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Corporate Governance and Market Valuation in China

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Abstract

This paper studies the relationship between the governance mechanisms and the market valuation of publicly listed firms in China empirically. We construct measures for corporate governance mechanisms and measures of market valuation for all publicly listed firms on the two stock markets in China by using data from the firm's annual reports. We then investigate how the market-valuation variables are affected by the corporate governance variables while controlling for a number of factors commonly considered in market valuation analysis. A corporate governance index is also constructed to summarize the information contained in the corporate governance variables. The index is found to have statistically and economically significant effect on market valuation. The analysis indicates that investors pay a significant premium for well-governed firms in China, benefiting firms that improve their governance mechanisms.

Keywords: Corporate governance mechanisms, market valuation, corporate governance index, corporate governance premium.

JEL Classification: G34, G32

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1. Introduction

The Asian financial crisis has rekindled worldwide interest in the issue of corporate governance. In recent years, pushing for higher governance standard has become a regular campaign with the participation of an increasing number of parties: academics, media, regulatory authorities, corporations, institutional investors, international organizations, shareholder rights watchdogs, and etc.¹ Numerous initiatives have also been proposed by Asian countries to enhance their corporate governance practice, for example, new listing/disclosure rules, mandatory training for board directors, enforced codes of governance, and etc. International organizations are also very keen on governance issues. The International Monetary Fund has demanded that governance improvements should be included in its debt relief program. In 1998, the Organization of Economic Cooperation and Development (OECD) issued its influential *OECD Principles of Corporate Governance*, which are intended to assist member and non-member countries in their efforts to evaluate and improve the legal, institutional and regulatory framework for better corporate governance. In addition, private companies, such as Standard & Poor, California Public Employees' Retirement Pension System (Calpers), CLSA, and McKinsey, are also calling for sweeping reforms of governance practice in emerging economies.

Corporate governance has also gained unparalleled importance in China. The Chinese government opened stock exchanges in the early 1990s in order to raise capital and improve operating performance for state-owned enterprises (SOEs). In fewer than 12 years, China's stock markets have grown into the eighth largest in the world with market capitalization of over US\$500 billion. Chinese companies, especially SOEs, have benefited tremendously from the rapid growth in issuance and general public's enthusiasm on equity market. Meanwhile, the regulations over stock markets have been evolving to address the tradeoff between growth and control: a liberal approach that will lead to fast growth versus a controlled approach that will lead to slower growth. Even though issuance approval, pricing and placement systems have been significantly liberalized, they are still tightly controlled compared to other Asian markets. As controlled as it is, poor governance practices are still rampant among the Chinese listed companies. For example, several listed companies have

¹ A recent research by McKinsey finds that articles featuring 'corporate governance' in major international economics/finance newspapers or magazines, such as Financial Times, Asian Wall Street Journal, Far-East Economic Review, etc, have increased 10 fold from pre-crisis 96-97 to 2001-2001 (see, "Governance in Asia", McKinsey & Company, 2002). In academics, the rebirth has spawned a voluminous body of research on governance related issues, especially in emerging markets.

been placed on the spotlight due to their poor governance practices. In 2001, the largest shareholder of Meierya, a one-time profitable listed company, colluded with other related parties and collectively embezzled US\$ 44.6 million, 41% of the listed company's total equity; in the same year, Sanjiu Pharma's largest shareholder extracted US\$ 301.9 million, 96% of the listed company's total equity.²

While Chinese companies, especially the SOEs, acquire a huge amount of capital from the public through either the banking system or the capital market, they remain extremely inefficient. For example, recent official statistics suggest that about one-third of all SOEs are loss-makers, another third either break even or are plagued with implicit losses, while the remaining one-third are marginally profitable. Ineffective governance system has been widely believed as the root cause of corporate China's lackluster performance. Improving corporate governance is one of the most important tasks of China's further reform.

To improve corporate governance, the government obviously has an important role to play. It should strengthen laws that protect shareholder interests and beef up enforcement of such laws and regulations. It is also important for the firms to take action on voluntary basis. The question, however, is: Do the firms have incentives to do so? This depends on the answer to the next question: Does a firm's corporate governance practice have a positive effect on its market value? If the answer is yes, then firms will have incentives to improve their governance, because by doing so, they increase their market value and reduce their future cost of investment. This paper attempts to answer this question empirically.

The answer to the question is not obvious. For a firm's corporate governance practice to have a positive effect on its market value, two conditions need to be satisfied. The first is that good governance increases the returns to shareholders of the firm and the second is that the stock market is sufficiently efficient so that the share prices reflect the fundamental values. These conditions are most likely to be valid in mature markets, but it is by no means clear they are also valid in emerging markets. In fact, many people believe that share prices on China's stock markets are purely driven by speculative activities and bear no relationship to the fundamentals of the firms.

Practitioners seem to believe that good governance does increase the firm's market valuation. Recently, McKinsey has conducted a series of surveys on institutional investors and private equities with investment focus on emerging markets and found that 80% of them

² Liu and Lu (2002) finds that majority of Chinese listed companies manage their earnings as a response to a variety of regulatory loopholes. However, the incentives are stronger for firms with poorer governance practice.

are willing to pay a premium to well-governed firms.³ Several other studies have also documented a positive correlation between performance measures and the governance level.⁴ In this paper, we plan to conduct a systematic study of this issue for publicly listed firms in China; we perform econometric analysis of the effects of corporate governance practices on the market valuation of the firms based on data from the firms' annual reports (as opposed to survey data) about actual corporate governance practices of all publicly listed firms in China. We will investigate how the firm's Tobin's q values and their market-to-book ratios are determined by the corporate governance practices of these firms while controlling for a number of variables that are typically used in the studies of market valuations of firms. In our analysis, we will pay particular attention to an important characteristic of China's firms, namely the dominance of state-owned shares.

In order to help policy makers and investors evaluate the relative quality of governance of the listed firms, we also develop a corporate governance index, called the G index, for China's stock markets. Such an index should summarize the information contained in variables measuring various governance mechanisms adopted by the firms in the most efficient way. For this purpose, we conduct principal component analysis of the corporate governance variables and define the corporate governance index as the first principal component of these variables. We find that this index affects the market valuation of the firms in both statistically and economically significant ways. In evaluating the economic significance of the effect of the corporate governance index on market valuation, we find that investors in China pay significant premium to well-governed firms.

There is a large body of literature studying issues related to corporate governance in China. For example, Qian (1995) is one of the first to offer a comprehensive discussion of corporate governance issues in China. Groves et al (1994) and Li (1997) present evidence that improved incentives in the reform process increase the productivity of the firms. Xu (2000) and Shirley and Xu (2001), on the other hand, show empirically that performance contracts are not very effective. Qian (1996) and Che and Qian (1998) emphasize the important role of government in corporate governance. Zheng, Liu, and Bigsten (1998), Xu and Wang (1999), Zhang, Zhang, and Zhao (2001), Li and Wu (2002), and Tian (2002) all investigate the impact of state-ownership on enterprise performance. Among them, Xu and Wang (1999) and Tian (2002) are most closely related to ours because both of them are empirical studies based on stock market data from China. Our contribution is that our study

³ McKinsey Surveys on International Institutional Investors and Private Equities, 1999, 2000, 2001, 2002.

⁴ For example, see "Saints and sinners: who's got religion?", CLSA Emerging Markets, 2001.

considers a comprehensive list of corporate governance mechanisms and their impacts on the market valuation of the firms. We also construct a corporate governance index based on our list of governance mechanisms. Furthermore, our study shed light on the relative importance of various governance mechanisms in enhancing the market valuation of the firms.

Most of the empirical literature on the relationship between corporate governance and firm performance in other countries focuses on a particular aspect of governance, such as board characteristics (Millstein and MacAvoy, 1998, and Bhagat and Black, 1999), shareholders' activism (Karpoff, Malatesta, and Walking, 1996, and Carleton, Nelson, and Weisbach, 1998), compensation to outside directors (Bhagat, Carey, and Elson, 1999), anti-takeover provisions (Sundaramurthy, Mahoney, and Mahoney, 1997), investor protection (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 2002), and so on. Recently, several papers study the effects of general corporate governance practices on firm value, primarily in emerging markets. Most of them either use a small single-country sample (Black, 2001, and Gompers, Ishii, and Metrick, 2001) or multi-country samples that contain only the largest firms in each country (Durnev and Kim, 2002, and Klapper and Love, 2002). Our paper is closest in spirit to the study by Black, Jang, and Kim (2002) on Korea firms in the sense that both study a full cross section of all listed firms in the respective market. In China, given the strong influence of various levels of government in determining the governance practices of listed firms, often on arbitrary basis, we believe that the endogeneity problem in estimating the effect of governance practices on firm valuation is not important.

The paper is organized as follows. Section 2 reviews the theoretical framework of corporate governance and summarizes major governance mechanisms. Section 3 discusses the variables used in our empirical study of the relationship between the governance mechanisms and market valuations of firms. Section 4 conducts the econometric analysis, constructs the corporate governance index, and assesses the magnitude of the effect of the governance index on market valuation. Section 5 concludes the paper.

2. Corporate Governance Mechanisms

Over three hundred years ago, in his masterwork "*The Wealth of Nations*", Adam Smith raised the issue of the separation of ownership and stewardship in joint-stock corporations. It was therefore suggested that a set of effective mechanisms should be in place to resolve the conflict of interests between firm owners and managers. Modern academic literature on

corporate governance stems from the seminal book by Berle and Means (1932), who argued that, in practice, managers of a firm pursued their own interests rather than the interests of shareholders. The contractual nature of the firm and the principal-agent problem highlighted by Berle and Means led to the development of the agency approach to corporate finance. Over the years, in particular in the last quarter century, there has been rapid growth in both theoretical and empirical studies in this area.

The agency approach to corporate governance attempts to provide answers to the key question – “How can shareholders ensure that non-owner managers pursue their interests?” (see Allen and Gale, 2001). However, in recent years, another form of conflict of interests – controlling shareholders taking actions that are for their own benefits at the expense of minority shareholders – has drawn much attention. As La Porta, Lopez-de-Silanes, and Shleifer (1998) assert, “...the central agency problem in large corporations around the world is that of restricting expropriation of minority shareholders by controlling shareholders...” Such expropriation of minority shareholders by controlling shareholders takes a variety of forms, such as excessive executive compensation, loan guarantees for, and transfer pricing between, related companies, dilutive share issues, etc. Johnson, La Porta, Lopez-de-Silanes, and Shleifer (2000) use the term “tunneling” to describe the transfer of resources out of firms for the benefits of their controlling shareholders. Much evidence emerging during the Asian financial crisis shows that “tunneling” is a very serious agency problem in emerging markets. The recent debacles of Enron, Worldcom, and Global Crossing convince people that “tunneling” is also possible even in developed economies.

Taking various forms of agency problems into account, corporate governance has a new and more comprehensive meaning. As suggested by Dennis and McConnell (2002), “...corporate governance is the set of mechanisms – both institutional and market based – that induce the self interested controllers of a company (those that make decisions regarding how the company will be operated) to make decisions that maximize the value of the company to its owners (suppliers of capital)...” Practitioners seem to share the same view. For example, TIAA-CREF defines corporate governance as “...the set of mechanisms that maintain an appropriate balance between the rights of shareholders... and the needs of the board and management to direct and manage the corporation’s affairs.”

Thus, good corporate governance consists of a set of mechanisms that assure suppliers of finance get an adequate return on their investment. Having said that, our next question naturally arises: what are the set of mechanisms that should be in place to govern a company? There are two competing views: market based governance model popular in US and UK

vis-à-vis control based model common in emerging economies, Japan and the continental Europe. The market based governance model has the characteristics of an independent board, dispersed ownership, transparent disclosure, active takeover markets, and well-developed legal infrastructure. The control model, however, emphasizes the values of insider board, concentrated ownership structure, limited disclosure, reliance on family finance and the banking system, etc. Although academic research up to date has yielded mixed results regarding the relative superiority of the two models, more developing countries seem to favor the market-based model.

In this paper, we do not intend to render judgment as to which of the two models is better in the context of China's capital markets. Instead, we choose to focus on a set of corporate governance mechanisms and assess their relations with the market valuation of China's listed companies. We also come up with an overall governance score based on the set of mechanisms.

Broadly speaking, there are two types of mechanisms that help resolve the two sets of conflicts: between owners and managers, and between controlling shareholders and minority shareholders. The first type consists of internal mechanisms (e.g., ownership structure, executive compensations, board of directors, financial disclosure), while the second are external mechanisms (e.g., external takeover market, legal infrastructure, protection of minority shareholders, etc.). In this paper, we consider and assess each of them.⁵

2.1 Internal Mechanisms

There are four internal governance mechanisms: board of directors, executive compensation, ownership structure, and financial transparency.

(1) The board of directors

It is argued that the board of directors is the first instrument through which shareholders can exert influence on the behavior of managers in order to ensure that the company is run in their interests. It is also argued that such an influence may not be effective when the managers dominate the board. However, the empirical findings on the relationship between board composition and firm performance are mixed: (1) Firms with boards containing a majority of independent directors do not perform better than firms without such

⁵ We understand that there are many different governance frameworks. Our framework, however, is similar to that used in most of the recent researches on corporate governance (e.g., CSLA, S&P, Allen and Gale, 2001).

boards; (2) A moderate number of inside directors is associated with greater profitability; (3) In Japan, although the presence of outside directors on the board has no effect on the sensitivity of CEO turnover to either earnings or stock-price performance, concentrated equity ownership and ties to a main bank do have a positive effect; and (4) There is a strong inverse relationship between CEO turnover and firm performance in some countries.

(2) Executive compensation

The second mechanism that helps align the interests of the managers and the shareholders is appropriately structured managerial compensation. Such compensation can be linked to both stock valuations and accounting based performance measures. Although most of the empirical studies are constrained by data availability, the limited finding seems to suggest that there is a positive relationship between executive pay and performance in the US, Germany and Japan.

(3) Ownership structure

It is believed that one of the most important ways through which a firm maximizes its value is through well-designed ownership structure of the firm's shares. Concentrated equity ownership can be bad for the governance of the firm since it gives the largest shareholders too much discretionary powers of using firm resources in ways that serve their own interest at the expense of other shareholders. That is, concentrated ownership may accentuate the "tunneling" problem we mentioned earlier. Claessens, Djankov and Lang (2000) find that cross-holding and pyramidal ownership have been common in Asian economies. One consequence of such ownership arrangement is that the controlling shareholders are able to obtain more control at minimal capital expense, which makes "tunneling" much easier. Although cross-holding, pyramidal schemes, and deviations from one-share-one-vote are not common in China, listed companies normally have one ultimate owner who holds a significant percent of total shares.⁶ The existence of such a controlling shareholder makes transferring resources out of listed companies into parent or other related parties' accounts possible. Several recently disclosed corporate scandals in China's capital markets were all about unconstrained large shareholders misusing firm resources. On the other hand, ownership concentration may also have some positive effects. If ownership starts out to be very dispersed, the emergence of a large shareholder may help overcome the free-rider

⁶ As we will show in table 1, the largest shareholder in Chinese listed companies on average holds 45.3% of total shares.

problem among shareholders in monitoring the managers. This effect is probably negligible in China because ownership is seldom very dispersed there. The second positive effect of ownership concentration becomes significant when the degree of concentration is very high. Since tunneling is usually inefficient for the firm as a whole, if the shareholding of the largest shareholder is very large and therefore there is high degree of congruence between his interest and the firm's interest, then the largest shareholder may have very little incentive to engage in inefficient tunneling. In summary, the relationship between firm performance and ownership concentration is expected to be complicated. Increasing ownership concentration from a very low level may help overcome the free-rider problem among shareholders and therefore has a positive effect. Further increase in ownership concentration may have a negative effect as it reduces the constraint from other shareholders on tunneling. As ownership concentration approaches 100 percent, the effect becomes positive again because it reduces the largest shareholder's incentive for tunneling. In China, the second effect is most likely to be dominant and the first one is probably negligible.

(4) Financial transparency and adequate information disclosure

There is no doubt that financial transparency and adequate information disclosure are of ultimate importance in all countries, particularly developing ones. Managers play a vital role in securing the interests of not only the existing owners but also potential investors. Honest managers will attempt to provide sufficient, accurate and timely information regarding the firm's operations, financial status, and external environment.

2.2. External Mechanisms

(1) The market for corporate control

It is generally believed that the existence of an active market for corporate control is essential for efficient allocation of resources. It allows inefficient managers to be removed and replaced with able managers who can gain control of large amounts of resources in a short period of time. The market for corporate control can operate in three ways: proxy contests, friendly mergers and hostile takeovers.

Proxy fights do not usually unseat the existing board of directors successfully because share holdings are often dispersed among many shareholders. Friendly mergers and takeovers occur in all countries and account for most of the transaction volume that occurs. In some developed countries, it ranges from 60% to 90%. Hostile takeovers do occur fairly frequently

in the US and UK, however, much less so in Germany, France and Japan. Empirical studies suggest that takeovers in the past did significantly increase the market value of target firms, although the increase in value for bidding firms was zero and possibly even negative. Studies using accounting data find that changes and improvements in operations can at least partially explain takeover premiums.

(2) Legal infrastructure and protection of minority shareholders

A series of studies by La Porta et al (1997, 1998, 1999, 2002) emphasize the role played by the legal framework and legal foundation in disciplining managers and controlling shareholders' opportunistic behaviors. They find that in countries with common law tradition, governance standards are generally higher and minority shareholders are relatively better protected. In contrast, countries pursuing continental law systems normally have poor minority shareholder protection and lower governance standards. Interestingly, they find that cross-country differences in equity valuation, cost of capital and magnitude of external financing could be explained by a country's legal origin. Obviously, legal infrastructure is an effective external mechanism that assures that investors get a fair return on their investment.

Chinese listed companies are regulated by a uniform legal system, therefore, this mechanism plays little role in explaining cross-sectional differences in governance practices. However, it has to be kept in mind that many Chinese companies do have shares listed and traded on stock exchanges where different jurisprudences prevail (e.g., H shares, ADRs, etc).

(3) Product market competition

Another powerful mechanism for solving a variety of agency problems is competition in product markets. If the managers of a firm waste resources, the firm will eventually fail in product markets. Hence, increased competition reduces managerial slack and may be helpful in limiting efficiency losses. The same logic implies that product competition helps curtail the "tunneling" activities of the controlling shareholder.

In sum, good corporate governance helps protect investors and ensures that investors get a fair return on their investment. The mechanisms we specified above may be important components of good corporate governance. It is important to find out empirically how effective these mechanisms are in China's context. In particular, we are interested in how these mechanisms affect the market valuation of the firms.

3. Quantification of Corporate Governance Mechanisms and Market Valuation

In this section, we define some variables to quantify some of the corporate governance mechanisms we discussed in Section 2. We will also define two variables that represent the market valuation of the firms. Summary statistics of these variables will be presented. These variables prepare us for the empirical analysis in Section 4.

3.A. Definition of Corporate Governance Variables

(1) Board of directors

(i) *ceo_is_top_dir* – a dummy variable that equals 1 if the CEO is the chairman or a vice chairman of the board of directors and 0 otherwise.

The board of directors in a company should play an important role of monitoring the management. Such monitoring function is compromised, when a CEO controls or partially controls the board. Our measure, *ceo_is_top_dir*, therefore, is expected to have negative impact on a company's market valuation.

(ii) *out_ratio* - the percentage of outsider directors in a company's board

It is defined as the ratio of the number of directors who do not receive compensation from the company to the total number of directors. Paid directors are often members of the management team who are delegated by the controlling shareholder. If they dominate the board, the board is not expected to play an effective monitoring role.

(2) Executive compensation

Stock options are rare in China. Also, the information on executive pay is not complete, and in majority cases inaccessible. However, we come up with the following alternative variable to capture the alignment of interests between the managers and the shareholders.

(iii) *top5 - the percentage of the shareholding held by the top executives*

We define the top executive as the CEO, the executive vice presidents, the chairperson and the vice chairpersons of the board of directors. *top5* measures the top managers' economic interests in a company. The interests of the top managers are better aligned with the interests of shareholders if they have more stakes in the firm.

(3) Ownership variables

(iv) *top1 - shareholding of the largest shareholder*

We define *top1* as the percentage of shares held by the largest shareholder. We employ this variable to measure the largest shareholder's interest in a company and also the largest shareholder's power in the board. As we discussed in Section 2, we expect the relationship between a firm's market valuation and the variable *top1* to be U-shaped and to be negative if we restrict the relationship to be linear.

(v) *parent – a dummy variable that equals 1 if a firm has a parent company and 0 otherwise*

If the largest shareholder of a listed company is a firm, the scope for tunneling is wider. There are many more channels for a company than an individual to tunnel. The parent company can expropriate other shareholders of the concerned firm through various business dealings between them, or connected transactions. The most commonly observed are loan guarantees for related companies, manipulated transfer prices, the dumping of non-performing assets from parent company to listed company.

(4) Financial transparency

We do not have a good measure for financial transparency. Most listed companies in China are audited by local accounting firms and there is no reliable information about which accounting firm is more reputable. In spite of the fact that a number of companies have shares listed on Hong Kong or New York stock exchanges and therefore have then-big 5 firms audit their financial statements, foreign auditors seldom have access to the information about those

listed companies' domestic operations – due to very complicated financing and ownership arrangements.

(5) The market for corporate control

(vi) *cstr2_10* - concentration of shareholding in the hands of the second to the tenth largest shareholders

It is defined as the natural logarithm of the sum of squares of the percentage points of shareholding by the 2nd to the 10th largest shareholders. This variable should have a positive effect through three channels. First, large shareholders other than the largest one are obstacles to the tunneling activities by the largest shareholder, since these shareholders have incentives to monitor and restrain the largest shareholder. Second, they enhance the efficiency of the market for corporate control. When the management under-performs, these large shareholders can either initiate a fight for corporate control or help an outsider's fight for control. Third, these large shareholders also serve as monitors of the management. Overall, the higher is the concentration of shareholding in the hands of these large shareholders, the stronger these roles are.⁷

(6) Legal framework and protection of minority shareholders

(vii) *hbshare* – a dummy variable that equals 1 if a company has H shares traded in the Hong Kong Stock Exchange or B shares traded in the Shanghai or Shenzhen stock exchange; and 0 otherwise

As explained before, the Chinese listed companies are uniformly regulated by Chinese jurisprudences. However, companies that have issued H shares traded on Hong Kong Stock Exchange or B shares mainly open to foreign investors in domestic stock exchanges must adopt international accounting standards. This dummy variable is used as a proxy for the effect of legal environment in enforcing corporate governance.

⁷ Using a sample of firms under “special treatment,” Bai, Liu and Song (2002) estimate that increased competition for the control over a firm triggered by the designation of the “special treatment” status results in an average abnormal return of 29%. They also find that the abnormal return is positively correlated to *cstr2_10*, implying that concentration of shareholding in the hands of the second to the tenth largest shareholders enhances competition for the control over the firm and hence increases its market valuation.

(7) Product market competition variable

We do not have a good measure for this mechanism. Even if we did, its effect on market valuation would be ambiguous. On the one hand, product market competition enhances corporate governance. On the other hand, product market competition erodes the profitability of the firm.

(vii) so_top1 – a dummy variable that equals 1 if the government is the controlling shareholder and 0 otherwise

Finally, in addition to the above seven measures of corporate governance derived from conventional economic theory, we also consider one additional measure – the dummy variable that measures whether the controlling shareholder is the government or not.⁸ It is believed that government may have goals such as maintaining employment and social stability rather than profit-maximization. The controlling government may use the listed company as a vehicle to meet these other policy goals that may conflict with shareholders' interests (see Bai, Li, Tao, and Wang, 2000). Additionally, it has been argued that soft budget constraint is a major problem facing many SOEs in transition economies (see Dewatripont, Maskin, and Roland, 1998, for a survey). Therefore, we believe that governments as controlling shareholders have negative effect on the firms' market valuation.

3.B. Market Valuation

Since our goal is to study the impacts of corporate governance mechanisms on the market valuations of the firms, we also need to define measures of market valuation. The following two measures are used:

- (1) Tobin's q, a measure widely used to measure the valuation of listed company;
- (2) Market/Book ratio, a ratio of market value to book value of total assets.

Note that these measures are normalized with respect to the size of the firm and therefore

⁸ The so-called state-controlling shareholder also includes legal-person shares controlled by various level of governments.

should not depend on the size of the firm in trivial ways. Details about the variable definitions are given in the appendix.

One difficulty with these definitions is that a large proportion of shares of the listed firms in China cannot be freely traded and therefore do not have market prices. There is then no consensus way to compute the total market value of the firms. One straightforward way of doing it is to use the price of the tradable shares to represent the price of the non-tradable shares. Variables Tq (or Q) and MB are defined this way. However, this method tends to overstate the market valuation of the firm, as the non-tradable shares should have lower price than the tradable ones. Chen and Xiong (2002) find that the non-tradable state-owned shares and legal-person shares in China on average have a 70%-80% illiquidity discount when they are traded on informal markets. Following their findings, we define two more sets of valuation measures. Tq_{70} and MB_{70} are computed by taking a 70% discount on the non-tradable shares and Tq_{80} and MB_{80} are computed by taking an 80% discount. These additional measures should better reflect the market valuation of China's listed firms.

3.C. Summary Statistics

Our sample of study includes all listed companies on both the Shanghai Stock Exchange and Shenzhen Stock Exchange during the year of 2000. We eliminate those firms with missing data for the eight variables and the remaining sample consists of 1004 firms, representing more than 95% of listed firms on the two exchanges. The data source is *China Stock Market & Accounting Research Database (CSMAR)*, compiled according to the format of *CRSP* and *Compustat* by Hong Kong Polytech University and GTA Information Technology Company Limited in Shenzhen.

Table I reports the sample statistics. In panel A, we present the summary statistics of the eight corporate governance variables. It is interesting to note a number of features about the governance structure of Chinese firms: (1) More than a third of CEOs in China's listed companies are also the chairman or a vice chairman of the board of directors, blurring the monitoring role supposedly played by the board of directors; (2) The proportion of the number of outsider directors on the board for the sample companies is surprisingly high, with a mean of 48.4% and a standard deviation of 27.4%; (3) Top managers typically own very little of their companies' shares. The mean of *top5* variable is 0.02% with standard deviation of 0.1432%; (4) On average, the largest shareholder in each firm holds a significantly large portion of shares. Note that the mean of the top shareholder's holding, *top1*, is 45.3%, with

highest value more than 88%; (5) A large majority of the publicly listed firms in China (78.7%) have a parent company. This can be seen from the mean for the dummy variable *parent*, which is 0.787; (6) there is a big variation of concentration of shareholding in the hands of the second to the tenth largest shareholders in China. The mean and the standard deviation for the concentration of the second to the tenth largest shareholders, *cstr2_10*, are 3.20 and 2.80, with lowest at -6.53 to highest 7.27; (7) Dual listing or multiple listing is not common for Chinese firms, with only less than 10% of them having the privilege; and (8) a large majority of companies, about 57% are controlled by the government.

The summary statistics of the valuation variables are given in Panel B of Table I. It is clear from the table that, when non-tradable shares are not discounted, the Chinese publicly listed firms, on average, are highly valued by shareholders. The mean values of each of the two valuation variables, 3.619 and 4.043, are significantly higher than the international norm. However, when non-tradable shares are discounted, the adjusted Tobin's q and the market/book ratio are in the range of 1.8 to 2.0, which seem to be more comparable with those in other major stock markets.

4. Empirical Results on Corporate Governance and Market Valuation

In this section, we carry out our econometric analysis. First, we investigate the effects of the corporate governance mechanisms on the market valuation of the firms. We will use six different measures of market valuation for our analysis. Second, we use the principle component method to construct a corporate governance index – the G index, and consider the relationship between the G index and the market valuation. Finally, we compare the average market valuation of each quintile of the firms ranked by the G index. This exercise gives us some idea about the magnitude of the corporate governance premiums when only one index is used to measure the level of corporate governance. Some international comparison is also offered.

4.A. Regression Results

Table II reports regression results of market valuation variables on the 8 variables used to measure the internal as well as the external mechanisms of corporate governance for China's listed companies. The first regression is done by regressing Tobin's q on the 8 variables, with

the size, the leverage ratio, the capital-sales ratio, the operation income-sales ratio, and industry dummies (according to CSRC's classification with 16 industries) as control variables (the details of these control variables are given in the appendix). These control variables are typical variables used in corporate valuation studies (see, for example, Cho (1998), and Joh (forthcoming)). By controlling these variables, we isolate the impact of corporate governance variables on market valuation.

We organize our independent variables according to the corporate governance mechanisms discussed in the previous sections. The square term of the variable *top1*, *top1_sq*, is included because our discussion in Section 2 suggests that the relationship between market valuation and the shareholding of the largest shareholder is likely to be non-linear. Eight interesting findings are in order.

First, if a company's CEO is also a top director (chairman or vice chairman) of the board, it might hurt the company's valuation. Indeed, the coefficient of the variable *ceo_is_top_dir* in this regression is negative although not statistically significant.

Second, high ratios of outside directors in the board seem to enhance firms' market valuations. The variable *out_ratio* that measures the proportion of outside directors in the board has a positive coefficient in the regression with the significance level at 5%.

Third, high shareholdings of top managers may not be value enhancing in China; the coefficient of the variable *top5* in the regression is negative with very small *t*-value. The inclusive result may be due to the fact that shareholdings by the top managers in China's listed companies are negligibly small.

Fourth, the effect of the shareholding of the largest shareholder on Tobin's *q* is non-linear. The coefficient of *top1* is negative and statistically significant, and the coefficient of *top1_sq* is positive and statistically significant, indicating a U-shaped relation between a firm's market valuation (Tobin's *q*) and the shareholding of its largest shareholder. This finding is consistent with other studies for China's listed companies (see Tian 2002).⁹

Fifth, it is value reducing for a listed firm to have a parent company. The coefficient for the dummy variable *parent* in the regression is negative and statistically significant at the 5% level.

Sixth, the higher is the degree of concentration of shareholding among other large shareholders, the higher will be the firm's market valuation. The coefficient for the variable *cstr2_10* is positive and statistically significant at the 1% level.

⁹ Tian (2002) interprets the observed U-shape relationship with his theory of two hands of the government shareholder - grabbing and helping.

Seventh, domestic investors seem to favor firms with cross listing and reward them with high valuations. The coefficient of the dummy variable *hbshare* is positive and statistically significant at the 1% level, indicating that the domestic-market valuation of a firm is higher when the firm also issues shares open to foreign investors (B-shares) or is listed overseas (H-shares).

Finally, state-controlled firms tend to have lower valuation. In the regression, the coefficient of the dummy variable *so_top1* is negative and statistically significant at the 10% level.

Among the four control variables, both the size and leverage variables have negative relationship with the market valuation measure Q . The other control variables are not significant in the regression. The coefficients for industry dummies are not reported to save space.

In the second and the third regressions, we replace Tobin's q with illiquidity-discount adjusted Tobin's q values, Tq_{70} and Tq_{80} respectively. The overall results are mostly consistent with those from the first regression. The coefficients of the variables *out_ratio* and *parent* become statistically insignificant although their signs remain the same as in the first regression. For the regression on Tq_{80} , the coefficient of *cstr2_10* becomes insignificant but remains positive. All the three regressions have relatively high explanatory power as R-squares are between 0.36 and 0.41. The control variables of size and leverage have negative and significant coefficients. In summary, the results from the three regressions with Tobin's q as dependent variables are mostly consistent with the predictions of the corporate governance theories outlined in Section 2.

The fourth to the sixth columns of Table II report the results from regressions of various measures of market-to-book ratio. The results are generally consistent with those regressions with Tobin's q as the measure of the firm valuation. Notably, the R-square remains quite high. To check for the sensitivity of our main results, we also perform the regressions by omitting control variables other than the size of the firms. The results are reported in Table IIb and they are generally in agreement with the findings reported in Table II.

Before concluding this sub-section, we would like to point out some potential problems in interpreting the above results. First, running regressions with 8 regressors could encounter the possible problem of multi-collinearity. However, the multi-collinearity problem is likely to reduce the significance level of the dependent variables in the regression while the coefficients of our regressors are mostly statistically significant. Second, there is a potential

endogeneity problem of the independent variables in the regressions. We argue that most variables used in regressions are less likely to be endogenous as most of these variables, for example, the ownership and whether the company has a parent or not, were predetermined before their listing and quite stable after listing in the stock markets. As the market develops and many of these variables are allowed to adjust according to economic considerations, further research on this issue would be useful.

4.B. Ranking Methodology

Another objective of this paper is to develop an index to quantify and evaluate the relative quality of corporate governance practice for each of the publicly listed companies on Shanghai and Shenzhen Stock Exchanges. We have defined some variables that represent various corporate governance mechanisms in Section 3 and found that some of these variables have significant effects on the market valuation of the firms. In this subsection, we combine these variables into one index, called the corporate governance index, or the G index. We will investigate the relationship between the G index and the market valuation of the firms.

According to our theoretical analysis in Section 2, we divide the eight variables defined in Section 3 into two categories. The first category includes variables that have negative impacts on a company's governance: (1) *ceo_is_top_dir*, the dummy variable that indicates the CEO is the chairman or a vice chairman of the board of directors; (2) *top1*, the shareholding of the largest shareholder; (3) *parent*, the dummy variable that indicates the firm has a parent company; (4) *so_top1*, the dummy variable that indicates the largest shareholder is the state. The theoretical prediction is that the higher is the value of each of these variables, the lower should be the level of corporate governance of the firm.

The second category includes variables that have positive impacts on governance: (1) *out_ratio*, the proportion of outside directors; (2) *top5*, shareholding by the top five executives of the firm; (3) *cstr2_10*, the degree of concentration of shareholding in the hands of the second to the tenth largest shareholders; (4) *hbshare*, the dummy variable that indicates a company has overseas listings. The prediction is that the higher is the value of each of these variables, the higher should be the level of corporate governance of the firm.

Since the above eight variables represent separately the internal and external mechanisms of corporate governance, it is important to form a composite measure of

corporate governance for the listed firms. To achieve this goal, we apply the principal component analysis (PCA). The PCA allows us to identify linear combinations of the eight variables that best represent the variation in the eight variables (see Greene, 1990, pages 283-285). We define our corporate governance index, or the G index, as the first principal component of the PCA.

Table III gives the factor loadings from the first principal component of the PCA. The signs for all variables, except for *ceo_is_top_dir*, are consistent with our theoretical arguments in Section 2. Table III indicates that, among the eight corporate governance variables, *top1*, *cstr2_10*, *out_ratio*, *so_top1*, *parent* are the more important components in the G index. It is interesting to note that except for the variable *out_ratio*, the remaining four variables all capture ownership structure of the listed companies. The other three variables, *top5*, *ceo_is_top_dir*, and *Hbshare* are less important components of the G index.

Having defined the G index, we can now consider its relationship with the market valuation of the firms. Panel A of Table IV reports the regression results of the valuation measures, the three Tobin's q values and the three values of the market to book ratio, on the G index. All six regressions show a statistically significant (at the 1% level) relationship between the corporate governance index and the market valuation. In order to single out the importance of governance on valuations, we also control for the industry differences and some other variables. Panel B of Table IV reports the regression results with these control variables. The coefficient of the G index is still statistically significant at the 1% level in all six regressions. These results strongly suggest that better-governed companies in China are highly regarded by investors who are willing to pay a premium for high governance standard.

Besides using the principal component analysis, we have also experimented with other ways of combining the eight raw scores into one index, for example, ranking each company according to each of the eight variables and then apply the method of equal weighting. The results from these other methods are largely consistent with those from the principal component analysis reported here.¹⁰

4.C. The Magnitude of the Corporate Governance Premium

In the last subsection, we found that there is statistically significant correlation between the G index and the market valuation of firms. In this subsection, we consider the economic

¹⁰ The results from using other methods to combining the raw scores are available upon request.

significance of this relationship. To achieve this goal, we divide all sample firms into quintiles according to the G index. Group 1 contains 20 percent of the firms with the lowest values of the G index while Group 5 contains those with the highest. For each group, we calculate the mean, standard deviation, and other summary statistics of each market valuation measure.

Panel A of Table V reports the summary statistics for the variable Tobin's q in each group. It is quite striking that the average Tobin's q for the lowest ranked firms is 3.060 while the average for those highest ranked is 4.475, with the difference being up to 46%. The difference in Tobin's q between the best-governed firms according our index and the average is more than 23%. These differences lend us to reach an important conclusion: Investors in China are willing to pay a significant premium to better-governed firms. This casts doubt on the popular view that the Chinese stock market is full of speculative investors who fail to value firms' fundamentals and their governance structure.

Panel B of the Table V shows that except for the differences between groups 2 and 3, and 3 and 4, the differences of Tobin's q amongst other groups are all statistically significant. To gain visual appreciation, the corresponding Figure 1 plots the mean values of Tobin's q for these five groups of the firms. The figure clearly shows an upward trend, supporting the idea that better-governed firms are associated with higher market valuations.

Table VI and VII, Figures 2 and 3 report similar pattern for the adjusted Tobin's q measures, Tq_{70} , and Tq_{80} . Both tables suggest that the best-governed companies command a premium of up to 63% over the worst governed companies. The results from the statistical tests and figures are also similar to those from the unadjusted Tobin's q.

Finally, Tables VIII to X and Figures 4-6 report similar results for the measures of the market to book ratio as those for Tobin's q values. The investors seem to be willing to value better-governed companies significantly higher than those companies that lag behind others, by a margin of 41%, 62% and 67% respectively.

Having discussed the magnitude of the corporate governance premium in China, it would be useful to compare it to its values in other countries. Unfortunately, such a comparison is difficult for two reasons. One is that there are very few such studies for they require rich data and very substantial amount of work. The other is that the corporate governance measures used in the few studies that are available are not uniform due to varied data availability, which makes it almost impossible to make meaningful comparison between them.

Gompers, Ishii, and Metrick (2003) construct a corporate governance index by

considering provisions in the corporate charter, the corporate bylaw, and the state law that protect the power of the management. These provisions include ones used to delay hostile takeover, restrict voting rights, protect director/officers, and defend takeover. Their governance index is defined to be a simple count of these provisions for each firm; the higher is the index value, the lower is the level of governance of a firm. The range of the value of the index is between 2 and 18, with the median equal to 9 (Table II in their paper). When a firm adopts one more such provision, its Tobin's q on average drops by between 0.02 and 0.11, depending on the year (Table VIII of their paper). It is hard to compare the magnitude of the corporate governance premium in our study and theirs without making counterfactual assumptions. The difference between the average value of Tobin's q of the top quintile of firms and that of the bottom quintile would be between 0.19 and 1.06, depending on the year, if the values of the index of all firms were uniformly distributed and Tobin's q and the corporate governance index were perfectly correlated.

Black, Jang and Kim (2002) construct a corporate governance index for 540 Korea companies by using information from a survey conducted by the Korean Stock Exchange. They find that an increase in corporate governance index (CG1) by 10 points results in an increase of 0.059 in the value of Tobin's q (Table 4 in their paper). Given that the range of the index is 13 to 86, the difference between the average value of Tobin's q of the top quintile of firms and that of the bottom quintile would be 0.26 if the same set of counterfactual assumptions as in the last paragraph were made.

McKinsey (2002) has analyzed the corporate governance situation for selected industries in six emerging markets. Table XI presents the finding. The governance premium there refers to the effect on the market-to-book ratio of moving from the worst to the best in one component of corporate governance. To make our result comparable, we compute our single component premiums from Table II by multiplying the coefficient of a corporate governance variable by the range of the variable. For most governance components, the premium is in the range from 30% to 65% for Chinese industries. Note that our average single-component premium is obtained from all industries in China, while the figure in Table XI is obtained from selected industries in six economies.

5. Conclusion

This paper empirically studies the impacts of various corporate governance mechanisms on the market valuation of firms. It also constructs a corporate governance index

based on the list of mechanism we consider. Corporate governance premium is computed by comparing the average market valuation of the best-governed firms with that of the worst-governed firms according to the index.

We use eight variables to quantify various corporate governance mechanisms. They include the largest shareholding, whether the largest shareholder is the government, the concentration of shareholding among the second to the tenth largest shareholders, whether the firm has a parent company, the ratio of outside directors on the board, whether the CEO is the head of the board, whether the firm also issues shares to foreign investors, and the shareholding of the five highest executives. We use Tobin's q and the market-to-book ratio as measures of market valuation. In our econometric analysis, we also control for a number of variables that are commonly used in the analysis of market valuation of firms.

We find that the estimated effects of most of the eight variables are consistent with theoretical predictions. In particular, high concentration of shareholding among the second to the tenth largest shareholders, issuing shares to foreign investors, and high ratio of outside investors all have statistically significant and positive effects on market valuation; large holding by the largest shareholder, having a parent company, and the largest shareholder being the government all have statistically significant and negative effects on market valuation.

We define the corporate governance index as the first principal component of the eight variables, which is the linear combination of the eight variables that captures the most information contained in them. The coefficients of seven out of the eight variables have the signs predicted by the theoretical framework. The index is found to have a statistically and economically significant negative effect on market valuation. According to the ranking implied by the index, the average market valuation of the top twenty percent of the firms is between 41% and 67% higher than that of the bottom twenty percent of the firms, depending on the valuation measure used. This represents a significant premium for good corporate governance practice.

Our findings have valuable implications for both the security regulators and listed companies in China. It is known that many security regulators in the world, including both the developed and developing countries, have recognized the importance of corporate governance in enhancing firms' investment values. They have proposed various ways, known as the best practice codes, to improve a firm's overall governance standard. It is our belief that our study sheds light on the relative importance of various corporate governance practices and should provide useful information for Chinese regulatory authorities to design

the best practice codes tailored to the Chinese institutional background and current level of capital market development. In addition, it also provide useful guide for firms to design their corporate governance mechanisms so that they can enhance their market valuation to benefit their shareholders and reduce their future investment cost.

References:

Allen, Franklin, and Gale, Douglas, *Comparing financial systems*. Cambridge, Massachusetts: The MIT Press, 2001.

Bai, Chong-En, Li, D. David, Tao, Zhigang, and Wang, Yijiang, "A Multitask Theory of State Enterprise Reform." *Journal of Comparative Economics*. 28,4: 716-738, December 2000.

Bai, Chong-En, Liu, Qiao, and Song, Frank, "The Value of Corporate Control: Evidence from China's ST Companies." Working Paper, CCFR, University of Hong Kong, 2002.

Berle, Adolf, and Means, Gardiner, *The Modern Corporation and Private Property*. New York: Macmillan, 1932.

Bhagat, Sanjai, and Black, Bernard, "The Uncertain Relationship Between Board Composition and Firm Performance." *The Business Lawyer*. 54, 3: 921-963, 1999.

Bhagat, Sanjai, Carey, Dennis, and Elson, Charles, "Director Ownership, Corporate Performance, and Management Turnover." *The Business Lawyer*. 54, 3: 885-919, 1999.

Black, Bernard, "Does Corporate Governance Matter? A Crude Test Using Russian Data." *University of Pennsylvania Law Review*. 149, 6: 2131-2150, 2001.

Black, B., Jang, H., and Kim, W., "Does Corporate Governance Affect Firm Value? Evidence from Korea." Working Paper No. 237, Stanford Law School, 2002.

Carleton, Willard, Nelson, James, and Weisbach, Michaels, "The Influence of Institutions on Corporate Governance through Private Negotiations: Evidence from TIAA-CREF." *The Journal of Finance*. 53,4: 1335-1362, 1998.

Che, Jiahua, and Qian, Yingyi, "Institutional Environment, Community Government, and Corporate Governance: Understanding China's Township Village Enterprises." *Journal of Law, Economics, and Organization*. 14,1: 1-23, April 1998.

- Chen, Zhiwu, and Xiong, Peng, *The Illiquidity Discount in China*. International Center for Financial Research, Yale University, 2002.
- Cho, Myeong-Hyeon, "Ownership Structure, Investment, and The Corporate Value: An Empirical Analysis." *Journal of Financial Economics*. 47,1: 103-121, 1998.
- Claessens, Stijin, Djankov, Simeon, and Lang, Larry, "The Separation of Ownership and Control in East Asian Corporations." *Journal of Financial Economics*, 58,1: 81-112, 2000.
- CLSA, *Emerging Markets, Saints and Sinners: Who's Got Religion?* 2001.
- Denis, Diane K., and McConnell, John J., "International Corporate Governance." *Journal of Financial and Quantitative Analysis*, forthcoming, 2003.
- Dewatripont, Mathias, Maskin, Eric, and Roland, Gerard, "Soft Budget Constraints and Transition." In Maskin, Eric, and Simonovits, A., Eds. *Planning, Shortage and Transformation*. Cambridge: MIT Press, 1998.
- Durnev, Art, and Kim, E. Han, "To Steal or Not to Steal: Firm Attributes, Legal Environment, and Valuation." Working Paper, 2002.
- Gompers, Paul, Ishii, Joy, and Metrick, Andrew, "Corporate Governance and Equity Prices," Working Paper No. 8449: NBER, 2001.
- Greene, William, *Econometric Analysis*, New York, Macmillan, 1990.
- Groves, Theodore, Hong, Yongmiao, McMillan, John, and Naughton, Barry, "Autonomy and Incentives in Chinese State Enterprises." *Quarterly Journal of Economics*. 109,1: 183-209, February 1994.

- Groves, Theodore, Hong, Yongmiao, McMillan, John, and Naughton, Barry, "China's Evolving Managerial Labor Market." *Journal of Political Economy*. 103,4: 873-892, August 1995.
- Johnson, S., La Porta, Rafael, Lopez-de-Silanes, F., and Shleifer, Andrei, "Tunneling." *American Economic Review Papers and Proceedings*, XC, 22-27, 2000.
- Joh, Sung Wook, "Corporate Governance and Firm Profitability: Evidence from Korea before the Economic Crisis." *Journal of Financial Economics*, forthcoming.
- Karpoff, Jonathan, Malatesta, Paul, and Walkling, Ralph, "Corporate Governance and Shareholder Initiatives: Empirical Evidence." *Journal of Financial Economics*, 42, 3:365-395, November 1996.
- Klapper, Leora F. and Love, Inessa, "Corporate Governance, Investor Protection and Performance in Emerging Markets," World Bank Working Paper, 2002.
- La Porta, Rafael, Lopez-de-Silanes, Flowrencio, Shleifer, Andrei, and Vishny, Robert W., "Legal Determinants of External Finance." *Journal of Finance*. 52, 3:1131-1150, 1997.
- La Porta, Rafael, Lopez-de-Silanes, Flowrencio, Shleifer, Andrei, and Vishny, Robert W., "Law and Finance." *Journal of Political Economy*. 106: 1112-1155, 1998.
- La Porta, Rafael, Lopez-de-Silanes, Flowrencio, and Shleifer, Andrei, "Corporate Ownership Around The World." *Journal of Finance*. 54: 471-517, 1999.
- La Porta, Rafael, Lopez-de-Silanes, Flowrencio Shleifer, Andrei, and Vishny, Robert W., "Investor Protection and Corporate Valuation." *Journal of Finance*. 57: 1147-1170, 2002.
- Li, David, and Wu, Changqi, "The Ownership School vs. the Management School of State Enterprise Reform: Evidence from China." William Davidson Institute Working Paper No. 435, the University of Michigan Business School, 2002.

- Li, Wei, "The Impact of Economic Reform on the Performance of Chinese State Enterprises, 1980-1989." *Journal of Political Economy*. 105, 5: 1080-1106, October 1997.
- Liu, Qiao and Lu, Joe, "Earnings Management to Tunnel: Evidence from China's Listed Companies." Working Paper, CCFR, University of Hong Kong, 2002.
- McKinsey & Company, *McKinsey Quarterly*, various issues in 1998-2002.
- McKinsey & Company, "Corporate Governance Develops in Emerging Markets." *McKinsey on Finance*. 3:15-18, Winter 2002.
- Millstein, Ira, and MacAvoy, Paul, "Active Board of Directors and Performance of the Large Publicly Traded Corporation." *Columbia Law Review*, 98, 1998.
- Qian, Yingyi, "Reforming Corporate Governance and Finance in China." In Aoki, Masahiko, and Kim, Hyung-Ki, Eds. *Corporate Governance in Transitional Economies: Insider Control and The Role of Banks*, 215-252. Economic Development Institute Development Series. Washington, D.C.: World Bank, 1995.
- Qian, Yingyi, "Enterprise Reform in China: Agency Problems and Political Control." *Economics of Transition*. 4, 2: 427-447, October 1996.
- Shirley, Mary M., Xu, Lixin Colin, "Empirical Effects of Performance Contracts: Evidence from China." *Journal of Law, Economics, and Organization*. 17,1: 168-200, April 2001.
- Shleifer, Andrei and Vishny, Robert W., "A Survey of Corporate Governance." *Journal of Finance*, 52:737-783, 1997.
- Sundaramurthy, Chamu, Mahoney, James, and Mahoney, Joseph, "Board Structure, Anti-takeover Provisions, and Stockholder Wealth," *Strategic Management Journal*. 18:3, March 1997.
- Tian, Lihui, "Government Shareholding and The Value of China's Modern Firms." Working

Paper, London Business School, 2002.

Xu, Lixin Colin, "Control, Incentives and Competition: The Impact of Reform on Chinese State-Owned Enterprises." *Economics of Transition*. 8,1: 151-173, 2000.

Xu, Xiaonian and Wang, Yan, "Ownership Structure and Corporate Governance in Chinese Stock Companies." *China Economic Review*. 10,1: 75-98, Spring 1999.

Zhang, Anming, Zhang, Yimin, Zhao, Ronald, "Impact of Ownership and Competition on the Productivity of Chinese Enterprises." *Journal of Comparative Economics*. 29,2: 327-346, June 2001.

Zheng, Jinghai, Liu, Xiaoxuan, and Bigsten, Arne, "Ownership Structure and Determinants of Technical Efficiency: An Application of Data Envelopment Analysis to Chinese Enterprises (1986-1990)." *Journal of Comparative Economics*. 26,3: 465-484, September 1998.

Appendix: Variable Definition

- (1) The CEO is the chairman or a vice chairman of the board of directors – *ceo_is_top_dir* dummy.
- (2) The proportion of outsider directors – *out_ratio*– the ratio of the number of directors without pay with respect to the total number of directors.
- (3) Shareholding by the top five officials of the firm – *top5*.
- (4) Shareholding percentage of the largest shareholder – *top1*.
- (5) The firm has a parent company – *parent* dummy, equals one if the firm has a parent company, zero otherwise
- (6) Concentration of shareholding in the hands of the second to the tenth largest shareholders – *cstr2_10* = sum of squares of the percentage shareholding by the 2nd to the 10th largest shareholders, and then take logarithm.
- (7) *hbshare*, dummy, equals one if the firm also issues foreign shares (B&H)
- (8) *so_top1*, dummy, equals one if the controlling shareholder is also a state share owner.
- (9) *top1_sq*, the square of *top1*.
- (10) *Tobin's q*¹¹ is defined as

$$Tq = \frac{MVCS + BVPS + BVLTD + BVINV + BVCL - BVCA}{BVTA}$$

Where

MVCS = the market value of the firm's common stock shares;

BVPS = the book value of the firm's preferred stocks;

BVLTD = the book value of the firm's long-term debt;

BVINV = the book value of the firm's inventories;

BVCL = the book value of the firm's current liabilities;

BVCA = the book value of the firm's current assets; and

¹¹ Following Chung, K. H. and S. W. Pruitt (1994) "A Simple Approximation of Tobin's *q*." *Financial Management* 23, 70 – 74.

$BVTA$ = the book value of the firm's total assets.

As there is no preferred stock in China, the above formula reduces to:

$$Tq = \frac{MVCS + BVLTD + BVINV + BVCL - BVCA}{BVTA}$$

The Tq_{70} , and Tq_{80} are Tobin's q adjusted by illiquidity discount of 70% and 80% respectively. Specifically, we multiply the amount of liquidable shares by the market price and the amount of illiquidable shares by 30% and 20% of the market share price respectively to obtain the value of equity in the Tobin's q formula.

(11) Market/Book ratio (MB). This variable is defined as following:

$$\begin{aligned} MB &= \frac{\text{Market value of common equity} + \text{book value of total debt}}{\text{Book value of total asset}} \\ &= \frac{MVCS + BVLTD + BVCL}{BVTA} \end{aligned}$$

The MB_{70} , and MB_{80} are similarly defined as in Tobin's q.

(12) $\ln(\text{sales})$: natural logarithm of main operation income, as a proxy of firm size.

(13) $\ln(\text{total assets})$: natural logarithm of the book value of total assets.

(14) Leverage ratio is defined as the ratio of book value of debt/total asset

(15) Capital/Sales ratio is calculated as the book value of total tangible asset divided by total sales

(16) Operation Income/Sales ratio is defined as the ratio of operation profit divided by total sales

(17) Industry dummies are defined according to Chinese Security Regulatory Commission (CSRC)'s industry classification. All listed firms are classified into sixteen industries and we take the agriculture industry as the base industry.

Table I. Summary Statistics

This table presents the summary statistics of the governance and valuation variables, which are defined in the appendix.

Panel A: Corporate Governance Variables

<i>Variable</i>	<i>No. of Obs</i>	<i>Mean</i>	<i>Median</i>	<i>S. D.</i>	<i>Min.</i>	<i>Max.</i>
<i>ceo_is_top_dir</i>	1004	0.334	0	0.472	0	1
<i>out_ratio</i>	1004	0.484	0.545	0.274	0	1
<i>top5</i>	1004	2.048E-4	3.45E-5	1.443E-3	0	0.037
<i>top1</i>	1004	45.300	44.995	17.615	2.140	88.580
<i>parent</i>	1004	0.787	1	0.410	0	1
<i>cstr2_10</i>	1004	3.204	3.780	2.796	-6.526	7.273
<i>hbshare</i>	1004	0.097	0	0.296	0	1
<i>so_top1</i>	1004	0.569	1	0.496	0	1

Panel B: Valuation Variables

<i>Variable</i>	<i>No. of Obs</i>	<i>Mean</i>	<i>Median</i>	<i>S. D.</i>	<i>Min.</i>	<i>Max.</i>
TQ	1004	3.619	3.202	1.987	0.880	17.992
Tq_70	1004	2.049	1.787	1.086	0.500	8.928
Tq_80	1004	1.824	1.593	0.975	0.396	8.046
MB	1004	4.043	3.608	1.997	1.300	18.370
MB_70	1004	2.046	1.806	1.125	0.381	8.923
MB_80	1004	1.822	1.602	1.010	0.351	8.042

**Table II, Regression Results of Valuation on Individual Governance Variables
(with size, capital intensity, operating income margin,
leverage, and industry dummies controlled)**

The table reports estimated coefficients, t-statistics (in parentheses), and adjusted-R²'s from regressions of Tobin's q values and market/book ratio values on individual governance variables.

	TQ	Tq_70	Tq_80	MB	MB_70	MB_80
ceo_is_top_dir	-0.1248 (1.184)	-0.0497 (0.835)	-0.0390 (0.724)	-0.1192 (1.140)	-0.0441 (0.754)	-0.0334 (0.632)
out_ratio	0.3965** (2.106)	0.1094 (1.029)	0.0684 (0.711)	0.3833** (2.051)	0.0962 (0.920)	0.0552 (0.585)
top5	-9.6105 (0.285)	-0.0843 (0.004)	1.2765 (0.074)	-7.1693 (0.214)	2.3568 (0.126)	3.7177 (0.220)
top1	-0.0376** (2.457)	-0.0279*** (3.221)	-0.0265*** (3.381)	-0.0364** (2.396)	-0.0267*** (3.134)	-0.0253*** (3.290)
top1_sq	0.0007*** (4.336)	0.0003*** (3.168)	0.0002*** (2.789)	0.0007*** (4.332)	0.0003*** (3.156)	0.0002*** (2.771)
parent	-0.2711** (2.036)	-0.0868 (1.154)	-0.0605 (0.889)	-0.2513* (1.901)	-0.0670 (0.906)	-0.0407 (0.610)
cstr2_10	0.1925*** (7.535)	0.0407*** (2.819)	0.0190 (1.455)	0.1986*** (7.829)	0.0468*** (3.294)	0.0251* (1.957)
hbshare	0.7777*** (4.495)	0.5830*** (5.965)	0.5552*** (6.277)	0.7354*** (4.282)	0.5408*** (5.626)	0.5130*** (5.913)
so_top1	-0.2000* (1.904)	-0.1130* (1.905)	-0.1006* (1.874)	-0.2051** (1.968)	-0.1182** (2.026)	-0.1058** (2.009)
ln_sales	-0.8261*** (17.054)	-0.4449*** (16.261)	-0.3905*** (15.770)	-0.8408*** (17.485)	-0.4596*** (17.082)	-0.4052*** (16.684)
Capital/Sales	0.0184 (1.000)	0.0016 (0.154)	-0.0008 (0.085)	0.0084 (0.459)	-0.0084 (0.823)	-0.0108 (1.172)
Operation Income/Sales	0.0174 (0.934)	0.0063 (0.602)	0.0047 (0.499)	0.0069 (0.373)	-0.0042 (0.403)	-0.0057 (0.616)
Leverage	-2.0546*** (6.959)	-0.7167*** (4.297)	-0.5256*** (3.483)	-2.1420*** (7.308)	-1.8041*** (11.000)	-1.6130*** (10.896)
Intercept	20.2755*** (18.843)	11.5466*** (18.998)	10.2997*** (18.726)	21.0068*** (19.667)	12.2780*** (20.541)	11.0310*** (20.447)
Obs. No.	1004	1004	1004	1004	1004	1004
Adjusted R ²	0.411	0.371	0.361	0.426	0.433	0.427

Note: (1) Industrial Dummies have been included but are not reported.

(2) *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively.

**Table IIb, Regression Results of Valuation on Individual Governance Variables
(with size controlled)**

The table reports estimated coefficients, t-statistics (in parentheses), and adjusted-R²'s from regressions of Tobin's q values and market/book ratio values on individual governance variables.

	Tq	Tq_70	Tq_80	MB	MB_70	MB_80
ceo_is_top_dir	-0.0731 (0.660)	-0.0295 (0.480)	-0.0233 (0.421)	-0.0711 (0.643)	-0.0126 (0.198)	-0.0064 (0.112)
out_ratio	0.3645* (1.856)	0.1087 (0.997)	0.0722 (0.735)	0.3331* (1.697)	0.0597 (0.528)	0.0231 (0.227)
top5	21.4873 (0.603)	15.2723 (0.772)	14.3844 (0.808)	25.6752 (0.721)	24.4774 (1.195)	23.5896 (1.278)
top1	-0.0327** (2.054)	-0.0267*** (3.021)	-0.0259*** (3.246)	-0.0306* (1.918)	-0.0197** (2.151)	-0.0189** (2.284)
top1_sq	0.0007*** (3.906)	0.0003*** (2.952)	0.0002*** (2.630)	0.0007*** (3.816)	0.0002** (2.310)	0.0002* (1.939)
parent	-0.2697* (1.935)	-0.0934 (1.207)	-0.0682 (0.979)	-0.2481* (1.781)	-0.0654 (0.816)	-0.0402 (0.557)
cstr2_10	0.2002*** (7.467)	0.0438*** (2.944)	0.0215 (1.603)	0.2073*** (7.734)	0.0504*** (3.268)	0.0281** (2.021)
Hbshare	0.5335*** (2.973)	0.4548*** (4.565)	0.4435*** (4.942)	0.4821*** (2.687)	0.3728*** (3.612)	0.3616*** (3.889)
so_top1	-0.4102*** (3.477)	-0.2205*** (3.367)	-0.1934*** (3.279)	-0.4282*** (3.631)	-0.2535*** (3.736)	-0.2264*** (3.704)
ln_sales	-0.8592*** (19.069)	-0.4431*** (17.715)	-0.3837*** (17.027)	-0.8696*** (19.306)	-0.4694*** (18.110)	-0.4100*** (17.559)
Intercept	20.2997*** (20.777)	11.4300*** (21.072)	10.1628*** (20.798)	20.8611*** (21.359)	11.7646*** (20.932)	10.4975*** (20.736)
Obs. NO.	1004	1004	1004	1004	1004	1004
Adj. R ²	0.335	0.314	0.310	0.342	0.314	0.309

Note: *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively.

Table III, Factor Loadings

This table displays the coefficients of the eight raw scores of governance in their first principal component.

Variable	Loading
top1	-0.626
cstr2_10	0.595
out_ratio	0.230
top5	0.037
so_top1	-0.227
Parent	-0.378
ceo_is_top_dir	0.023
hbshare	0.071

Table IV, Regression Results of Valuation Measures on the Governance Index

This table reports the estimated coefficients, t-statistics (in parentheses), and adjusted-R² from regressions of Tq, Tq_70, Tq_80, MB, MB_70 and MB_80 on the governance index (G-Index).

Panel A: Without control variables

	Tq	Tq_70	Tq_80	MB	MB_70	MB_80
G-Index	0.3214*** (7.484)	0.2352*** (10.253)	0.2228*** (10.883)	0.3241*** (7.514)	0.2262*** (9.451)	0.2139*** (10.003)
Intercept	3.6191*** (59.267)	2.0488*** (62.812)	1.8245*** (62.653)	4.0426*** (65.895)	2.0463*** (60.112)	1.8220*** (59.908)
Obs. NO.	1004	1004	1004	1004	1004	1004
Adj. R ²	0.052	0.094	0.105	0.052	0.081	0.090

Panel B: With control variables

	Tq	Tq_70	Tq_80	MB	MB_70	MB_80
G-Index	0.1268*** (3.228)	0.1260*** (5.837)	0.1259*** (6.445)	0.1250*** (3.203)	0.1242*** (5.858)	0.1241*** (6.491)
ln_sales	-0.7420*** (15.187)	-0.3978*** (14.817)	-0.3486*** (14.352)	-0.7590*** (15.634)	-0.4148*** (15.731)	-0.3656*** (15.379)
Capital/Sales	0.0276 (1.439)	0.0065 (0.613)	0.0034 (0.361)	0.0175 (0.916)	-0.0037 (0.355)	-0.0067 (0.718)
Operation Income/Sales	0.0225 (1.161)	0.0090 (0.845)	0.0071 (0.733)	0.0120 (0.622)	-0.0015 (0.147)	-0.0035 (0.368)
Leverage	-1.9854*** (6.489)	-0.6434*** (3.827)	-0.4516*** (2.969)	-2.0828*** (6.850)	-1.7408*** (10.541)	-1.5490*** (10.404)
Intercept	18.9876*** (18.740)	10.0746*** (18.096)	8.8013*** (17.474)	19.8371*** (19.702)	10.9240*** (19.976)	9.6507*** (19.573)
Obs. NO.	1004	1004	1004	1004	1004	1004
Adj. R ²	0.354	0.347	0.337	0.368	0.413	0.408

Note: (1) Industrial Dummies have been included but are not reported.

(2) *, ** and *** indicate significance at 10%, 5% and 1% level, respectively.

Table V Summary Statistics of Tq by Groups

This table presents the summary statistics of Tq by five groups (grades) according to the G-Index. Grade one represents the lowest ranking, while grade five the highest ranking. This table also reports the result of T-tests on the differentials of Tq between groups.

Panel A: Summary by Grade Groups

Grade	No. of Obs.	Mean	S.D.	Min	Median	Max
1	200	3.060	1.454	0.988	2.790	10.899
2	201	3.393	1.763	0.880	3.115	15.102
3	201	3.491	1.818	1.068	3.033	13.105
4	201	3.673	1.989	1.034	3.423	12.913
5	201	4.475	2.493	1.177	3.908	17.992
Total	1004	3.619	1.987	0.880	3.202	17.992

Panel B: T-tests on the Differentials of Tq between Groups.

This panel runs a T test: whether the mean of Tq in grade=I is larger than that in grade=J (where I>J).

	I=2	I=3	I=4	I=5
J=1	2.065**	2.623***	3.523***	6.944***
J=2		0.548	1.491*	5.020***
J=3			0.956	4.519***
J=4				3.563***

Note: *, ** and *** indicate significance at 10%, 5% and 1% level, respectively.

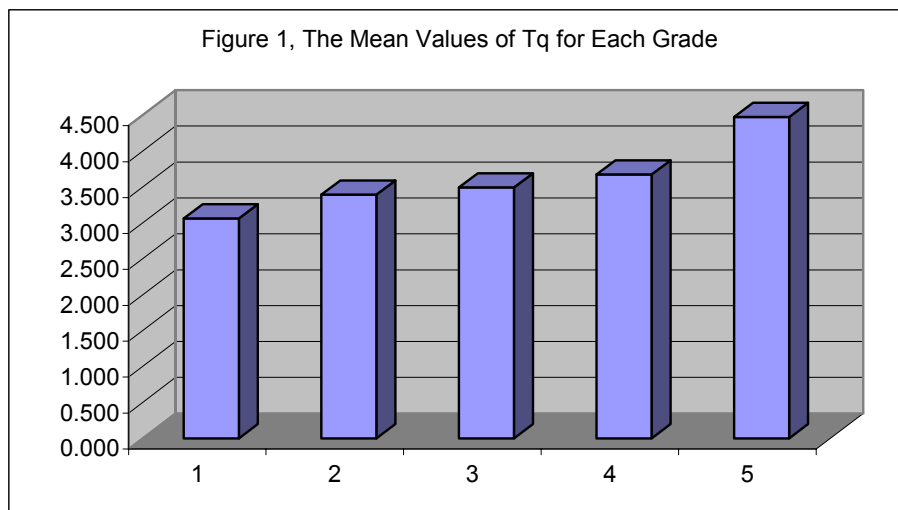


Table VI Summary Statistics of Tq_70 by Groups

This table presents the summary statistics of Tq_70 by five groups (grades) according to the G-Index. Grade one represents the lowest ranking, while grade five the highest ranking. This table also reports the result of T-tests on the differentials of Tq_70 between groups.

Panel A: Summary by Grade Groups.

<i>Grade</i>	<i>No. of Obs.</i>	Mean	<i>S.D.</i>	Min	Median	Max
1	200	1.580	0.727	0.507	1.431	5.286
2	201	1.912	0.951	0.500	1.791	8.928
3	201	1.993	0.955	0.665	1.758	6.732
4	201	2.172	1.137	0.698	1.932	8.267
5	201	2.584	1.317	0.644	2.181	8.643
Total	1004	2.049	1.086	0.500	1.787	8.928

Panel B: T-tests on the Differentials of Tq_70 between Groups.

This panel runs a T test: whether the mean of Tq_70 in grade=I is larger than that in grade=J (where I>J).

	I=2	I=3	I=4	I=5
J=1	3.919***	4.876***	6.215***	9.459***
J=2		0.862	2.492***	5.871***
J=3			1.706**	5.149***
J=4				3.360***

Note: *, ** and *** indicate significance at 10%, 5% and 1% level, respectively.

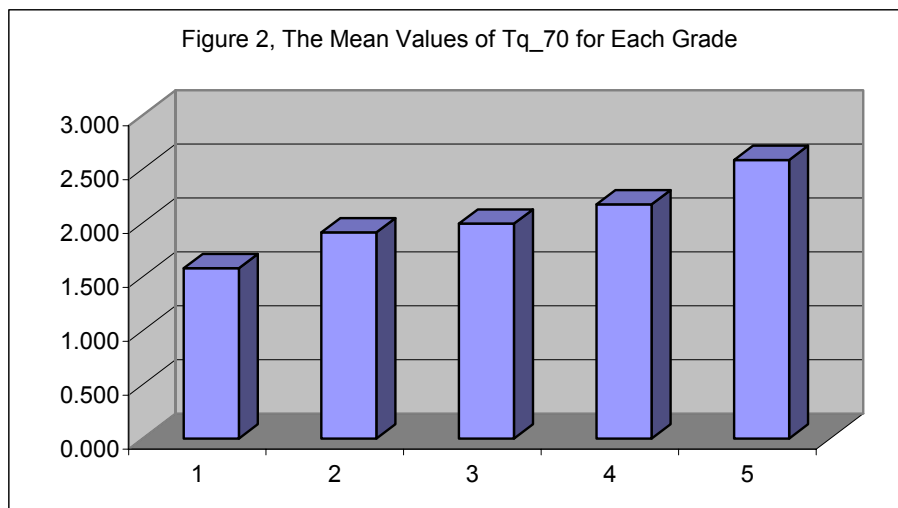


Table VII Summary Statistics of Tq_80 by Groups

This table presents the summary statistics of Tq_80 by five groups (grades) according to the G-Index. Grade one represents the lowest ranking, while grade five the highest ranking. This table also reports the result of T-tests on the differentials of Tq_80 between groups.

Panel A: Summary by Grade Groups.

<i>Grade</i>	<i>No. of Obs.</i>	Mean	<i>S.D.</i>	Min	Median	Max
1	200	1.369	0.631	0.396	1.244	4.485
2	201	1.700	0.847	0.406	1.575	8.046
3	201	1.779	0.852	0.591	1.586	6.404
4	201	1.958	1.036	0.636	1.737	7.631
5	201	2.314	1.171	0.500	1.959	7.308
Total	1004	1.824	0.975	0.396	1.593	8.046

Panel B: T-tests on the Differentials of Tq_80 between Groups.

This panel runs a T test: whether the mean of Tq_80 in grade=I is larger than that in grade=J (where I>J).

	I=2	I=3	I=4	I=5
J=1	4.438***	5.486***	6.875***	10.066***
J=2		0.94	2.731***	6.025***
J=3			1.883**	5.233***
J=4				3.232***

Note: *, ** and *** indicate significance at 10%, 5% and 1% level, respectively.

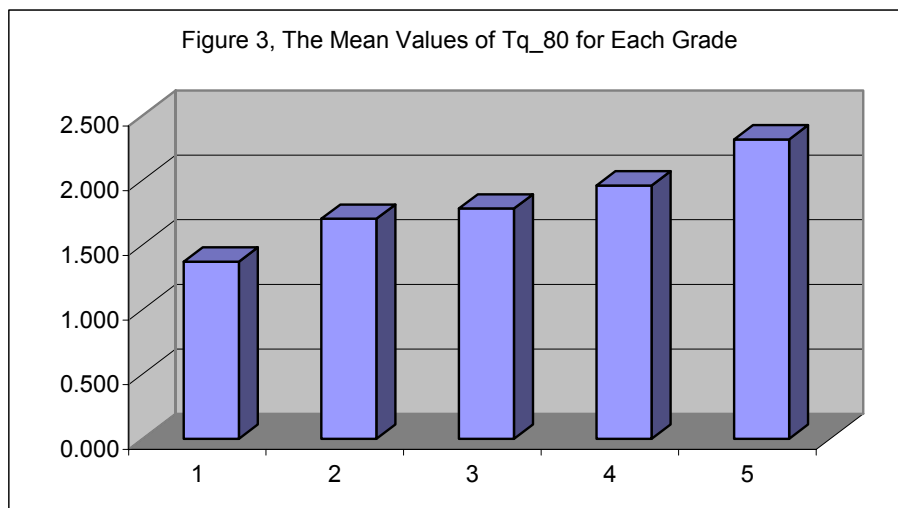


Table VIII Summary Statistics of MB by Groups

This table presents the summary statistics of MB by five groups (grades) according to the G-Index. Grade one represents the lowest ranking, while grade five the highest ranking. This table also reports the result of T-tests on the differentials of MB between groups.

Panel A: Summary by Grade Groups.

Grade	No. of Obs.	Mean	S.D.	Min	Median	Max
1	200	3.471	1.466	1.517	3.159	11.228
2	201	3.835	1.775	1.300	3.494	15.304
3	201	3.903	1.843	1.521	3.458	13.688
4	201	4.093	2.013	1.375	3.805	13.314
5	201	4.909	2.473	1.511	4.307	18.370
Total	1004	4.043	1.997	1.300	3.608	18.370

Panel B: T-tests on the Differentials of MB between Groups.

This panel runs a T test: whether the mean of MB in grade=I is larger than that in grade=J (where I>J).

	I=2	I=3	I=4	I=5
J=1	2.236**	2.593***	3.534***	7.083***
J=2		0.375	1.361*	5.000***
J=3			0.987	4.625***
J=4				3.628***

Note: *, ** and *** indicate significance at 10%, 5% and 1% level, respectively.

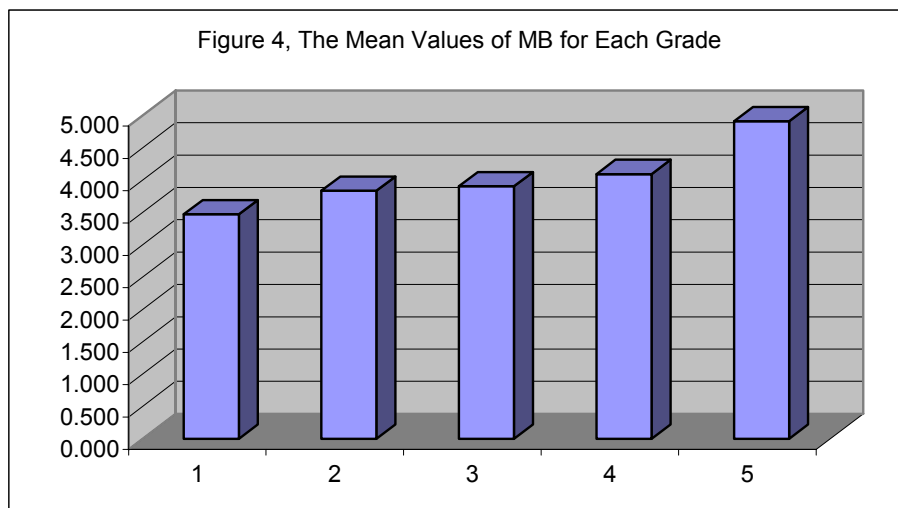


Table IX Summary Statistics of MB_70 by Groups

This table presents the summary statistics of MB_70 by five groups (grades) according to the G-Index. Grade one represents the lowest ranking, while grade five the highest ranking. This table also reports the result of T-tests on the differentials of MB_70 between groups.

Panel A: Summary by Grade Groups.

<i>Grade</i>	<i>No. of Obs.</i>	Mean	<i>S.D.</i>	Min	Median	Max
1	200	1.590	0.781	0.438	1.439	5.321
2	201	1.939	0.994	0.440	1.802	8.923
3	201	1.982	1.023	0.551	1.785	7.244
4	201	2.150	1.191	0.381	1.926	8.096
5	201	2.569	1.334	0.569	2.295	8.918
Total	1004	2.046	1.125	0.381	1.806	8.923

Panel B: T-tests on the Differentials of MB_70 between Groups.

This panel runs a T test: whether the mean of MB_70 in grade=I is larger than that in grade=J (where I>J).

	I=2	I=3	I=4	I=5
J=1	3.913***	4.323***	5.574***	8.974***
J=2		0.432	1.930**	5.367***
J=3			1.514*	4.945***
J=4				3.320***

Note: *, ** and *** indicate significance at 10%, 5% and 1% level, respectively.

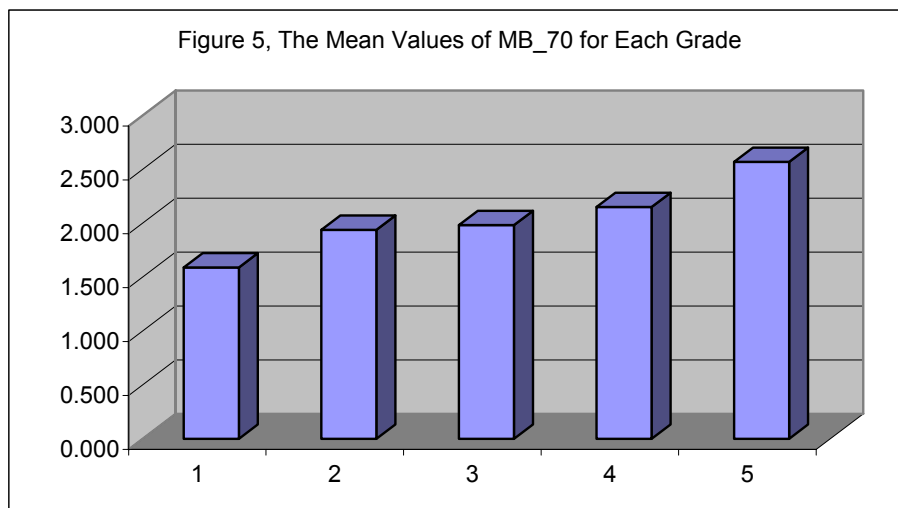


Table X Summary Statistics of MB_80 by Groups

This table presents the summary statistics of MB_80 by five groups (grades) according to the G-Index. Grade one represents the lowest ranking, while grade five the highest ranking. This table also reports the result of T- tests on the differentials of MB_80 between groups.

Panel A: Summary by Grade Groups.

<i>Grade</i>	<i>No. of Obs.</i>	Mean	<i>S.D.</i>	Min	Median	Max
1	200	1.378	0.684	0.370	1.253	4.519
2	201	1.727	0.884	0.389	1.597	8.042
3	201	1.768	0.913	0.493	1.583	6.916
4	201	1.936	1.085	0.351	1.742	7.733
5	201	2.299	1.187	0.522	2.060	7.582
Total	1004	1.822	1.010	0.351	1.602	8.042

Panel B: T-tests on the Differentials of MB_80 between Groups.

This panel runs a T test: whether the mean of MB_80 in grade=I is larger than that in grade=J (where I>J).

	I=2	I=3	I=4	I=5
J=1	4.422***	4.844***	6.158***	9.520***
J=2		0.46	2.111**	5.474***
J=3			1.672**	5.020***
J=4				3.202***

Note: *, ** and *** indicate significance at 10%, 5% and 1% level, respectively.

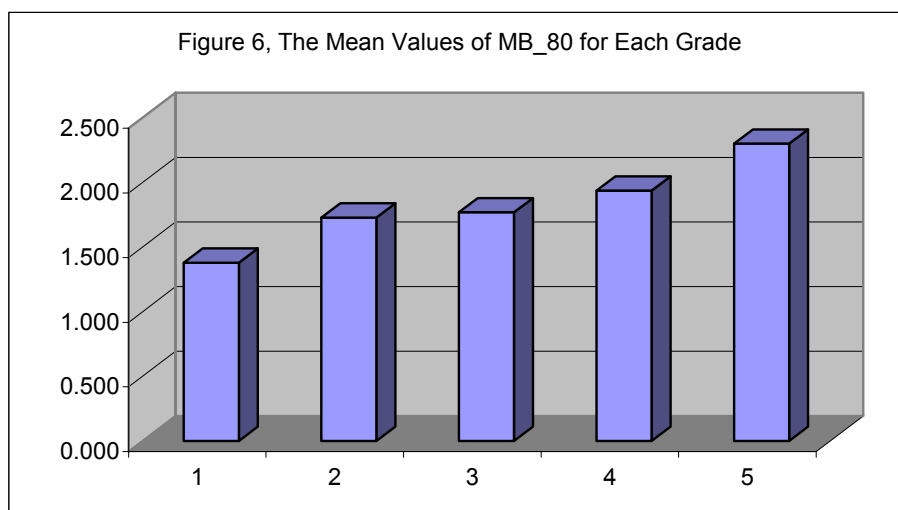


Table XI : Average Single Governance Premium for Selected Economics

Country	Industry	Effect
Indian	Chemicals	10.6
	Textiles	12.4
Korea	Auto Parts and Equipment	10.0
	Textiles	9.8
Malaysia	Building Materials	10.4
	Engineering and Construction	10.0
Mexico	Food	11.8
	Retail	11.8
Taiwan	Electronics	10.7
	Food	10.7
Turkey	Building Materials	12.0
	Food	12.2
	Textiles	11.8

Source: McKinsey (2002)

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