100	0.64	1.00	40	0.40	0.00	67	0.22	0.00
ED as Chairman	691	0.94	1.00	100	0.88	1.00	100	0.97	1.00	40	0.93	1.00	67	0.97	1.00
No. of Family Members in Board	691	1.35	0.00	100	1.11	0.00	100	1.04	0.00	40	0.00	0.00	67	0.06	0.00
Exist Family Members in Board	691	0.44	0.00	100	0.31	0.00	100	0.38	0.00	40	0.00	0.00	67	0.03	0.00
Executive Director's Fee	691	0.28	0.00	100	0.73	0.26	100	0.15	0.00	40	0.07	0.00	67	0.75	0.13

Executive Base Compensation	691	6.75	4.54	100	13.98	10.52	100	3.77	3.15	40	1.22	0.99	67	6.36	4.11
Executive Variable Compensation	691	1.73	0.00	100	8.30	1.21	100	0.21	0.00	40	0.20	0.00	67	2.86	0.05
Exist Share Option Scheme	691	0.80	1.00	100	0.69	1.00	100	0.91	1.00	40	0.08	0.00	67	0.94	1.00
Independent Director's Fee	691	0.25	0.18	100	0.39	0.24	100	0.16	0.10	40	0.12	0.06	67	0.33	0.24
Exist ED Conflict of Interest	691	0.15	0.00	100	0.27	0.00	100	0.13	0.00	40	0.00	0.00	67	0.15	0.00
Exist NED Conflict of Interest	691	0.05	0.00	100	0.12	0.00	100	0.01	0.00	40	0.00	0.00	67	0.06	0.00
Exist INED Conflict of Interest	691	0.00	0.00	100	0.01	0.00	100	0.00	0.00	40	0.00	0.00	67	0.00	0.00
% of issued shares held by Directors	691	0.33	0.35	100	0.19	0.01	100	0.34	0.35	40	0.01	0.00	67	0.03	0.00
% of issued shares held by Largest Shareholder	691	0.45	0.47	100	0.49	0.53	100	0.40	0.37	40	0.54	0.55	67	0.54	0.55
No. of Substantial Shareholders	691	1.28	1.00	100	1.29	1.00	100	1.16	1.00	40	1.28	1.00	67	1.21	1.00
Big4	691	0.91	1.00	100	0.98	1.00	100	0.79	1.00	40	0.98	1.00	67	0.99	1.00
H Shares	691	0.06	0.00	100	0.07	0.00	100	0.00	0.00	40	1.00	1.00	67	0.00	0.00
Red Chips	691	0.10	0.00	100	0.26	0.00	100	0.00	0.00	40	0.00	0.00	67	1.00	1.00
Code of Best Practice	691	0.47	0.00	100	0.53	1.00	100	0.49	0.00	40	0.83	1.00	67	0.28	0.00
ADR	691	0.14	0.00	100	0.51	1.00	100	0.05	0.00	40	0.33	0.00	67	0.24	0.00

## Table 4: Summary Statistics

### Panel B: Existence of Family in Board, 10 Big Families

This table is the segmented descriptive statistics of all CG variables, financial data, and dummy variables. The sample size is 691, and these are companies listed in Main Board of HK. Details of the variables are presented in Table 1. Top 10 big families in 2002 according to Hong Kong Economic Journal are: Mr. Li Ka-shing, Mr Michael D. Kadoorie, Mr. Lee Shau-kee, Mr. Peter K. C. Woo, Mr. Richard Li Tzar-kai, Mr. Alex Chan, Kwok's family, John Swire, Mr. Larry Yung Chi-kin, Mr. Cheng Yu-tung

	Full Sample			Family in Board			No Family in Board			10 Big Families		
Variable	N	Mean	Median	N	Mean	Median	N	Mean	Median	N	Mean	Median
Tobin's Q	691	0.66	0.44	303	0.64	0.43	388	0.67	0.46	33	0.83	0.71
Market to Book Value	667	1.08	0.56	292	1.15	0.52	375	1.02	0.62	33	0.86	0.79
Market Value	691	4780	302	303	2756	264	388	6361	333	33	28287	6829
No. of ED	691	4.89	5.00	303	4.77	4.00	388	4.99	5.00	33	7.21	6.00
No. of NED	691	1.03	0.00	303	1.04	0.00	388	1.03	0.00	33	2.52	1.00
No. of INED	691	2.52	2.00	303	2.48	2.00	388	2.55	2.00	33	3.39	3.00
Total No. of Directors	691	8.44	8.00	303	8.29	8.00	388	8.56	8.00	33	13.12	13.00
CEO as Chairman (unadjusted)	691	0.46	0.00	303	0.47	0.00	388	0.45	0.00	33	0.36	0.00
CEO as Chairman (adjusted)	691	0.57	1.00	303	0.69	1.00	388	0.47	0.00	33	0.48	0.00
ED as Chairman	691	0.94	1.00	303	0.95	1.00	388	0.93	1.00	33	0.73	1.00
No. of Family Members in Board	691	1.35	0.00	303	3.09	3.00	388	0.00	0.00	33	1.21	0.00
Exist Family Members in Board	691	0.44	0.00	303	1.00	1.00	388	0.00	0.00	33	0.39	0.00

Executive Director's Fee	691	0.28	0.00	303	0.24	0.00	388	0.31	0.00	33	0.72	0.50
Executive Base Compensation	691	6.75	4.54	303	7.53	5.51	388	6.14	4.06	33	16.36	11.00
Executive Variable Compensation	691	1.73	0.00	303	2.10	0.00	388	1.44	0.00	33	16.03	4.10
Exist Share Option Scheme	691	0.80	1.00	303	0.81	1.00	388	0.80	1.00	33	0.55	1.00
Independent Director's Fee	691	0.25	0.18	303	0.23	0.18	388	0.26	0.19	33	0.27	0.16
Exist ED Conflict of Interest	691	0.15	0.00	303	0.16	0.00	388	0.14	0.00	33	0.48	0.00
Exist NED Conflict of Interest	691	0.05	0.00	303	0.05	0.00	388	0.04	0.00	33	0.12	0.00
Exist INED Conflict of Interest	691	0.00	0.00	303	0.01	0.00	388	0.00	0.00	33	0.03	0.00
% of issued shares held by Directors	691	0.33	0.35	303	0.46	0.51	388	0.23	0.11	33	0.29	0.28
% of issued shares held by Largest Shareholder	691	0.45	0.47	303	0.48	0.49	388	0.43	0.45	33	0.52	0.51
No. of Substantial Shareholders	691	1.28	1.00	303	1.22	1.00	388	1.32	1.00	33	1.27	1.00
Big4	691	0.91	1.00	303	0.90	1.00	388	0.91	1.00	33	0.97	1.00
H Shares	691	0.06	0.00	303	0.00	0.00	388	0.10	0.00	33	0.00	0.00
Red Chips	691	0.10	0.00	303	0.01	0.00	388	0.17	0.00	33	0.09	0.00
Code of Best Practice	691	0.47	0.00	303	0.48	0.00	388	0.47	0.00	33	0.45	0
ADR	691	0.14	0.00	303	0.09	0.00	388	0.17	0.00	33	0.39	0.00

**Table 5: Regression Results of CG Index and Sub Indices**

This table displays the result of our model, which is a linear regression model of the five indices with control variables. Tobin's q is calculated using the approximate Tobin's q developed by Chung and Pruitt (1994). Market to Book Value (MTBV) is downloaded from *Datastream*. Detailed description of variables is available in Table 1.

	Tobin's q		MTBV		Tobin's q		MTBV	
CG Index					0.00023	( 3.24 )***	0.000485	( 3.59 )***
Board Composition	0.116241	( 2.08 )**	0.255598	( 2.54 )***				
Executive Compensation	0.065469	( 2.19 )**	0.143367	( 2.41 )**				
Ownership Structure	0.156232	( 3.9 )***	0.182386	( 2.52 )***				
Conflict of Interest	0.077933	( 2.08 )**	0.180761	( 2.59 )***				
Transparency Standards	0.069963	( 0.96 )	0.148128	( 1.09 )				
Hshare	-0.39642	( -3.5 )***	-0.95476	( -4.5 )***	-0.46476	( -4.1 )***	-1.01206	( -4.8 )***
Redchip	-0.06188	( -0.7 )	-0.13642	( -0.8 )	-0.05078	( -0.6 )	-0.10591	( -0.7 )
DERatio	0.000901	( 0.03 )	0.415337	( 7.03 )***	-0.00273	( -0.1 )	0.411983	( 6.93 )***
Lnsales	-0.06353	( -4.4 )***	-0.06035	( -2.3 )**	-0.04837	( -3.7 )***	-0.04355	( -1.8 )
Industry 2	-0.06644	( -0.7 )	0.052265	( 0.32 )	-0.0876	( -1 )	0.027083	( 0.16 )
Industry 3	0.260533	( 3.85 )***	0.49696	( 4.01 )***	0.243638	( 3.69 )***	0.494721	( 4.11 )***
Industry 4	0.289242	( 3.9 )***	0.469997	( 3.48 )***	0.291387	( 3.93 )***	0.492846	( 3.66 )***
Industry 5	0.494871	( 3.31 )***	0.456314	( 1.55 )	0.537729	( 3.58 )***	0.491242	( 1.66 )
Constant	1.326766	( 7.17 )***	1.365448	( 4.03 )***	0.742721	( 3.92 )***	0.345565	( 1.01 )
Observations	674		644		674		644	
Adjusted R-square	0.09		0.1223		0.07		0.1099	