

# **Law, Economic, Corporate Governance, and Corporate Scandal in a Transition Economy: Insight from China**

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# **Law, Economic, Corporate Governance, and Corporate Scandal in a Transition Economy: Insight from China**

## **Abstract**

There is much higher ratio of firms with the incidence of scandal in a transition economy such as China than in developed economy. This paper empirically examines whether certain corporate governance mechanism are related to the probability of a firm is associated with corporate scandal. We examine Chinese listed firms that are enforced by Chins Security Regulation Committee (CSRC) or stock exchanges. We find that several key governance characteristics are related to the probability of a firm to commit scandal. These include the types controller of the firm, the ownership level of the largest shareholder, the stock holding of the chairman, and ratio of paid supervisors on the Supervisory Committee. Our findings suggest that the governance mechanism especially ownership does matter in avoiding serious corporate scandal in a transition economy such as China. There is no evidence that several other governance characteristics are related to the probability of a firm commit scandal, including the board size, independent directors, the institution ownership, and the size of Supervisory Committee. We also find that the level of a region's economy development is negatively related to the probability of a firm in the region to commit scandals. As a region's GDP per capita increase, a firm in the region will be less likely to commit fraud. In addition we find that in a region where the number of commercial cases investigated by procurator is larger, a firm in the region is more likely to commit scandal. These suggest that the procuratorate system is not effective and when legal system is not effective a firm is more likely to commit scandal if there are more firms or people commit fraud or default in commercial contracts in that "neighborhood". We find a similar but non-linear relation between the number of commercial suits on the court in a province and the probability of a firm to commit scandal in that region. As the number of commercial suits on the court in a province increases, the probability of a firm to commit scandal rises; when the number of commercial suits on the court reach certain level, the probability of a firm to commit scandal falls. It suggests that when the court system becomes effective and more people and firms go to court to protect themselves, the firms will be constraint in committing fraud. Overall we find that in China corporate governance is essential in avoiding corporate scandal. Moreover, in a transition economy the level of economic development and legal system are also related to firm's probability to commit fraud.

**JEL classification:** G34, G38

**Key Words:** Corporate Scandal, Corporate Governance, Law, Transition Economy

## **I. Introduction**

Recent corporate scandals in prominent companies, such as Enron and Worldcom, in US and Western Europe have big impact on investor confidence. Many of these firms experience a sharp decline in credit ratings of their debt issues. The scandals in firms have largely been blamed on weak internal controls and governance. Major changes have taken place following these scandals. As a milestone, the Sarbanes-Oxley Bill was signed in 2002, which imposes a number of corporate governance rules on all public companies with stock traded in the US. Government or regulation authorities in many other countries follow US in their ways. In fact in undeveloped economy corporate scandals are more common, and may have stymied the progress of economy development in these countries. Examine the effectiveness of governance mechanism in avoiding corporate scandals in transition economy are even more important. This paper examines the corporate governance and corporate scandal in China, the largest transition economy in the world. While publicly listed firms are only a small portion of China's economy, and unlisted firms seem to have higher likelihood to commit scandals than listed, we mainly focus on listed firms due to data availability.

It has been over ten years since stock market was established in China. China stock market has been playing an unneglectable role in the rapid economic growth. However, there have been so many listed firms committed fraud. Since 1993, about 200 listed firms among 1200 have been subject to enforcement action by China Security Regulation Committee (CSRC), Shenzhen Stock Exchange (SZSE) and Shanghai Stock Exchange (SHSE). The ratio of firms committing fraud in all listed firms in China is far above the ratio of scandal firms in other countries, such as US. Since fraud is more common in a transition economy, to study corporate scandal in a transition economy is an even more important issue. Are there effective corporate governance characteristics avoiding corporate scandal while other do not help to protect minority shareholders? This leads to a fundamental question: does corporate governance matter in a transition economy such as China, and do we need corporate governance mechanism? This paper tries to add to the literature in that aspect.

The definition of (financial) scandal employed in this paper is limited to the definition of CSRC, SZSE and SHSE for violation of security laws and rules. Our research relies on the assumption that CSRC has (on average) correctly identified firms that intentionally commit scandal. We analyze a sample of 160 Chinese listed firms that was announced by CSRC, SZSE and SHSE for security law violations during the period of 1993- 2003 and an industry-size matched control sample of 160 non-scandal firms. We have assembled a unique, hand-collected dataset that contains detailed information on corporate governance characteristics of these 320 firms. We find that several governance characteristics are related to the probability of a firm commit scandal. These include the types of controller of the firm, the ownership level of the largest shareholder, the stock holding of the chairman, and ratio of paid

supervisor on the Supervisory Committee. There is no evidence that several other governance characteristics are related to the probability of a firm commit scandal, including the board size, independent directors, the institution ownership, and the size of Supervisory Committee.

To our knowledge, this is the first empirical study in analyzing the relation between corporate governance and corporate scandal in China. There exist prior studies examining the relation between corporate governance mechanisms and either earnings management (e.g., Klein (2002)), SEC enforcement actions for violations of GAAP (e.g., Beasley (1996) and Dechow, Sloan and Sweeney (1996)), or accounting restatement (Agrawal and Chadha, 2003) in US. The number of the SEC enforcement actions is not large in US thus the empirical test is limited by the sample size. Earning management and restatement may not necessarily be equivalent to management fraud or manipulation. To assess earnings management or accounting restatement is intentionally management misbehavior and link it to corporate governance is arbitrary. In a transition economy such as China, the ratio of firms commit fraud is much higher than that of US. This facilitates our empirical tests. Serious scandal or fraud is more common in a transition economy and thus study corporate scandal in a transition economy is an even more important issue.

Prior literature discusses the relation between corporate governance and earnings management, SEC enforcement or accounting restatement in US. However, to our knowledge, this is the first empirical study in analyzing the relation between local economy development and legal environments, and corporate scandal, in addition to corporate governance. China is the largest developing country in the world. Despite its poor legal and financial systems, China has one of the fastest growing economies in the world<sup>1</sup>. However, regions in China have very different level of economy development as shown by the variation of local GDP per capital (here we employ the provincial level data). Although written law is similar for regions in China, the effectiveness of law varies significantly from region to region. The variation among regions in China provide a good ground for us to test the effect of economic development and legal system development on firm's decision to commit scandal. We are able to take the first step in empirically analyzing the relation between region economic and legal development and the probability of a firm in the region to commit scandal. While there exist literature compare legal system in different countries (e.g., LaPorta, Lopez-de-Silanes, shleifer, and Vishny, 1998), we add to the literature in that we studies regions with different level of development of economy and legal system within a country. Among a few studies on law and economic development in China, Allen, Qian, and Qian (2002) study the Chinese legal system by using the La Porta et al (1998) legal indices and find that the Chinese legal system is incomplete compared to with La Porta et al's sample countries. However as Alford (2000) and Lu and Yao

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<sup>1</sup> The growth rate of China's GDP has been around 8% for the past 25 years, the highest among the largest economies in the world. See Wall Street Journal (01/21/2004), World Bank, and Asian Development Bank for details.

(2004) point out, it is insufficient to just look at China's formal laws when one evaluates the Chinese legal system; instead the effectiveness of law enforcement is more important. This paper focus on the measure of law enforcement and find some evidence that legal enforcement and legal environment are related to the probability that a firm commit scandal.

We find that regional economy development is negatively related to the probability of a firm in the region commit scandals. In addition we find when the legal system is not effective, a firm is more likely to commit scandal when there are larger number of other firms, organizations or people in the region commit crime, fraud or default in commercial contracts. These suggest that in China's transition economy the level of economy development and law effectiveness are important factors influencing a firm's decision to commit scandal.

The remainder of this paper is organized as follows. Section 2 discusses the issues. Section 3 describes the data and variables used in empirical analysis. Section 4 presents our empirical results, while section 5 concludes.

## **2. Issues and Hypothesis**

### **2.1 Corporate Governance and corporate scandal**

#### **2.1.1 Types of controller of the firm**

One of the most fundamental characteristics of Chinese listed firms is that firms with various type of controller behave very differently when making corporate decisions. In our hand collected sample, we classify the firms into six groups: the group controlled by central government, the group controlled by local government, the group controlled by non-central State Owned Enterprises (SOE), the group controlled by non-state legal person, the group controlled by natural person, and the group controlled by collectives. These types of firm controller have different incentives, face different financing and operating problems, and have very different policy. Previous studies have shown there are different agency problems associated with different types controller<sup>2</sup>. There is difference between State controller and non-state controller. Among firms controlled by State entity, the one controlled by central government is significantly different from the one controlled by local government. The one controlled by local SOE is significantly differ from the one controlled by local government, and is significantly different from the one controlled by central government as well. These firms also differ in internal control. Normally firms controlled by central government are large in size and in industry vital to national economy, thud these firms are more closely monitored by central government. As the large state enterprises vital to national economy, these firms are more responsible to community and society and have a better protection of minority shareholders. Similarly firms controlled by the local governments are important to local economy and business. There are conflicts between local government and central government, local government may pursue their own interest instead of

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<sup>2</sup> e.g., Li and Zhang (2004), Li and Zhang (2004).

interest of the entire nation. Local officials often influence the firms controlled to pursue their personal interest, either monetary or political benefits. It is an empirical issue whether these firms are more likely to commit scandal. Local SOEs are less closely monitored by government and potentially more likely to commit frauds than firms control by government. For non-state legal person controlled firms, ownership and property rights are not as clear. The firms are less “transparent” in terms of information disclosure to public. Firms controlled by non-state Legal Person are not obligated to community and social responsibility, especially in regions where economic and legal systems are less developed. Given these specific impacts of various types of firm controller on listed firms in China, we examine following hypothesis.

**H1A:** *Firms controlled by government are less likely to be associated with scandal.*

**H1B:** *Firms controlled by non-state legal person are less likely to be associated with scandal.*

### **2.1.2. Ownership**

The degree of ownership concentration affects the nature of contracting, creating agency problems. When ownership is diffuse, as is typical in US, agency problems arise from the conflict of interest between outside shareholders and managers ( Jensen and Merckling, 1976). On the other hand when ownership is concentrated, as the case in Asia, the nature of the agency problem shifts away from manager-shareholder conflicts to conflicts between the large shareholder (who is also manager) and minority shareholders.

One way to mitigate the agency problem is to increase the large shareholder’s ownership stake. The large shareholder’s higher stake in the firm means that it will cost more to expropriate the firm for private benefit. Literature documents this alignment effect in many aspects of corporate decisions. Based on this argument we expect following relation exists.

**H2A:** *As the ownership of the largest shareholder increases from zero, a firm is less likely to be associated with scandal.*

As recent literature document, one of the most important features of corporate governance outside US is ownership concentration and large shareholders’ dominance in listed firms. This is particular true in Asia (e.g., Claenssens,et al (2000), Claenssens,et al (2002), and Fan and Wong (2002)). Similarly in China the most essential characteristics of ownership structure is the dominance of large shareholder. There is no effective mechanism to monitor and restrain the large shareholders. When gaining dominance in the control rights, large shareholders could expropriate the minority shareholders and pursue their own benefit. Without effective internal control and outside monitoring, larger shareholders are more likely to commit frauds. If this argument is relative, we expect following relation exists.**H2B:** *As the ownership of the largest shareholder increases over certain level, a firm is more likely to be associated with scandal.*

### 2.1.3 Board

Fama and Jensen (1983) theorize that the board of directors is the highest internal control mechanism responsible for monitoring the actions of top management. And they suggest that the composition of individuals who serve on the board of directors is an important factor in creating a board that is an effective monitor of management actions. Further, Fama's (1980) and Fama and Jensen's (1983) theory regarding board composition would predict that higher percentages of independent directors increase the board's effectiveness as a monitor of management. Given the dominance of large shareholders in Chinese listed firms, the ratio of independent directors in board may be particularly important. However, the CEO or Chairman tends to invite someone who is less likely to oppose them to be independent directors. Many of the independent directors are actually friends of management. These "independent" directors are not really independent. Press has reported cases that independent directors fight with insider directors as well as cases that independent directors did not do anything when there is conflict between insiders and minority shareholders. It is important to empirically examine whether independent directors are real "independent" and whether independent directors can decrease firm's tendency to commit fraud. Therefore, this study empirically examines the following hypothesis.

**H3A:** *The proportion of independent members on the board of directors is lower for firms experiencing scandal than for non-scandal firms.*

We also consider more factors that might influence the board's effectiveness in monitoring the actions of management. Jensen (1993) argues that boards of directors are ineffectual monitors when the board is too large, when the board's equity ownership is small, and when the CEO is also the Chairman of the Board. A variety of studies also suggest that the composition of the board of directors determines its effectiveness, for example, DeFond and Jambalvo (1991), Beasley (1996), Dechow, Sloan and Sweeney (1996), etc. Therefore, we take into consideration the board size, the position settings of Chairman of the Board and CEO, number or proportion of directors holding shares in the Board, number or proportion of directors get paid on the Board, and the share holding of the Chairman of the Board of Directors. We empirically test the following hypothesis.

**H3B:** *The size of the board of directors is on average larger for firms committing scandal.*

**H3C:** *The firms committing financial frauds are more likely to have the same single person hold the positions of Chairman and CEO.*

**H3D:** *The firms experiencing scandal are more likely to have a smaller proportion of directors holding shares.*

**H3E:** *The proportion of the paid directors on the board is higher for firms commit scandal.*

**H3F:** *The holding shares of the Chairman of the board of directors are on average less for firms experiencing scandal than for non-fraud firms.*

#### **2.1.4 Supervisory Committee (Board of Supervisors)**

In China, every firm is required by CSRC to set up the Board of Supervisors with no less than 3 members. To make it easy to distinguish from the Board of Directors, here we use the interchangeable term “Supervisory Committee” in the paper. The Supervisors Committee performs the function of inspecting the decision of management and the effectiveness of Board of Directors, and hence is supposed to play a rather important role in the corporate governance mechanism. In this study, we investigate the supervisory committee size, the proportion of supervisors holding shares of the firm, the proportion of supervisors paid, and the holding share of the Chairman of the Board of Supervisors. Here we empirically test the following hypothesis.

**H4:** *The firms experiencing scandal are more likely to have a smaller board of supervisors, smaller proportion of supervisors holding shares, smaller proportion of paid supervisors.*

#### **2.1.5 Institution Holdings**

Institution investors may help to mitigate agency costs and prevent corporate misconduct when they actively monitor firm’s decisions. As Jarrell and Poulsen (1987) and Brickley, Lease, and Smith (1988) show, institution shareholders tend to oppose corporate that decrease shareholder value. Compare to other types of investors, Healy et al. (1999) and Bushee and Noe (2000) show that institution investors tend to pursue the stocks of firms that continuously disclose information.

In a transition economy with less developed legal system, the minority shareholders are too weak to fight with management. Institutions are key shareholders to monitor managers because they have more power in capital market and investors follow institutions in making investment. However, institution investors could collude with management in illegal activities to pursue their own interests. Literature shows institution investors can get financial benefit including transaction price lower than market price, preventing close-end fund buyback and obtaining contract of underwriting and consulting, etc. (e.g., Barclay, Holderness, and Pontiff ,1993). In China, there are cases reported in press or disclosed by CSRC in which mutual funds and trading firms manipulate the stock price, collude with firm management and make illegal profit by trading stock based on inside information. Therefore it is an empirical issue whether institution shareholders help to prevent firm misconduct or collude with managers for more corporate scandals.

**H5:** *when institute holding is higher, the firm is more likely to commit scandals.*



### 2.1.6 Economy and Legal System Development

In transition economies, especially in China, corporate scandal and fraud are more common than US, partially due to the less developed economic and legal system. The level of economy development may affect a corporate's decision to commit fraud. On one hand, in a more developed economy the people or organizations are wealthier and are more responsible to the society. People, organizations or firms are less likely to commit fraud. Furthermore, a developed economy is more open and investors have access to more corporate information. Thus there will be less room for managers to hide illegal actions. The developed economy also helps establish credit. It is important for firms to keep strong credit record, thus can decrease the likelihood of firm to commit fraud. In a less developed economy there are more incentive for people to commit fraud to pursue personal wealth. The economy development varies dramatically from region to region in China, for example from east coast provinces with the highest GDP such as Zhejiang and Shanghai to less developed west such as Gansu and Qinghai. The Chinese provincial and regional data thus provide us a ground to examine whether a region's economy development is related to the firm's probability to commit fraud. Therefore we test the following hypotheses.

**H6:** *In a region with a better-developed economy, the firms in the region are less likely to commit scandals.*

Previous literature documents the law as a prominent determinant of financial development and economic growth (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1998; Levine, 1998). Allen, Qian and Qian (2002) study the Chinese legal system by using the La Porta et al. (1998) legal indices and find that the Chinese system is incomplete compared with La Porta et al.'s sample countries. Nevertheless they find that China's economic growth has been largely sustained by the informal sector where the formal legal system only plays a marginal role. Berkowitz, Pistor, and Richard (2003) and Pistor, Raiser, and Gelfer (2000) found that the effectiveness of the law is more important than the written law in promoting financial development, especially in transition countries. Alford (2000) and Lu and Yao (2004) point out the insufficiency to just look at China's formal laws when one evaluates the Chinese legal system.

We extend above study by examining the impact of law effectiveness on firms' probability to commit fraud. Unlike most of other countries, regions in China vary dramatically in legal system development especially in terms of effectiveness of legal system although the written laws are almost the same for every region in China. The development of legal system affects the actions of management and board's effectiveness as a monitor of management. Weak legal system does not curb management's intention to fool investors for personal benefit because they know the probability to be caught is low and the punishment is not costly even if been caught. The minority investors would not spend time to sue the management on court because the probability for them to win the case is low or compensation is too low to match

the time and money input into the litigation. In this paper we hypothesize that the provincial legal environments influence the likelihood that the firms located in those province commit financial scandal.

**H6:** *In a region with a better-developed legal system, the firms in the region are less likely to commit scandals.*

We construct a unique objective measure of the effectiveness of the law and the legal environment. The first set of proxies we employ in this study include procuratorial economic and commercial cases per capita in a province in a year, the ratio of procuratorial economic and commercial cases to GDP, commercial suit cases on court per capita, the ratio of closed commercial cases, and lawyer per capita, etc.. The details will be given in the data description.

### **2.1.7 Financial Distress**

It is a potential issue that firms confronting with financial distress are more likely to commit financial statement fraud. Management may try to hide the information in the hope that earnings would recover soon. Consequently in our empirical tests we control for firm's likelihood to be in financial distress in addition to corporate governance. Firms confronting with financial distress are more likely to commit financial statement fraud.

## **3. Data and Variables**

### **3.1 Sample selection and description**

The sample used in this study to test the hypotheses above consists of 320 publicly traded firms. 160 of the 320 firms represent the “scandal firms”, because each of these firms had an incidence of financial scandal publicly reported and enforced by CSRC, SZSE and SHSE during the period 1993 to 2003. Each of the fraud firms is matched with a no-fraud firm with similar size in the same industry, creating a choice-based sample of 160 fraud and 160 no-fraud firms.

The financial “scandal firm” sample is identified according to China Security Regulation Committee (CSRC), Shanghai Stock Exchange (SHSE) and Shenzhen Stock Exchange (SZSE) enforcement action release. A firm is included as a sample scandal firm if the CSRC, SHSE or SZSE accused top management of violating China Security Act. These releases are available on the major newspaper and security exchange bulletin of CSRC, SHSE and SZSE. CSRC requires firm make announcement to investors once the firm is convicted. We double check with corporate announcement on violation of rules.

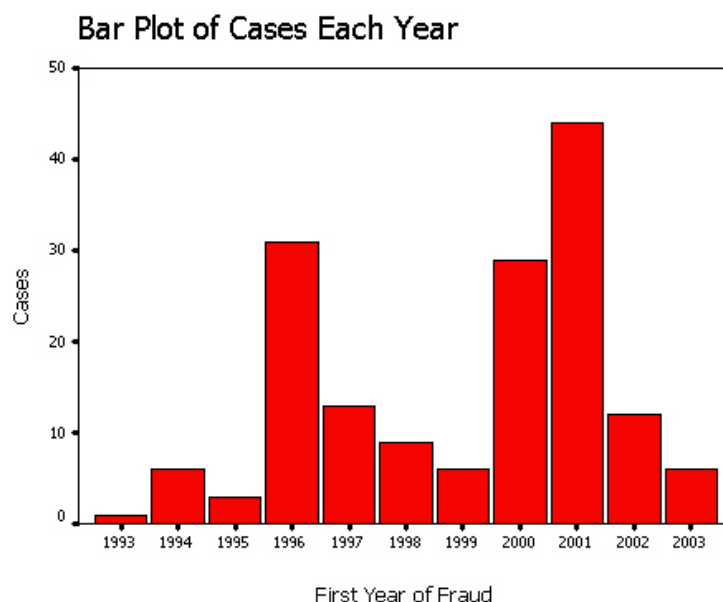
The sample is limited to publicly traded firms because the study examines information only available in proxy statements and financial statements filed with CSRC. In order to identify firms that commit financial fraud, we refer to the *China*

*Securities Journal*, *Shanghai Securities Journal* and the *Guotaian Database*. The total number of firms subject to enforcement actions by the CSRC, SSE, and SZSE between 1993 and 2003 is 178. We eliminate 12 firms whose governance information in and before the fraud period are not available, 2 firms listed on B-Share Market of China, and 4 firms that cannot be matched by industry code, and then the sample size is reduced to 160. In this sample of 160 firms, 53 commit fraud in a period lasting 2 or more accounting years, and we define the fraud period of these firms as the first date of their financial fraud.

The corporate financial scandal or fraud took place during 1993-2003 including fabricated profit, made-up assets, false statement, intentional omission of critical information, illegal transactions with large shareholders and illegal pledge for loan.

Table 1 and Diagram 1 provide the timeline distribution of the cases of scandal.

Diagram 1.



From Table 1 and Diagram 1, the number of firms committing financial scandal is the largest in 2001, 1996, and 2000. Table 2 provides the industry classification of the 160 firms. The industry with the largest representation is conglomerate with 18 observations; followed by electricity engineering with 11 observations.

For each of the 160 firms in this fraud sample, we identify a *control firm*. The control firm is obtained by the following four-step procedure.:

(i) Stock Exchange. The common stocks of a fraud firm and its matched no-fraud firm trade on the same national stock exchange (SHSE, SZSE).

(ii) Industry. The firms experiencing fraud and its matched no-fraud firm share the same 3-digit industrial code. If there's no firm matching the three digits, then select that of the same primary two digits.

(iii) Firm Size. The matched no-fraud firms have the closest total assets with their counterparts.

(iv) Time Period. A no-fraud firm identified in steps (i) through (iii) was included

in the final sample if proxy and financial statement data are available for the time period used to collect data from the financial statements of the related fraud firm.

### 3.2 Variables

To examine the corporate governance, local economic development and legal environment, and firm financial distress, we construct the various required measures identified in the previous section.

#### 3.2.1 Measure s of Corporate Governance

We collect the following related data in *SinoFin* and *CSMAR*. For those unavailable in *SinoFin* and *CSMAR*, we refer to the original statements and proclamations. We use the data of the last period before the financial statement fraud for empirical analysis. We outline the proxy and variable definition below.

*CHAIRCEO*: The position settings of the Chairman of the board of directors and CEO. The dummy variable equals 1 if the single person undertake the two positions; 0 otherwise.

*BOARDSIZE*: The number of members in the board of directors.

*INDIRr*: The ratio of independent directors to the board size.

*CHAIRHOLD*: ownership of the Chairman of the board

*HOLDDIR*: The ratio of directors holding shares to the board size.

*DIRPAID*: The ratio of directors getting salary to the board size.

*SUPERSIZE*: The number of members in the board of supervisors.

*SUPERHOLD*: The ratio of supervisors holding shares to the size of supervisory committee (supervisory board).

*SUPERPAID*: The ratio of supervisors getting paid to the size of supervisory committee.

*LARGEST*: The ownership of the largest stockholder.

*LARGESTSQ*: The square of the ownership of the largest stockholder.

*INSTITUTE*: institution holdings.

*CENTRAL*: dummy variable equals 1 if the controller of the firm is central government.

*LOCAL*: dummy variable equals 1 if the controller of the firm is local government.

*STENTER*: dummy variable equals 1 if the controller of the firm is non-central state owned enterprise (SOE).

*LEGALP*: dummy variable equals 1 if the controller of the firm is non-state legal person.

*PRIVATE*: dummy variable equals 1 if the controller of the firm is natural person.

*GROUP*: Whether the listed firm is split from a group for IPO. The dummy equals to 1 if the listed firm is split from a parent firm for IPO , and 0 otherwise.

#### 3.2.2 Measure of Local Economic development, and Legal Environments

According to the registration location, we divide the sample into provinces and districts. We categorize the firms' location provinces into 8 districts according to the method of geological economy. Provinces in each district are similar in economy development. Description of these districts is listed as following.

*NORTHEAST*: including the provinces of Heilongjiang, Jilin, and Liaoning.

*NORTHCHINA*: including Beijing, Hebei, Tianjian, and Shandong.

*ESATCHINA*: including Jiangsu, Shanghai, and Zhejiang.

*SOUTHCHINA*: including Fujian, Guangdong, and Hainan.

*MIDHUANGHE*: including Henan, Shanxi, and Shaanxi.

*MIDYANGTSE*: including Anhui, Jiangxi, Hubei, and Hunan.

*NORTHWEST*: including Ningxia, Qinghai, Gansu, Xinjiang, and Inner Mongolia.

*SOUTHWEST*: including Sichuan, Chongqing, Guangxi, Guizhou, Yunnan, and Tibet.

All these are dummy variables equal to 1 if the firm is form that region, 0 otherwise.

To study the real regional factor behind a firm's probability to commit scandal instead of just showing regional difference, we use the data from *China Statistical Yearbook (CSY)*, *China Financial Statistical Yearbook (CFSY)*, *China Investment Yearbook (CIY)* and yearbooks of provinces to design several proxies to represent the provincial economic development and financial environment. We construct proxies for all 31 provinces in China. We use per capital GDP as proxy fro economy development.

*GDP*: GDP (in 100 million Chinese yuan) of a province

*LGDP*: the logarithm of GDP (in 100 million Chinese yuan) of a province in the period before fraud divided by the population(in 10 thousand) in the same period.

We design proxies to measure the development of financial systems.

*PRINVEST*: obtained by subtracting the fixed-asset investment made by SOEs and collective firms from the total amount of fixed-asset investment in a province (data are from the fixed-asset investment chapter of CSY). This is not a perfect measure for private investment because some collective firms are actually privately operated (these are those so-called "red hat" firms), but should serve our purpose with reasonable accuracy.

*FINCOMPSQ*: The square term of the proportion of credit issued by local financial institutions to the total amount of credit can serve as a measure of financial competition. Subtracting the credit issued by the four major state banks<sup>3</sup> from the total amount of credit, we get the credit issued by local financial institutions.

The measures for legal environments come from *China Legal Yearbook (CLY)*,

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<sup>3</sup> The four major state banks are the Industrial and Commercial Bank of China, China Agriculture Bank, China Construction Bank and the Bank of China.

*China Procuratorial Yearbook (CPY)*, and *China Lawyer Yearbook (CLLY)*. We construct three sets of proxies. We design the first set of proxies using data based on China procuratorial system.

*PROCUPC*: Procuratorial commercial cases per capital in a province.

*PROCUGDP*: Procuratorial commercial cases to GDP in a province.

*LOSSGDP*: The ratio of saved loss by procuratorial commercial suits to local GDP.

*OFFICPC*: this measures the corruptness of officials. The number of official at county level<sup>4</sup> or above punished in procuratorial suits divided by the population can well perform this measurement.

We construct the second set of proxies based on data from China court system.

*RCMP*: The number of commercial cases received by the court per million of population. RCMP serves as several purposes. First, it controls the court's selection of easy cases. Second, to the extent that people in a province with low trust in the court system tend not to use it as a way to solve conflicts, RCMP controls the public's trust in the court system. Third, because arbitrary court rulings tend to deter people from taking cases to the court, RCMP also controls the court's intention of arbitrary rulings.

*CASECLOSE*: This proxy is defined as the case close rate in all the commercial courts in a year.

The third set of proxies is design based on China lawyer system.

*LAWYPC*: the number of registered lawyer divided by the population(in 10 thousand) in a province.

*LAWYGDP*: the number of registered lawyer divided by the GDP in a province.

We also employ the proxy of NERI Index of Marketization of China's Provinces to be a comprehensive measure of provincial economic, financial and legal development. The index measures the following five aspects to reflect the process of marketization in provinces:

- (i) The relation between the government and the market.
- (ii) The development extent of non-state-owned economy.
- (iii) The development extent of product markets.
- (iv) The development extent of factor markets.
- (v) The development of market intermediaries and legal and regulation environments.

### 3.2.3 Other control variables

It is possible that firms face financial distress or in certain financial need are more likely to commit scandal. Therefore we need to control for corporate financial situation. We use firm's debt to equity ratio, current ratio (current assets to current

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<sup>4</sup> There are four major level of officials in China's bureaucracy system, "Ke" level, "Xian" ("Chu") level, "Ting" ("Ju") level and "Shen" ("Bu") level. The major official in a county ("Xian") is assigned a level of "Xian" by government. Here we use "County" to represent "Xian" level to make it simple.

liability) and ROA (return on assets) as basic control while we also use other controls widely used in financial distress and bankruptcy literature.

## 4. Empirical results

### 4.1 Logistic regressions on corporate governance variables

We estimate variants of the following model:

$$(1) \quad \text{SCANDAL} = f(\text{corporate governance proxies, financial controls})$$

The explanatory variables are the corporate governance variables that we discussed in section 3.2.2 above and financial controls in section 3.2.4. As discussed in section 2, signs of the most of these variables are empirical issues. So we use the observed signs to interpret our results.

Table 3 shows estimates of an OLS regression and several variants of logistic regressions of equation (1), where we include corporate governance variables of interest, together with control variables. The first column shows among governance variables only *CHIRHOLD* is statistically significant at 10% level. The negative sign of *CHIRHOLD* suggests that when stock holding of the chairman increase, the firm is less likely to commit scandal. This is consistent to hypothesis H3F. In Column 2, we add the two dummy *LOCAL* and *LEGALP*. *CHIRHOLD* is negative and statistically significant at 10% level. *LEGALP* is positive and significant at 0.1% level. A firm is more likely to commit scandal if the firm is controlled by a non-state legal person. This is consistent with hypothesis H2B. Without a clear property rights and ownership, and effect monitoring, non-state legal person controlled firm has less incentive to protective minority shareholders and less responsibility to community, consequently is much more likely to commit scandal. *LOCAL* is positive and significantly positive at 5% level. A firm is more likely to commit scandal if the firm is controlled by the local government. This suggests local government use the firm it controlled to pursue benefit, and facilitate the firm to commit scandal. It is possible that local government can back up firm it controlled when scandal is uncovered. *LEGALP* and *LOCAL* are positive and significant in column 3 and 4 as well.

In column 3 and 4, we add the variable *SUPERPIAD*, the ratio of supervisor get paid on the Supervisory Board. *SUPERPIAD* is positive and significant. This suggests that firms may pay the supervisors so that the supervisor will stand on management's side. Thus the more supervisors get paid, the more likely the Supervisory Committee will be ineffective and the firm will commit scandal.

In column 4, we add *LARGESTSQ*, the square term of ownership of the largest shareholder together with *LARGEST*. *LARGEST* is negative and statistically significant, *LARGESTSQ* is positive and statistically significant. This shows as the ownership of the large shareholder increase from a low level, the firm is less likely to commit scandal. This is consistent with hypothesis H2A. Increasing the large shareholder's stake can reduce agency costs. However, after the ownership of large

shareholder reach a certain level, entrenched large shareholder will expropriate the minority shareholders, consequently the firm is more likely to commit scandal as the ownership of large shareholder continue to increase. This is consistent with hypothesis H2B.

We do not find that other corporate governance variables are significant. The board size and the ratio of directors hold stocks are not significantly related to the probability for a firm to commit fraud. Whether the CEO is also the chairman is not significant as well. There is no evidence that the independent directors help to decrease the probability for a firm to commit scandal. This suggests the so-called “independent” directors may not be real “independent”. The size of the supervisory committee and the ratio of supervisors hold stocks are not significantly related to the probability for a firm to commit fraud. There is no evidence that the institution investors help to decrease the probability for a firm to commit scandal. This suggests the institution investor in China capital market do not focus on monitoring the management.

In Column 4 we add regional dummy. To be simple we use district dummy instead of province dummy. *NORTHEAST* is positive and significant at 1% level. A firm in northeast of China is more likely to commit scandal. *MIDYANGTZ* is positive and significant at 10% level. A firm in mid-Yangtze river region of China is more likely to commit scandal. We will study the real reasons behind the regional pattern in next section.

Although not reported, we also try many other variants of regressions on governance variable. The results are all similar to Column 1 to 4 in Table 3.

#### **4.2. Controls for financial healthy**

It is possible that firms in financial distress are more likely to commit scandal in order to survive the distress. In all regressions in Table 3, we use three variable to control for financial healthy. These include firm’s debt to equity ratio, current ratio (current assets to current liability) and ROA (return on assets). *LIQUIDITY* (current assets to current liability) and *ROA* are statistically significant in all regressions. When a firm is safer in terms of short-term solvency as measure by *LIQUIDITY*, the firm is less likely to commit scandal. When ROA of a firm is high, the firm is highly profitable, the firm is less likely to commit scandal.

We conduct several robustness checks. We use OLS regressions, and get results very similar to those from logistic regressions.

#### **4.3 Regressions on variables for regional marketization and economic development**

To understand the real factors behind the regional difference of probability for a firm to commit scandal, we first examine the relation between the region marketization and a firm’s tendency to commit scandal. The column 1 of table 4 shows the regression result when add marketization index. *Marketization* is negative but not statistically significant. It is possible that an index is a too broad measure, we



examine more specific factors one by one.

In Column 2, the aggregate GDP of a province is negative and significant. In a region with higher aggregate GDP, a firm in the region is less likely to commit fraud. In Column 3, the GDP per capita of a province is negative and significant. In a region with higher GDP per capita, a firm in the region is less likely to commit fraud. This suggests that when a region is more economically developed, people are wealthier, firms in that region are less likely to commit scandals. When people get richer, they behave better. This is consistent to hypothesis H6.

In Column 3, we also add RCMP, variables based on legal system, we will discuss that in next section. In all regressions in Table 4, the coefficients and z-statistics of corporate governance variable are similar to those in Table 3.

#### 4.4 Regressions on variables for regional legal system

We construct three sets of measures of legal system in China. The first set of variable is based on procuratorate system. In column 1 of Table 5, we add PROCUGDP, the ratio of number of commercial cases initiated by the procurator in a province in a year to the provincial GDP. *PROCUGDP* is positive and significant, as the ratio of number of commercial cases initiated by the procurator to the provincial GDP of a province increase, a firm in the region is more likely to commit scandal. In column 2, we add PROCUPC, the number of commercial cases per capita initiated by the procurator in a province in a year. *PROCUPC* is positive and significant, as the number of commercial cases per capita initiated by the procurator of a province increase, a firm in the region is more likely to commit scandal. This are not consistent the common wisdom that the large number of commercial cases per capita initiated by the procurator would indicate an more effective legal system and deter firms to commit scandals. However in China the legal system, especially the procuratorate system is very insufficient, only a small portion of illegal activities can be formally initiated by the procurator as a case. Many illegal activities are not caught. Thus the number of commercial cases per capita initiated by the procurator does not indicate a more effective legal system, but indicate how broad the illegal activities exist. Consequently, as the number of commercial cases per capita initiated by the procurator of a province increase, a firm in the region is more likely to commit scandal. This suggests there exist an externality effect. When more people in a neighborhood commit illegal activities, a firm is more likely to follow others to commit scandal.

The second set of variable is based on court system in China. In column 3 of Table 5, we add RCMP, the number of commercial suits per capita received by the court in a province in a year. *RCMP* is positive but not significant. In column 4, we add RCMP<sup>2</sup>, the square term of the number of commercial cases per capita received by the court in a province in a year. *RCMP* is positive and significant and *RCMP<sup>2</sup>* is negative and significant. As the number of commercial cases per capita received by the court of a province increases, a firm in the region is more likely to commit scandal.

When the number of commercial cases per capita received by the court of a province reach certain level, a firm in the region is less likely to commit scandal as the number of commercial cases per capita received by the court of a province. This suggests when the number of commercial cases per capita received by the court of a province is at low level, the court system is not effective, because many people would not come to court to file cases even they should. However when the court system is better developed, the number of commercial cases per capita received by the court of a province increase to a high level. As the court system becomes effective, firms in the region will be less likely to commit scandal. In closer look at the RCMP data, the provinces with highest RCMP are developed provinces including Shanghai and Zhejiang. These provinces have dramatically higher RCMP than less developed provinces. This supports our argument.

In column 5 of Table 5, we put *PROCUGDP*, *RCMP* and *RCMPSQ* into the regression model together, the results are similar to Column 1 and Column 3. In Column 4 in Table 4, we put *RCMP*, *RCMPSQ* and *LGDP* into the regression model together, the results are similar to Column 1 and Column 3.

#### **4.5 Regressions on variables for regional financial system**

It is possible that when financial system may affect firm's tendency to commit scandal in that when firms are not be able to raise capital in a less developed financial system, firms have the incentive to commit fraud to get access to financial markets.

In Column 1 in Table 6, we add use variable *FINCOMPSQ*, the square term of the ratio of the proportion of credit issued by local financial institutions to the total amount of credit, to measure the financial competition. The four major banks are where the most bank loan coming from, the local financial institution grows fast these year. *FINCOMPSQ* is negative and significant, suggests that when the financial system is more competitive, firms can get financed more easily, firms are less likely to commit scandal. In column 2, we use *PRINVEST*, the ratio of private investment to the total investments, as a measure of financial liberalization. *PRINVEST* is negative but not significant.

### **5. Summary and conclusions**

Following financial scandals at prominent companies in US and Europe, there have been urgent needs to review regulations on corporate governance. US adopted the Sarbanes-Oxley Act in July 2002. This influences government in many other countries. In fact in a transition Economy in Asia, financial scandal and fraud is much more common than in US. In China 15% of the listed firms have an incidence of a scandal. There is no systematic empirical evidence on the effectiveness of corporate governance mechanism in avoiding the scandal at companies in transition economy. This paper is a step in that direction.

We examine whether certain corporate governance mechanism are related to the incidence of a scandal in a firm. We find that several governance characteristics are related to the probability of a firm to commit scandal. These include the types of controller of the firm, the ownership level of the largest shareholder, the stock holding

of the chairman, and ratio of paid supervisor on the Supervisory Committee. There is no evidence that several other governance characteristics are related to the probability of a firm commit scandal, including the board size, independent directors, the institution ownership, and the size of Supervisory Committee.

Transition economies usually have less developed economy, financial system and legal system. Corporate governance may not be the only issue that related to the firm's propensity to commit financial scandals. Unlike US and many other countries, provinces in China differ dramatically in level of economic development, financial system and legal system. We find that the level of a region's economy development is negatively related to the probability of a firm in the region commit scandals. As a region's the GDP per capita increase, a firm in the region will be less likely to commit fraud. In addition we find that in a region where the number of commercial cases investigated by procurator is larger, a firm in the region is more likely to commit scandal. These suggest that the procuratorate system is not effective and when legal system is not effective a firm is more likely to commit scandal if there are more firms or people commit fraud or default in commercial contracts in that "neighborhood". We find a similar but non-linear relation between the number of commercial suits on the court in a province and the probability of a firm to commit scandal in that region. As the number of commercial suits on the court in a province increases, the probability of a firm to commit scandal rises; when the number of commercial suits on the court reach certain level, the probability of a firm to commit scandal falls. It suggests that when the court system becomes effective and more people and firms go to court to protect themselves, the firms will be constraint in committing fraud. Overall we find that in China corporate governance is essential in avoiding corporate scandal. Moreover, in a transition economy the level of economic development and legal system are also related to firm's probability to commit fraud.

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TABLE 1 Number of cases of scandal each year, 1993-2003

First year of scandal take place	Number of cases
1993	1
1994	6
1995	3
1996	31
1997	13
1998	9
1999	6
2000	29
2001	44
2002	12
2003	6
Total	160

Table 2. Industry classification of 160 firms subject to enforcement actions

CODE	NAME	Obs	CODE	NAME	Obs
A01	Agriculture	4	C73	Special Machine	6
A07	Fishing	2	C75	Transportation Machine	6
B01	Coal Mining	1	C76	Electricity Engineer	11
B03	Petroleum Mining	1	C78	Instruments	1
B07	Metal Mining	1	C81	Medicine Manufacture	7
C01	Food Processing	1	C85	Biological Products	1
C03	Food Manufacture	2	C99	other manufacture	1
C05	Beverage Manufacture	3	D01	Utilities	3
C11	Textile Mill Products	2	E01	Bldg Construction	4
C13	Costume Manufacture	3	F07	Water Carriage	3
C14	Leather Manufacture	1	F09	Air transportation	1
C25	Furniture Manufacture	1	F11	Transportation Assistant	1
C31	Paper products	4	G81	Communication Apparatus	2
C41	Oil and Coking Plant	3	G83	Computer	1
C43	Chemical & Allied products	9	G87	IT Services	4
C47	Chemical Fibre	2	H01	Grocery Wholesale	1
C48	Rubber Manufacture	1	H03	Energy Wholesale	3
C49	Plastic Products	1	H11	Retailing	3
C51	Electric Apparatus	2	H21	Brokerage	4
C55	Daily Electric	2	J01	Real Estate	6
C61	Mineral Products	4	K01	Public Establishment	3
C65	Black Metal Smelt	4	K34	Travelling	4
C67	Metal Smelt	1	L01	Publishing Press	1
C69	Metal products	2	L20	Information	4
C71	General Machine	4	M	Conglomerate	18
			Total		160

**Table 3 OLS or Logistic regressions of SCANDAL on corporate governance variables**

Variables	OLS	logistic	Logistic	logistic
	regression			
LOCAL		0.753*** (2.57)	0.673** (2.30)	0.64** (2.11)
LEGALP		1.51**** (3.40)	1.41*** (3.23)	1.56**** (3.43)
LARGEST	-0.07 (-0.45)	-0.20 (0.27)	-0.47 (-0.65)	-5.55* (-1.81)
LARGESTSQ				5.43* (1.64)
BOARDSIZE	0.0019 (0.15)	0.029 (0.54)	0.003 (0.07)	
CHAIRCEO	-0.0046 (-0.07)	-0.15 (-0.53)	-0.14 (-0.49)	-0.20 (-0.66)
INDIR	-0.027 (-0.61)	-0.086 (-0.46)	-0.057 (-0.30)	-0.057 (-0.29)
CHAIRHOLD	-1.99* (-1.59)	-13.3* (-1.65)	-16.15* (-1.90)	-15.7* (-1.78)
DIRHOLD	-0.014 (-1.03)	-0.052 (-0.91)	0.058 (0.12)	0.016 (0.03)
SUPERSIZE	-0.0128 (-0.51)	-0.095 (-0.88)		
SUPERHOLD	0.030 (1.23)	0.15 (1.46)	0.70 (1.19)	0.092 (1.04)
SUPERPAID			0.64* (1.85)	0.67* (1.83)
INSTITUTE	-0.12 (-1.04)	-0.063 (-1.10)	-0.076 (-1.30)	-0.069 (-1.17)
GROUP	0.071 (1.15)	0.27 (1.02)		0.25 (0.90)
NORTHEAST				1.27*** (2.71)
MIDYANGTZ				0.88* (1.95)
NORTHCHINA				0.031 (0.07)
SOUTHCHINA				0.16 (0.42)
DEBT	0.010 (0.95)	0.068 (1.17)	0.061 (1.09)	0.074 (1.22)

ROA	-0.563*	-3.33*	-3.13	-3.59*
	(-1.79)	(-1.71)	(-160))	(-1.68)
LIQUIDITY	-0.043**	-0.182**	-0.167*	-0.168*
	(-2.15)	(-1.99)	(-01.80)	(-1.75)
CONSTANT	0.68	0.10	-0.32	0.65
	(4.89)	(0.17)	(-0.47)	(0.91)
Adjusted R <sup>2</sup>	0.024			
Log Likelihood		-199.5	-195.5	-188.4
number of observations	320	320	320	320

Note: The dependent variable is SCANDAL, a dummy variable equals 1 if firm commit a scandal, 0 otherwise. The z statistics is in parentheses. Please refer to section 3 for variable definitions.

\*, \*\*, \*\*\*, \*\*\*\* significant at 10%, 5%, 1%, 0.1% level respectively.



**Table 4 Logistic regressions of SCANDAL on variables proxy for provincial marketization and economic development**

Variables	Model (1)	Model (2)	Model (3)
LOCAL	0.628** (2.13)	0.674** (2.27)	0.639** (2.16)
LEGALP	1.44**** (3.28)	1.49**** (3.35)	1.49**** (3.35)
LARGEST	-5.01* (-1.68)	-5.02* (-1.67)	-5.61** (-1.86)
LARGESTSQ	5.10 (1.58)	5.25 (1.61)	5.57* (1.71)
CHAIRCEO	-0.113 (-0.39)	-0.163 (-0.56)	-0.090 (-1.40)
INDIR	-0.098 (-0.52)	-0.088 (-0.46)	-0.031 (-0.16)
CHAIRHOLD	-14.36* (-1.74)	-13.9* (-1.71)	-17.2** (-2.03)
DIRHOLD	-0.011 (-0.02)	-0.064 (-0.12)	0.015 (0.03)
SUPERHOLD	0.071 (0.82)	0.059 (0.68)	
SUPERPAID	0.712** (2.02)	0.805*** (2.24)	0.80** (2.20)
INSTITUTE	-0.064 (-1.10)	-0.063 (-1.07)	
GROUP	0.281 (1.03)	0.30 (1.09)	0.25 (0.93)
MARKETIZATION	-0.05 (-0.52)		
GDP (million)		-0.0001* (-1.79)	
LGDPPC			-0.72** (-2.01)
RCMP			0.174** (2.47)
RCMPSQ			-0.004** (-2.25)
OFFICPC			12.1 (1.04)
DEBT	0.063 (1.07)	0.065 (1.15)	0.044 (0.80)
ROA	-3.32* (-1.66)	-3.58* (-1.76)	-2.63* (-1.53)

LIQUIDITY	-0.16*	-0.17*	-0.17*
	(-1.72)	(-1.72)	(-1.81)
CONSTANT	1.06	1.11	-0.84
	(1.20)	(1.58)	(-0.85)
Log Likelihood	-194.3	-192.8	-194.4
number of observations	320	320	320

Note: The dependent variable is SCANDAL, a dummy variable equals 1 if firm commit a scandal, 0 otherwise. The z statistics is in parentheses. Please refer to section 3 for variable definitions.

\*, \*\*, \*\*\*, \*\*\*\* significant at 10%, 5%, 1%, 0.1% level respectively.

**Table 5 Logistic regressions of SCANDAL on variables proxy for  
development of legal system in provinces**

Variables	Model (1)	Model (2)	Model (3)	Model (4)	Model( 5 )
LOCAL	0.652** (2.10)	0.65** (2.19)	0.622** (2.11)	0.631** (2.13)	0.632** (2.15)
LEGALP	1.41*** (3.24)	1.49**** (3.34)	1.41**** (3.24)	1.51**** (3.39)	1.54**** (3.43)
LARGEST	-5.59* (-1.88)	-5.21 (-1.72)*	-4.94* (-1.65)	-5.23* (-1.74)	-5.95** (-1.97)
LARGESTSQ	5.84* (1.82)	5.49 (1.67)	5.01 (1.55)	5.077 (1.56)	5.95* (1.83)
CHAIRCEO	-0.33 (-1.12)	-0.176 (-0.59)	-0.098 (-0.34)	-0.138 (-0.47)	-0.40 (-1.35)
INDIR	-0.086 (-0.46)	-0.076 (-0.39)	-0.100 (-0.53)	-0.83 (-0.44)	-0.07 (-0.38)
CHAIRHOLD	-15.9* (-1.91)	-14.2* (-1.73)	-14.80* (-1.78)	-15.30* (-1.83)	-16.4* (-1.95)
DIRHOLD	0.085 (0.20)	-0.172 (-0.30)	0.0004 (0.00)	0.055 (0.10)	0.11 (0.26)
SUPERHOLD		0.073 (0.83)	0.069 (0.81)	0.065 (0.75)	
SUPERPAID	0.763** (2.16)	0.777** (2.13)	0.704** (2.00)	0.700** (1.97)	0.78** (2.17)
INSTITUTE		-0.063 (-1.08)	-0.652 (-1.11)	-0.628 (-1.08)	
GROUP	0.29 (1.07)	0.24 (0.87)	0.261 (0.95)	0.261 (0.95)	
PROCUGDP	0.826* (1.66)				1.15** (2.13)
PROCUPC		2.76* (1.70)			
RCMP			0.0036 (0.21)	0.115* (1.74)	0.156** (2.29)
RCMPSQ				-0.003* (-1.73)	-0.004** (-2.17)
OFFICPC		5.61 (0.37)			
LOSSGDP		50.2 (0.61)			
DEBT	0.040 (0.75)	0.067 (1.16)	0.061 (1.03)	0.063 (1.04)	0.045 (0.83)

ROA	-2.83*	-3.49*	-3.26*	-2.86*	-2.68
	(-1.66)	(-1.72)	(-1.45)	(-1.45)	(-1.56))
LIQUIDITY	-0.169*	-0.155	-0.159*	-0.161*	-0.16*
	(-1.76)	(-1.63)	(-1.64)	(-1.74)	(-1.71))
CONSTANT	0.62	-0.193	0.696	0.0074	-0.64
	(0.91)	(-0.21)	(0.93)	(0.01)	(-0.70)
Log Likelihood	-197.0	-192.3	-194.4	-192.8	-194.3
number of observations	320	320	320	320	320

Note: The dependent variable is SCANDAL, a dummy variable equals 1 if firm commit a scandal, 0 otherwise. The z statistics is in parentheses. Please refer to section 3 for variable definitions.

\*, \*\*, \*\*\*, \*\*\*\* significant at 10%, 5%, 1%, 0.1% level respectively.

**Table 6 Logistic regressions of SCANDAL on variables proxy for  
development of financial system**

variables	Model (1)	Model (2)
LOCAL	0.711** (2.35)	0.621** (2.11)
LEGALP	1.60**** (3.51)	1.42**** (3.24)
LARGEST	-4.88 (-1.60)	-4.99* (-1.67)
LARGESTSQ	4.79 (1.46)	5.06 (1.57)
CHAIRCEO	-0.228 (-0.77)	-0.111 (-0.39)
INDIR	-0.033 (-0.17)	-0.093 (-0.48)
CHAIRHOLD	-14.39* (-1.76)	-14.67* (-1.77)
DIRHOLD	-0.129 (-0.23)	-0.034 (-0.06)
SUPERHOLD	0.056 (0.63)	0.069 (0.81)
SUPERPAID	0.817*** (2.26)	0.714*** (2.02)
INSTITUTE	-0.063 (-1.08)	-0.064 (-1.10)
GROUP	0.29 (1.06)	0.29 (1.05)
RCMP	0.14** (2.07)	
RCMPSQ	-0.004** (-2.00)	
FINCOMPSQ	-2.78** (-2.27)	
PRIVINVEST		-0.307 (-0.22)
DEBT	0.072 (1.21)	0.062 (1.04)
ROA	-3.12 (-1.53)	-3.28 (-1.64)
LIQUIDITY	-0.157* (-1.65)	-0.160* (-1.71)
CONSTANT	0.387 (0.44)	0.88 (1.03)

Log Likelihood	-190.1	-194.4
number of observations	320	320

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Note: The dependent variable is SCANDAL, a dummy variable equals 1 if firm commit a scandal, 0 otherwise. The z statistics is in parentheses. Please refer to section 3 for variable definitions.

\*, \*\*, \*\*\*, \*\*\*\* significant at 10%, 5%, 1%, 0.1% level respectively.