Law, Corporate Governance, and Corporate Scandal in an Emerging Economy: Insights from China*

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Abstract

There is an astonishingly high incidence of scandal among firms in the Chinese emerging market. This paper empirically examines whether certain corporate governance mechanisms are related to the probability of a firm being associated with corporate scandal. Using a sample of Chinese listed firms convicted for fraud, we find that firm ownership is related to the probability of a firm committing fraud, whereas other corporate governance characteristics such as board size, board independence, and institutional ownership are not. These findings suggest that in general governance mechanisms have not helped avoid serious corporate scandals in China. Further analysis indicates that the level of development of a country's legal system is related to the probability of a firm committing fraud. Together, our results suggest that without effective legal enforcement, corporate governance mechanisms will not be able to protect minority shareholders and facilitate stock market development in emerging markets.

JEL classification: G34, G38, K22
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1. Introduction

In many of the recent corporate scandals involving prominent U.S. and Western European companies such as Enron and Worldcom, the subject firms experienced a sharp decline in their debt issues' credit ratings. The scandals have largely been blamed on weak internal controls and governance. Accordingly, major regulatory changes have taken place. One such milestone is the Sarbanes-Oxley Act of 2002, which imposes a number of corporate governance requirements on all public companies with stock traded in the U.S.

While capital markets regulations of many countries tend to follow those established in the U.S., corporate scandals are far more common in many developing countries than in the U.S. The extent of such scandals is generally believed to have stymied the development of these countries' capital markets and in turn the progress of their economies. Thus, the degree to which governance mechanisms can mitigate corporate scandals is a question of particular importance for developing economies.

In this paper we examine the relations between corporate governance mechanisms and corporate scandals in China, the largest emerging economy in the world. Since China's stock market was established in 1990, more than 1,200 firms have listed on the Shanghai and Shenzhen stock exchanges. Of these, approximately 200, or one-sixth, have been subject to enforcement actions by the China Securities Regulation Commission (CSRC), the Shenzhen Stock Exchange (SZSE), or the Shanghai Stock Exchange (SHSE) -- a ratio that is far higher than that observed in other countries, especially the U.S. The high incidence of securities violations has

affected millions of investors and firm employees, contributing significantly to the loss of investor confidence and the resulting loss of value in the capital market. For example, the Chinese stock market composite index declined about 50% from 2001 to 2005. These observations naturally lead one to ask: 1) what contributes to the incidence of corporate scandals, and 2) can corporate governance mitigate corporate scandals in an emerging market such as China?

To address these questions, we assemble and analyze a unique data set that contains detailed information on the corporate governance characteristics of two samples of firms, namely, a sample of 160 Chinese listed firms that according to CSRC, SZSE, or SHSE had commit a securities law violation during the 1993 to 2003 period and an industry-size matched control sample of 160 non-scandal firms. The definition of (financial) violation employed in this paper is that used by CSRC, SZSE, and SHSE to identify a breach of securities laws and rules. Note that due to weak legal enforcement in China, such violations represent cases of outright fraud or other illegal activities as only serious violations of law are investigated and enforced by the authorities; minor violations or violations that would be difficult to prosecute are not formally enforced by the authorities in China.

We find evidence of a non-linear relationship between the ownership share of the largest shareholder and the probability that a firm will commit fraud. Specifically, the firm is less likely to commit fraud as the ownership share of the largest shareholder increases from a low level, but the firm is more likely to commit fraud after the largest shareholder's ownership share reaches a certain threshold. In contrast, we find

no evidence of a relation between the probability that a firm will commit fraud and several other governance characteristics, including board size, board independence, and institutional ownership. These findings suggest that, in general, corporate governance mechanisms alone may not be able to mitigate corporate scandals in China.

A number of factors besides corporate governance may influence a firm's decision to commit fraud. For example, the likelihood and potential costs of being caught are likely to affect the decision of whether to engage in mismanagement. These variables are related to a country's level of legal and economic development. While prior literature discusses the relations between corporate governance and earnings management (e.g., Klein (2002)), SEC enforcement (e.g., Beasley (1996) and Dechow, Sloan, and Sweeney (1996)), or accounting restatements (Agrawal and Chadha (2003)) in the U.S., few studies examine the relations between corporate governance, a country's level of legal development, and the extent of corporate fraud.[1] The literature following La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) is a close exception, as it focuses on differences in legal systems across countries. However, no prior study looks at the effects of within-country variation in legal development on corporate fraud. In China, different regions observe very different levels of economic development as indicated by the variation in province-level GDP per capita. Moreover, although written law is similar for most regions in China, the degree of enforcement, or the effectiveness of the legal system, varies significantly

[1] More recent studies focus on the impact of executive compensation on earnings management (Bergstresser and Philippon (2006)), restatements (Burns and Kedia (2006)), and private securities litigation (Peng and Roell (2006))

from region to region (Alford (2000) and Lu and Yao (2004)). This paper adds to the literature by using the variation in China to empirically test the effects of economic and legal development on a firm's decision to commit fraud.

We find that in regions in which the number of commercial cases in a province investigated by the procurator (similar to the prosecutor in U.S.) scaled by the province's GDP is larger, that is, in regions in which the procuratorate is not effective, a firm in the region is more likely to commit fraud. This finding suggests that when the procuratorate system is not effective, a firm is more likely to commit fraud if a number of other firms in the same "neighborhood" also are committing fraud. In addition, we find a non-linear relation between the number of commercial cases per capita that are tried in a region's court and the probability that a firm in that region will commit fraud: the probability that a firm in a given region will commit fraud increases in the number of commercial suits per capita in the region's court up to a certain level, after which point it decreases. This finding suggests that as the court system becomes effective and hence more people and firms turn to the courts for legal protection, firms will be constrained in their ability to commit fraud.

Overall, the evidence suggests that in the Chinese emerging market, legal development is a more important factor than corporate governance mechanisms in influencing whether a firm chooses to commit fraud. In other words, due to the weak legal system, corporate governance mechanisms are not effective in China. These findings are consistent with Sun and Zhang (2006), who examine the management turnover associated with fraud They find that while firms associated with fraud have

higher management turnover than matching non-fraud firms, a large percentage of the departing managers move to management positions in other firms and many even receive a promotion; only a very small fraction of CEOs and Chairmen receive legal or administrative penalties. Sun and Zhang argue that the weak enforcement of law has led to rampant fraud and stagnancy in the Chinese stock market. In this paper we show further that the absence of effective legal enforcement limits the ability of corporate governance mechanisms to mitigate corporate fraud.

The remainder of this paper is organized as follows. Section 2 discusses corporate fraud in China and develops testable hypotheses. Section 3 describes the data and variables used in the empirical analysis. Section 4 presents our empirical results. Section 5 concludes.

2. Issues and hypotheses

In this section we discuss corporate fraud in China and we develop testable hypotheses. We first address the relationship between corporate governance and corporate fraud. We then discuss the association between legal development and corporate violations.

2.1 Corporate governance and corporate scandal

In this subsection, we discuss the relations between a number of corporate governance mechanisms and corporate scandal in China. In particular, we examine the ownership share of the largest shareholder, board size, board independence, and the role of institutional investors.

2.1.1 Ownership

The degree of ownership concentration affects the nature of contracting. When ownership is diffuse, as is typical in the U.S., 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 is the case in Asia, the nature of the agency problem shifts away from manager-shareholder conflicts toward conflicts between the large shareholder (who is also the manager) and minority shareholders.

One way to mitigate agency problems of the latter type is to increase the large shareholder's ownership stake in the firm, as the literature shows that a higher ownership stake makes it more costly to expropriate the firm for private benefit. Based on this argument we expect that as the largest shareholder's ownership stake increases, the firm is less likely to be associated with a corporate scandal. More formally,

H1A: *As the ownership of the largest shareholder increases from zero, a firm is less likely to commit fraud.*

However, the relation between the probability of a firm committing fraud and ownership share is likely to be non-linear. Claenssens et al. (2000), Claenssens et al. (2002), and Fan and Wong (2002) show that dominance of the largest shareholder is among the most important characteristics of ownership structure in Asia. This is particularly true in China, where there is no effective mechanism to monitor or restrain large shareholders: by securing a dominant position in control rights, large shareholders can more easily expropriate minority shareholders. Accordingly, we expect that the following relation exists.

H1B: *As the ownership stake of the largest shareholder increases over a certain*

level, the firm is more likely to commit fraud.

2.1.2 Board independence

Fama and Jensen (1983) theorize that the board of directors is the highest internal control mechanism responsible for monitoring the actions of senior management. Moreover, they suggest that a higher percentage of outside directors increases a board's monitoring effectiveness. DeFond and Jiambalvo (1991), Beasley (1996), and Dechow, Sloan, and Sweeney (1996) find a similar relation between board composition and monitoring effectiveness. Consistent with these arguments, China's regulatory authorities require that listed firms include independent directors on their boards. Given the dominance of the largest shareholders in Chinese listed firms, the ratio of independent directors on a board may be of particular importance. However, because the CEO or Chairman has discretion to select members of the board, many of the independent directors are actually friends of management, that is, many "independent" directors are not really independent. The press has reported on a number of cases in which independent directors did nothing to resolve a conflict between insiders and minority shareholders.

Given the above discussion, it is important to empirically examine whether in China independent directors are really independent and whether independent directors can decrease a firm's tendency to commit fraud. We do so by testing the following hypothesis:

H2: *The proportion of independent members on the board of directors is lower for firms involved in a corporate scandal than for non-scandal firms.*

We also consider factors other than board composition that might also influence the board's effectiveness in monitoring the actions of management. Jensen (1993) argues that boards of director 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. . We therefore take into consideration board size, whether the Chairman of the Board is also the CEO, the number or proportion of shareholding directors on the Board, the number or proportion of paid directors on the Board, and the shareholdings of the Chairman of the Board of Directors. Specifically, we empirically examine the relations between each of these variables and the likelihood that a firm will be involved in a corporate scandal.

2.1.3 Institutional holdings

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

However, in an emerging economy with a less developed legal system, institutional investors may be incentivized to collude with management in pursuit of private interests. For instance, management may offer institutional investors benefits such as a lower-than-market transaction price, efforts to prevent close-end fund buybacks, and underwriting or consulting contracts (see, e.g., Barclay, Holderness,

and Pontiff (1993)).

In China, the press and the CSRC have documented cases in which mutual funds have manipulated the stock price, colluded with firm management, and made illegal profits by trading based on inside information. We examine empirically whether on net institutional investors in China help prevent corporate scandals or whether they tend collude with managers committing corporate securities violations.

2.1.4 Level of legal development

Fraud is far more common in China than in the U.S. or other developed economies, in spite of the fact that the Chinese authorities have modeled their corporate governance policies on those employed in the U.S. and Western Europe. That the standard corporate governance mechanisms are not effective in Chinese firms could be due to China's less developed legal systems. .

A country's legal system and the extent to which laws are enforced are likely to have great impact on a firm's decision to commit fraud. Previous literature documents that a country's legal system is a primary determinant of the country's 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 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, China has sustained robust economic growth. The authors find that this growth is largely attributable to the informal sector, where the formal legal system plays only a marginal role.

With respect to enforcement, Berkowitz, Pistor, and Richard (2003) and Pistor, Raiser, and Gelfer (2000) argue that law enforcement is more important than the written code in promoting financial development, especially in transition countries. Bhattacharya and Daouk (2002, 2005) make a similar point. Comparing the 103 countries that have stock markets, Bhattacharya and Daouk (2002) find that while insider trading laws exist in 87 of them, the cost of capital is reduced only in the 38 countries that enforce these laws, as evidenced by prosecutions. Bhattacharya and Daouk (2005) find further that the cost of capital rises in countries that introduce, but do not enforce, insider trading laws. They therefore argue that under certain conditions, no law is better than a good law without the execution of the law. In China, the formal protections written into law have improved significantly and are among the most advanced across developing countries. For example, the Securities Act of China models its requirements on those that have evolved in the U.S. and other developed markets. However, because the enforcement of law in China has lagged behind, Alford (2000) and Lu and Yao (2004) point out that it is insufficient to look only at China's formal laws when evaluating the Chinese legal system.

We extend the studies above by examining the impact of law enforcement, or effectiveness, on the probability of a firm committing fraud. Unlike most other countries, different regions in China observe different levels of legal effectiveness although the written laws are nearly the same throughout the country. The extent of enforcement influences both the actions of management and a board's effectiveness as a monitor of management. In particular, weak legal systems are unable to curb fraud

by managers because the probability of being caught is low and the penalties are not severe in the event a manager is caught. Put differently, under a weak legal system, minority investors are not likely to spend time suing management in court because the probability of winning the case is low or the expected compensation of doing so is too low cover expenses and opportunity costs involved with litigation.

Based upon the above discussions, in this paper we hypothesize that the level of a region's legal development influence the likelihood that firms located in the region will commit financial fraud.

H3: *In a region with a better-developed legal system, firms are less likely to commit fraud.***2.1.5 Financial distress**

Of potential concern is the possibility that firms facing financial distress are more likely to commit financial fraud. For example, management may try to hide information in the hope that earnings would recover soon. Thus, in our empirical tests we control for the likelihood of financial distress. We expect that firms facing financial distress are more likely to commit financial statement fraud.

3. Data and variables

3.1 Sample selection and description

While publicly listed firms represent only a small portion of China's economy, and unlisted firms have a higher likelihood of committing financial fraud than listed firms, we mainly focus on listed firms due to data availability. Our sample consists of 320 publicly traded firms. Of these, 160 are "scandal firms," that is, firms convicted by CSRC, SZSE, or SHSE for a securities violation during the 1993 to 2003 period.

Each of the scandal firms is then size and industry matched with a no-scandal firm, creating a choice-based sample of 160 fraud and 160 no-fraud firms.

The scandal firm sample is identified according to CSRC, SHSE, and SZSE enforcement action releases. In particular, a firm is included in the initial scandal sample if, in any action release over the sample period, the CSRC, SHSE, or SZSE accused top management of violating the China Securities Act. Violations include false statements of profits or assets, false forecasts, intentional omission of material information, illegal transactions with large shareholders, and illegal guarantees of loans.[2] The enforcement action releases are available in the major newspapers and securities exchanges bulletins of CSRC, SHSE, and SZSE. CSRC also requires that convicted firms announce their convictions to investors. We use these corporate announcements to double-check our sample identified by the action releases.

Note that some firms were subject to more than one enforcement action during the 1993 to 2003 period for different offenses. In such cases we focus on the first conviction of the firm, as previous events may have a residual carryover effect and multiple events may bias a firm's financials, management turnover, and corporate governance. The total number of firms subject to an enforcement action by the CSRC, SSE, or SZSE between 1993 and 2003 is 178. Of these, we eliminate 12 firms whose governance information around or before the fraud event is not available, 2 firms listed on China's B-Share Market, and 4 firms that cannot be matched by industry code. This leaves a final sample of 160 scandal firms. Among these 160 firms, 53

[2] A detailed description of each case is available upon request.

commit a securities violation lasting 2 or more accounting years; we identify these firms' violations according to the first date of the violation.

Table 1 reports the distribution of financial scandals by year. The incidence of financial fraud is largest in 2001, 1996, and 2000. Table 2 classifies the 160 firms by industry. The industry associated with the largest number of securities violations is conglomerate with 18 observations, followed by electrical engineering with 11 observations.

For each of the 160 firms in the scandal sample, we identify a control firm. Control firms are obtained by the following four-step procedure. First, they are matched by stock exchange: the common stock of a fraud firm and its matched no-fraud firm must trade on the same national stock exchange (SHSE, SZSE). Second, they are matched by industry: fraud and matched no-fraud firms must share the same 3-digit industrial code; if no match is available at the 3-digit level, then a matching firm is determined based upon the primary 2- digit code. Third, controls are matched by firm size: matched no-fraud firms have the closest total assets with their scandal-sample counterparts. Finally, control firms are matched by time period: a no-fraud firm identified in the first three steps is included in the final sample if proxy and financial statement data are available for the time period used to collect financial data for the scandal firm.

Using an almost identical sample, Sun and Zhang (2006) calculate the abnormal stock returns around regulatory announcements. They document a negative abnormal return of –0.014 for the scandal firms in the window (-1,1), where day 0 is the

announcement day. Due to space considerations, we do not duplicate their calculation in this paper. Wu and Gao (2002) report similar results. Sun and Zhang also find that matched control firms experience operating performance improvements relative to scandal firms over the interval from year –1 to year 2, where year 0 is the year in which the scandal is committed. Again, due to space limitations, we do not duplicate these results in our study.

3.2 Variables

In order to test our hypotheses, in this section we construct measures of the variables identified in the discussions above.

3.2.1 Measures of corporate governance

We collect data on corporate governance from SinoFin and CSMAR. Where observations are not available in SinoFin and CSMAR, we refer to the firm's statements and proclamations. We use data the last period before a fraud incident for empirical analysis. Specifically, the proxies we use for corporate governance are as given below:

CHAIRCEO: A dummy variable that equals 1 if a single person is both Chairman of the Board and CEO at the same time, and 0 otherwise.

BOARDSIZE: The number of members on the board of directors.

INDEPENDENT: The ratio of independent directors to board size.

CHAIRHOLD: Ownership share of the Chairman of the Board.

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

LARGEST: The ownership of the largest stockholder.

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

INSTITUTE: Institutional holdings.

GROUP: Group affiliation; a dummy variable equals to 1 if the listed firm is affiliated with a group, and 0 otherwise.

3.2.2 Measures of legal development

The measures for legal development consist of three sets of proxies, which come from *China Legal Yearbook* (CLY), *China Procuratorial Yearbook (CPY)*, and *China Lawyer Yearbook (CLLY)*. The first set of proxies use data on China's procuratorial (prosecution) system.

PROCUGDP: the ratio of the number of commercial cases initiated by the procurator in a province to the province's GDP.

OFFICPC: The number of officials at the county level[3] or above that are convicted in commercial cases initiated by the procurator divided by the population in a province. This variable is a measure of the degree of corruption among officials.

The second set of proxies are based on data from China's court system.

RCMP: The number of commercial cases received by the court per capita (millions). RCMP serves several purposes. First, it controls for 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 turn to the courts as a way to resolve conflicts, RCMP controls for 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 for the court's record

[3] There are four major levels of officials in China's bureaucracy, "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. For simplicity, we use "county" to refer to the "Xian" level.

for arbitrary rulings.

RCMPSQ: The square of *RCMP*.

CASECLOSE: The case-close rate across all the commercial courts in a year.

The third set of proxies focus on China's lawyers.

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

LAWYGDP: The number of registered lawyers divided by the GDP in a province.

In addition, we use GDP per capita as a proxy for economic development. Data on economic development come from *China Statistical Yearbook (CSY).* More specifically,

LGDPPC: The logarithm of GDP (in 100 million Chinese yuan) of a province in the period before a violation divided by the population (in 10 thousand) in the same period.

We also construct proxies designed to measure financial development. The data are from *China Financial Statistical Yearbook (CFSY)* and *China Investment Yearbook (CIY).*

PRINVEST: Private investment, calculated as the total investment in fixed assets in a province less the investment in fixed assets made by state-owned enterprises and collective firms. This proxy is not a perfect measure of private investment because some collective firms are actually privately operated (the so-called "red hat" firms); nonetheless, it should serve our purpose with reasonable accuracy.

FINCOMP: The proportion of credit issued by local financial institutions to the total amount of credit. This variable serves as a measure of financial competition. We obtain the credit issued by local financial institutions by subtracting the credit issued by the four major state banks[4] from the total amount of credit issued.

Finally, we employ the *NERI Index of Marketization of China's Provinces*, which ranks the Chinese provinces according to their level of market development, as a comprehensive measure of a province's level of economic, financial, and legal development. The index has five components: (i) The relation between government and the market; (ii) the development of the non-state-owned economy; (iii) the development of product markets; (iv) the development of factor markets; and (v) the development of legal and regulatory intermediary institutions.

3.2.3 Other control variables

It is possible that firms facing financial distress are more likely to be involved in a corporate scandal. We therefore need to control for a firm's financial situation. To do so, we use a firm's debt to equity ratio, the liquidity (current assets to current liability), and ROA (return on assets) as several basic controls. We also use several other controls widely used in the financial distress and bankruptcy literature.

Also, besides corporate governance, external auditing may have an impact on firm's decision to commit fraud. We therefore control for the auditor's reputation by including *BIGFOUR*, a dummy variable that is equal to 1 if the auditor is one of the international Big Four firms (formerly Big Five), and 0 otherwise.

[4] The four major state banks are the Industrial and Commercial Bank of China, China Agriculture Bank, China Construction Bank, and the Bank of China.

4. Empirical results

4.1 Regressions on corporate governance variables

We estimate variants of the following model:

(1) *SCANDAL = f* (corporate governance proxies, financial controls),

where the explanatory variables are the corporate governance variables discussed in Section 3.2.1 and the financial controls discussed in Section 3.2.4. As we discussed in Section 2, the signs on most of these variables' coefficients are empirical issues. Thus, we use the observed signs to interpret our results.

Table 3 reports estimates of OLS and logistic regressions of equation (1), where we include different corporate governance variables of interest together with control variables. Column 1 shows that none of the governance variables is statistically significant at the 10% level. The coefficient on the largest shareholder's ownership stake, *LARGEST,* is negative but statistically insignificant. In Column 2, we include *LARGESTSQ*, the squared ownership of the largest shareholder, together with *LARGEST*. In this case *LARGEST* is negative and statistically significant, and *LARGESTSQ* is positive and statistically significant. This indicates that as the ownership share of the largest shareholder increases from a low level, the firm is less likely to commit scandal. This is consistent with hypothesis **H1A**, which posits that increasing the largest shareholder's stake can mitigate the agency problem. However, after the ownership of the large shareholder reaches a certain level, the firm is more likely to commit scandal as the ownership of the largest shareholder continues to increase. This is consistent with hypothesis **H1B**, which posits that entrenched large

shareholders may expropriate minority shareholders. Also in Column 2, *CHIRHOLD* is negative and statistically significant at the 10% level. The negative sign of *CHIRHOLD* suggests that when the Chairman's stockholdings increase, the firm is less likely to commit a securities fraud.

Columns 3 through 6 report results of logistic regressions. These results confirm those in Columns 1 and 2. Specifically, similar to Column 1, Columns 3 and 5 indicated that none of the governance variables is statistically significant at the 10% level, and the coefficient on *LARGEST* is negative but not statistically significant. In addition, similar to Column 2, in Columns 4 and 6, we include *LARGESTSQ* together with *LARGEST* and find that *LARGEST* is negative and statistically significant, whereas *LARGESTSQ* is positive and statistically significant. Thus, the logistic tests also records a non-linear relation between the largest shareholder's ownership share and the likelihood that a firm will commit fraud, providing additional evidence in support of hypotheses **H1A** and **H1B**.

We do not find that the other corporate governance variables we study have a significant impact on a firm's probability of committing fraud. In particular, there is no evidence that the presence of independent directors on a board decreases the probability of a firm being associated with a scandal. This is not consistent with hypothesis **H2**, and suggests that so-called "independent" directors may not really be independent. Further, board size and the ratio of stockholding directors are not significantly related to the probability of a firm committing fraud. Whether the CEO is also the acting Chairman has no significant impact as well. Finally, we find no

evidence that institutional investors decrease the probability that a firm will commit fraud. This suggests that unlike the role of institutional investors in the U.S. and other developed markets, institutional investors in China's capital market do not focus on monitoring management or improving corporate governance. Overall, corporate governance mechanisms including board size, board independence, and institutional investors do not help Chinese firms avoid corporate scandals. Although not reported, we also perform many other variations of the regressions on governance variables. The results are all similar to those in Table 3.

Note that our results are different from those of Chen, Firth, Gao, and Rui (2006). Using similar data from the CSRC, Chen et al. find that ownership is not important in explaining fraud while board characteristics are important, including the proportion of independent directors on the board. The different results are likely due in part to the fact that in their regression models they do not include the square of the largest shareholder's ownership share. As we show in Table 3, the relation between fraud and ownership share is not linear: when both ownership and its square are included in the regressions, we find that ownership is important in explaining corporate securities violations. Chen et al. also do not control for institutional holdings, which is an important factor in explaining fraud.

4.2 Other controls

It is possible that firms in financial distress are more likely to commit fraud in order to survive the distress. In all regressions in Table 3, we use three variables to control for financial distress, namely, *DEBT* (debt to equity), *LIQUIDITY* (current

assets to current liabilities), and *ROA*. We find that *LIQUIDITY* is statistically significant in all regressions. Thus, when a firm is safer in terms of short-term solvency, the firm is less likely to commit scandal. With respect to *ROA,* it is significant or close to significant in some regressions. Thus, when a firm's ROA is high, the firm is more profitable and less likely to commit a securities violation. Finally, turning to *BIGFOUR,* we find that *BIGFOUR* is negative but not significant in all regressions. This suggests that the international Big Four auditing firms may not be effective external monitors for Chinese firms, and hence are not able to help avoid corporate scandals.

4.3 Regressions on variables for regional marketization, legal system development, and economic development

We first examine the relation between a region's marketization and a firm's tendency to commit fraud. Column 1 of Table 4 reports the regression results. We see that *Marketization* is negative but not statistically significant. Because it is possible that an index is too broad measure, we examine more specific factors.

Recall that we construct three sets of measures of the effectiveness of the legal system in China. The first set of variables is based on procuratorate system. In Column 2 of Table 4, we include *PROCUGDP*, the ratio of the number of commercial cases initiated by the procurator in a province to the province's GDP. The coefficient on *PROCUGDP* is positive and significant. Thus, as the ratio of the number of commercial cases initiated by the procurator to the GDP of a province increases, a firm in the region is more likely to commit fraud. This observation is not consistent

with the conventional wisdom that a large number of commercial cases per capita indicates that a legal system is effectively deterring firms from commit violations. In China, the legal system, especially the procuratorate system, is insufficient, with only a small portion of illegal activities formally being brought to court by the procurators. Thus, in this context, a large number of commercial cases per capita is evidence not of an effective legal system, but rather of the extent of illegal activities. Consequently, as the number of commercial cases in a province initiated by the procurator scaled by the province's GDP increases, a firm in the region is more likely to commit scandal. This suggests there exists an externality effect whereby a firm is more likely to follow others and commit fraud when there exist more illegal activities in a "neighborhood." In untabulated results, we also include *OFFICPC* in regressions, but its coefficient is not significant.

The second set of legal development variables are based on China's court system. In Column 3 of Table 4, we include *RCMP,* the number of commercial suits per capita received by the court in a province, and its square, *RCMPSQ*. The coefficient on *RCMP* is positive and significant and the coefficient on *RCMPSQ* is negative and significant. Thus, 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 fraud. However, as the number of commercial cases per capita received by the court of a province continues to increase beyond a certain level, the probability that a firm in the region will commit fraud drops. This suggests that when the number of commercial cases per capita received by the court of a province is at a low level, the court system is not

effective, likely because many people choose not to seek redress or protection in the courts. Zhang and Ke (2002) collect data on economic and commercial suits in a local court in China and find that there exists an adverse selection problem. Two phenomena exist at the same time: a high rate of default on contracts and a high rate of recovery for plaintiffs in judgments. Zhang and Ke argue that the high recovery rate for plaintiffs indicates the ineffectiveness of the court system in China. When a court system is ineffective, people will only initiate suits if the probability of winning the case is high; thus, in this context the higher *RCMP* indicates that there exist many more violations or defaults than those brought to court. However, when the court system becomes better developed, more people will choose to go to court and the number of commercial cases per capita received by the court of a province will increase. As the court system becomes effective, firms in the region will be less likely to commit scandal. Thus we find an inverse U-shaped relation between the probability of a firm committing a violation and the *RCMP*.

Looking at the RCMP data more closely, we find that there is huge variation in RCMP across provinces. The provinces with the highest RCMP are the more developed provinces including Shanghai and Zhejiang. These provinces have dramatically higher RCMP that less developed provinces. This supports our argument. Though not reported we also include *CASECLOSE,* the case-close rate in commercial cases, in our regressions. The coefficient for *CASECLOSE* is not significant. This is due to little variation in *CASECLOSE* after mid-1990, when the China Super Court required all regional courts to improve the case- close rate in commercial cases.

In Column 4 of Table 4, we include *PROCUGDP, RCMP,* and *RCMPSQ* in the regression model together. We examine how the combination of two essential components in China's legal system, the procurorate system and the court system, affect the incidence of corporate scandals. We find that as the ratio of the number of commercial cases initiated by the procurator to the GDP of a province increases, a firm in the region is more likely to commit fraud. Further, as *RCMP* increases from a very low level, a firm in the region is more likely to commit scandal, whereas after RCMP reaches a certain level, the probability that a firm in the region will commit a violation declines.

In Column 5, in addition to procurorate system and court system, we include the impact of lawyers in regressions. The results are similar to those of Column 4 in terms of the impact of the procurorate system and the court system on corporate scandals. However, *LAWYGDP* is not significant. This is consistent with perceptions that lawyers have limited impact on the effectiveness of law in China, even though the number of lawyers has grown significantly during the past decade. Though not reported, the results are similar when we include *LAWPC*.

In Column 6, the GDP per capita of a province is negative and significant. In a region with higher GDP per capita, a firm is less likely to commit fraud. This suggests that when a region is more economically developed, firms in that region are less likely to commit scandals. This may also be due to the fact that a more developed economy enjoys more open flow of information, which decreases the costs of monitoring management. However, there may be an endogeneity issue in that more firms

committing fraud in a region is likely to lead to lower GDP per capita in the region.

4.4 Regressions on variables for regional financial system development

It is possible that the level of financial system development may affect a firm's probability of committing fraud in that if firms are not able to raise capital in a less developed financial system, they may have an incentive to commit a violation in order to obtain access to capital. Thus, we examine the relation between the level of a region's financial system development and the probability of a firm in the region committing fraud.

In Column 1 of Table 5, we include *FINCOMP*, the ratio of the proportion of credit issued by local financial institutions to the total amount of credit, to measure the extent of financial competition. While traditionally the four major banks in China have extended most of the bank loans, local financial institutions have grown rapidly in recent years. The coefficient on *FINCOMP* is negative but statistically insignificant. In Column 2, we include *PRINVEST*, the ratio of private investment to total investments, as a measure of financial liberalization. The coefficient of *PRINVEST* is negative but not significant. In Column 3, we include *FINCOMP* and *PRINVEST* together; both are not significant. In Column 4, we include legal proxies, *RCMP,* and *FINCOMP*; the coefficient on *FINCOMP* is negative but statistically insignificant, but consistent with the results in the previous section, *RCMP* has a significant impact on the incidence of corporate scandals. In sum, there is no evidence that financial development is related to a firm's probability of committing a securities violation.

5. Conclusions

We examine whether certain corporate governance mechanisms are related to the incidence of corporate scandal in Chinese listed firms. We find that while ownership is related to the probability of a firm committing fraud, there is no evidence that other corporate governance characteristics such as board size, board independence, and institutional ownership are related to the probability of a firm committing fraud. The Chinese government has required listed firms to use corporate governance mechanisms developed in the U.S. and other developed markets. However, we find no evidence that these mechanisms can help Chinese firms avoid corporate scandals.

Corporate governance may not be the only issue related to a firm's propensity to commit fraud in an emerging market. Indeed, we find that in a region in which the number of commercial cases investigated by procurator is larger, a firm in the region is more likely to commit fraud. This observation suggests that when the procuratorate system is not effective, a firm is more likely to commit fraud if more firms in its "neighborhood" are doing so. In addition, we find a non-linear relation between the number of commercial cases per capita that are tried in a region's court and the probability of a firm in that region committing fraud: as the number of commercial suits per capita tried in a province's court increases from low levels, the probability of a firm committing fraud increases; however, when the number of commercial suits per capita tried in a region's court reaches a certain level, the probability of a firm committing fraud falls. This finding suggests that when a region's court system becomes effective and more people and firms turn to court for legal protection, firms will be constrained in their ability to commit fraud. Finally, we find that the level of a

region’s economic development is negatively related to the probability of a firm in the region committing fraud: as a region’s GDP per capita increases, a firm in the region will be less likely to be involved in a scandal.

Overall our findings suggest that in the Chinese emerging market, the standard corporate governance mechanisms have not been sufficient to avoid corporate scandals. Indeed, a large number of serious scandals have contributed to the stagnancy of Chinese stock market in spite of these governance mechanisms. In this paper we argue that this may be due to China’s weak legal system, especially the low enforcement of law. More broadly, without effective law enforcement, corporate governance mechanisms may not be effective in an emerging market economy. The policy implications of our study are clear. To develop a more efficient and robust stock market, China needs to improve not only corporate governance mechanisms, but more importantly, the effectiveness of its legal system.

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TABLE 1 Number of scandals each year, 1993-2003

First year of scandal	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 and Logistic regressions of *SCANDAL* on corporate governance variables

Variables	OLS	OLS	logistic	logistic	logistic	logistic
LARGEST	-0.08	-1.18*	-0.214	-4.96*	-0.35	-5.13*
	(-0.49)	(-1.79)	(-0.32)	(-1.76)	(-0.52)	(-1.81)
LARGESTSQ		1.24*		5.33*		5.36*
		(1.73)		(1.74)		(1.74)
BOARDSIZE	-0.0056	-0.008	-0.026	-0.035	-0.025	-0.34
	(-0.59)	(-0.78)	(-0.65)	(-0.86)	(-0.63)	(-0.83)
CHAIRCEO	-0.0098	-0.012	-0.060	-0.66	-0.024	-0.030
	(-0.15)	(-0.19)	(-0.23)	(-0.25)	(-0.09)	(-0.11)
INDEPENDENT	-0.015	-0.015	-0.054	-0.051	-0.066	-0.065
	(-0.34)	(-0.34)	(-0.29)	(-0.28)	(-0.36)	(-0.36)
CHAIRHOLD	-1.99	-2.05*	-11.2	-10.9	-10.7	-10.5
	(-1.61)	(-1.66)	(-1.58)	(-1.59)	(-1.54)	(-1.57)
DIRHOLD	-0.013	-0.011	0.0028	0.0032		
	(-0.14)	(-0.12)	(0.01)	(0.01)		
INSTITUTE	-0.016	-0.014			-0.076	-0.074
	(-1.51)	(-1.43)			(-1.54)	(-1.49)
GROUP	0.065	0.069			0.30	0.313
	(1.07)	(1.13)			(1.15)	(1.21)
BIGFOUR	-0.195	-0.196	-0.89	-0.91	-0.85	-0.86
	(-1.43)	(-1.44)	(-1.45)	(-1.47)	(-1.38)	(-1.40)
DEBT	0.0066	0.005	0.013	0.066	0.024	0.017
	(0.64)	(0.48)	(0.29)	(0.14)	(0.50)	(0.35)
ROA	-0.476	-0.470	-2.36	-2.40	-2.67*	-2.71
	(-1.64)	(-1.62)	(-1.45)	(-1.45)	(-1.63)	(-1.62)
LIQUIDITY	-0.045**	-0.043**	-0.195**	-0.189**	-0.208*	-0.203*
	(-2.26)	(-2.18)	(-2.00)	(-1.92)	(-2.09)	(-2.02)
CONSTANT	0.72	0.94	0.957	0.92	1.01	0.98
	(4.89)	(5.22)	(1.77)	(2.46)	(1.87)	(2.53)
Adjusted R^2	0.032	0.038				
Log Likelihood			-211.9	-210.4	-209.8	-208.3
Number of observations	320	320	320	320	320	320

Note: Columns 1 and 2 report results from OLS regressions; Columns 3 through 6 report results from logistic regressions. The dependent variable, *SCANDAL*, is a dummy variable equal to 1 if a firm commits a scandal, and 0 otherwise. *CHAIRCEO* is a dummy variable equal to 1 if a single person is both CEO and Chairman of the Board at the same time, and 0 otherwise. *BOARDSIZE* is the number of members on the board of directors. *INDEPENDENT* is the ratio of independent directors to board size. *CHAIRHOLD* is the ownership share of the Chairman of the Board. *HOLDDIR* is the ratio of directors holding shares to board size. *LARGEST* is the ownership share of the largest stockholder. *LARGESTSQ* is the square of the ownership share of the largest stockholder. *INSTITUTE* is institutional holdings. *GROUP* is a dummy equal to 1 if the firm is affiliated with a group, and 0 otherwise. *BIGFOUR* is a

dummy equal to 1 if the auditor of the firm is one of international Big Four firms, and 0 otherwise. *DEBT* is the debt to equity ratio. *LIQUIDITY* is current assets to current liabilities. *ROA* is return on assets. The z statistics are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 4 Logistic regressions of SCANDAL on proxies for provincial marketization, economic development, and legal development

Variables						
LARGEST	-4.94*	-5.07*	-5.04*	-5.25*	-5.61*	-5.26*
	(-1.75)	(-1.79)	(-1.77)	(-1.82)	(-1.92)	(1.83)
LARGESTSQ	5.31*	5.60*	5.22*	5.52*	5.89*	5.54*
	(1.72)	(1.81)	(1.69)	(1.77)	(1.86)	(1.77)
BOARD	-0.036	-0.0287	-0.0385	-0.043	-0.041	-0.436
	(-0.89)	(-0.71)	(-0.95)	(-1.04)	(-0.99)	(-1.05)
CHAIRCEO	-0.010	-0.191	-0.0223	-0.148	-0.156	-0.145
	(-0.04)	(-0.70)	(-0.08)	(-0.53)	(-0.55)	(-0.52)
INDEPENDENT	-0.050	-0.059	-0.062	-0.050	-0.054	-0.024
	(-0.27)	(-0.32)	(-0.34)	(-0.27)	(-0.29)	(-0.13)
CHAIRHOLD	-9.68	-10.9	-9.65	-9.63	-10.15	-10.7
	(-1.44)	(-1.58)	(-1.44)	(-1.42)	(-1.47)	(-1.51)
DIRHOLD	-0.039	-0.239	-0.051	-0.192	-0.198	-0.249
	(-0.10)	(-0.59)	(-0.13)	(-0.47)	(-0.49)	(-0.60)
INSTITUTE	-0.078		-0.080	-0.078	-0.079	-0.079
	(-1.59)		(-1.60)	(-1.58)	(-1.58)	(-1.59)
MARKETIZATION	-0.0098	0.104				0.0310
	(-0.11)	(0.93)				(0.30)
LGDPPC						-1.34*
						(-1.85)
PROCUGDP		1.04*		0.935*	0.978*	
		(1.72)		(1.77)	(1.84)	
RCMP			0.110*	0.134**	0.129*	0.144**
			(1.69)	(2.01)	(1.94)	(2.14)
RCMPSQ			-0.003*	-0.003*	-0.003*	-0.003*
			(-1.68)	(1.84)	(-1.80)	(-1.77)
LAWYGDP					-0.29	
					(-0.94)	
DEBT		0.0099	0.018	0.024	0.025	0.025
		(0.21)	(0.36)	(0.48)	(0.50)	(0.50)
ROA	-2.63	-2.64	-2.58	-2.96*	-3.00	-2.97*
	(-1.53)	(-1.58)	(-1.51)	(-1.69)	(-1.70)	(-1.67)
LIQUIDITY	-0.198*	-0.186*	-0.190**	-0.187*	-0.178*	-0.188*
	(-2.02)	(-1.88)	(-1.96)	(-1.88)	(-1.79)	(-1.89)
CONSTANT	1.11	0.87	1.29	0.78	1.24	0.67
	(2.09)	(0.73)	(1.41)	(0.82)	(1.16)	(0.58)
Log Likelihood	-209.0	-210.0	-208.5	-206.9	-206.5	-206.7
Number of observations	320	320	320	320	320	320

Note: The dependent variable, *SCANDAL*, is a dummy variable equal to 1 if a firm commits a scandal,

and 0 otherwise. *CHAIRCEO* is a dummy variable equal to 1 if a single person is both CEO and Chairman of the Board at the same time, and 0 otherwise. *BOARDSIZE* is the number of members on the board of directors. *INDEPENDENT* is the ratio of independent directors to board size. *CHAIRHOLD* is the ownership share of the Chairman of the Board. *HOLDDIR* is the ratio of directors holding shares to board size. *LARGEST* is the ownership share of the largest stockholder. *LARGESTSQ* is the square of the ownership share of the largest stockholder. *INSTITUTE* is institutional holdings. *MARKETIZATION* is the NERI Index of level of marketization of a province. *LGDPPC* is the logarithm of GDP (in 100 million Chinese yuan) of a province divided by the population (in 10 thousand). *PROCUGDP is* ratio of the number of commercial cases initiated by the procurator in a province to the province's GDP. *RCMP* is the number of commercial cases received by the court per capita (millions). *RCMPSQ* is the square of *RCMP. LAWYGDP* is the number of registered lawyers divided by the GDP in a province. *DEBT* is the debt to equity ratio. *LIQUIDITY* is current assets to current liabilities. *ROA* is return on assets. The z statistics are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 5 Logistic regressions of *SCANDAL* on proxies for financial system development

Variables				
LARGEST	-4.74*	-4.73*	-4.75*	-5.02*
	(-1.68)	(-1.67)	(-1.68)	(-1.76)
LARGESTSQ	5.14*	5.13*	5.15*	5.21
	(1.67)	(1.67)	(1.67)	(1.68)
CHAIRCEO	0.0001	-0.013	-0.135	-0.023
	(0.00)	(-0.05)	(-0.05)	(-0.09)
INEPENDENT	-0.073	-0.057	-0.059	-0.057
	(-0.40)	(-0.31)	(-0.32)	(-0.31)
CHAIRHOLD	-9.25	-9.03	-9.11	-9.55
	(-1.39)	(-1.37)	(-1.37)	(-1.43)
DIRHOLD	-0.081	-0.135	-0.12	-0.069
	(-0.20)	(-0.33)	(-0.30)	(-0.17)
INSTITUTE	-0.082	-0.082	-0.83	-0.079
	(-1.60)	(-1.66)	(-1.57)	(-1.60)
RCMP				0.11*
				(1.70))
RCMPSQ				-0.003**
				(-1.68)
FINCOMP	0.056		0.164	-0.156
	(0.07)		(0.21)	(-0.20)
PRIVINVEST		-0.605	-0.686	
		(-0.46)	(-0.50)	
DEBT	0.018	0.020	0.019	0.019
	(0.36)	(0.40)	(0.39)	(0.37)
ROA	-2.77	-2.88*	-2.88*	-2.59
	(-1.64)	(-1.68)	(-1.68)	(-1.51)
LIQUIDITY	-0.193*	-0.193*	-0.190*	-0.194**
	(-1.95)	(-1.94)	(-1.92)	(-1.76)
CONSTANT	0.90	1.19	1.14	01.35
	(2.18)	(2.25)	(2.14)	(1.40)
Log Likelihood	-210.1	-210.0	-210.0	-208.5
Number of observations	320	320	320	320

Note: The dependent variable, *SCANDAL*, is a dummy variable equal to 1 if a firm commits a scandal, and 0 otherwise. *CHAIRCEO* is a dummy variable equal to 1 if a single person is both CEO and Chairman of the Board at the same time, and 0 otherwise. *BOARDSIZE* is the number of members on the board of directors. *INDEPENDENT* is the ratio of independent directors to board size. *CHAIRHOLD* is the ownership share of the Chairman of the Board. *HOLDDIR* is the ratio of directors holding shares to board size. *LARGEST* is the ownership share of the largest stockholder. *LARGESTSQ* is the square of the ownership share of the largest stockholder. *INSTITUTE* is institutional holdings. *RCMP* is the number of commercial cases received by the court per capita (millions). *RCMPSQ* is the square of *RCMP. FINCOMP* is the proportion of credit issued by local financial institutions to the total

amount of credit in a province. *PRINVEST* is the proportion of fixed-asset investment made by private enterprises to the total amount of fixed-asset investment in a province. *DEBT* is the debt to equity ratio. *LIQUIDITY* is current assets to current liabilities. *ROA* is return on assets. The z statistics are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.