# Rent Seeking and Corporate Finance: Evidence from Corruption Cases

Joseph P.H. Fan<sup>a</sup>, Oliver Meng Rui<sup>b</sup>, and Mengxin Zhao<sup>c</sup>

<sup>a</sup>Faculty of Business Administration, The Chinese University of Hong Kong; pjfan@cuhk.edu.hk; 852-2609-7839.

<sup>b</sup>Faculty of Business Administration, The Chinese University of Hong Kong; <u>oliver@cuhk.edu.hk</u>; 852-2609-7594.

<sup>c</sup> Department of Finance, Bentley College; <u>mzhao@bently.edu</u>; 1-781-891-2570.

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# Abstract

This study investigates the impact of political rent seeking on corporate financing behaviors in China – a country plagued by corruption problems and high corporate sector debt. Based on 23 high level government officer corruption cases, we identify a set of publicly traded companies whose senior managers engage in bribing the corrupt bureaucrats or are connected with the bureaucrats through prior job affiliations. We report significant decline in these companies' leverage and debt maturity ratios relative to other unconnected firms subsequent to the arrest of the bureaucrats. These relations persist even if we only focus on the connected firms that are not involved in the corruption cases. This suggests that the weakened debt financing strength of the companies is not only attributable to the corruption cases per se, but also due to the lost connections with the bureaucrats. Our event study reveals that the relative decline in firm leverage are associated with negative stock market effects around the corruption events, reflecting the weakened financing capacity resulting from the lost political connections. This study's overall evidence highlight the importance of rent seeking in firm behaviors, and support recent cross-country studies' findings that country-level institutional factors matter to corporate financing choices.

JEL Classification: D23; G32; G38; K42; P26; P31 Key Words: Corruption; Rent Seeking; Corporate Finance; Capital Structure; China

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### **Rent Seeking and Corporate Finance: Evidence from Corruption Cases**

### **1. Introduction**

It is well known that debt, in particular short-term debt, is the dominant external financing source for companies in developing economies and emerging markets. The high corporate financial leverage in emerging markets, and more generally differences in corporate financing structures across countries, can only be partially explained by conventional theories that focus on firm or industry factors.<sup>1</sup> More recent cross-country studies reveal that a significant part of the corporate financing patterns unexplained by firm or industry factors can instead be explained by country-level institutional factors (Demirguc-Kunt and Maksimovic, 1996, 1998, 1999, 2001; Rajan and Zingales, 1996; Booth, Aivazian, Demirguc-Kunt, and Maksimovic, 1999; Claessens, Djankov and Nenova, 2001; Giannetti, 2003; Fan, Titman, and Twite, 2005).

This study examines the impact of political rent seeking and corruption in corporate financing decisions. In an economy plagued by corruption, firms are likely to finance with more debt as opposed to equity. This might be the case for several reasons. First, debt provides a higher degree of monitoring ability and enforcement by investors (Smith and Watts, 1979) than an open-ended equity claim which provides little protection from expropriation by managers or bureaucrats. Second, it might be easier for a corrupt bureaucrat to channel funds in the form of loans to his connected firms through a bank he controls (La Porta et al., 2002; Sapienza, 2004), rather than through the equity market that he has smaller ability to influence. Similar considerations apply to debt maturity. Firms in a more corrupt system are more likely to use short-term debts, because they provide better investor protection than long-term debts can

<sup>&</sup>lt;sup>1</sup> This literature includes Miller (1977), Bradley, Jarrell, and Kim (1984); Myers and Majluf (1984), Titman and Wessels (1988), Barclay and Smith (1995), MacKay and Phillips (2001), and many others.

provide. However, politically-connected firms should have better access to long-term debt than unconnected firms have.

We test the second explanation of corporate financing in emerging markets – the rent seeking hypothesis. To have a control experiment, we collect a sample of 23 high (mostly provincial) level government officer corruption cases in China during 1995 to 2003. Among the 394 public listed companies within the corrupt bureaucrats' jurisdiction, we identify 86 companies whose senior managers or directors have engaged in bribing the bureaucrats (the bribing firms) or are connected with the bureaucrats through current or past job affiliations (the connected firms). We examine the leverage and debt maturity structures of the bribers and the connected firms, and how these financing structures change relative to those of other unconnected/matching firms around the corruption cases.

We find that both the bribers' and the connected firms' financial leverages, measured by total debt over total assets, are significantly reduced relative to the unconnected (or matching) firms subsequent to the arrest of the corrupt bureaucrats. The relative decline in leverage is mainly attributable to decrease in long-term debt, while the relative level of short-term debt is not significantly changed. Consistently, the bribing firms and the connected firms' debt maturities, measured by long-term debt over total debt, are significantly shortened subsequent to the capture of the bureaucrats. These results are robust to various leverage and maturity measures, inclusion of supplier credits as an additional source of financing, and inclusion of various control variables. The results suggest that being connected with corrupt bureaucrats provide firms a comparative advantage of access to debt, in particular long-term debt. The debt financing advantage disappears when the connections are broken due to the arrest of the bureaucrats.

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To examine whether any of the lost financing advantage is reflected in lower firm value, we perform an event study in which we estimate the cumulative abnormal stock returns (CARs) of the firms around the initial public release of the corruption news. We employ various long and short event windows to estimate CARs. We find that CARs are positively related to change in leverage measured as the difference in three-year mean leverage before and after the corruption events. These relations are significant in six out of the ten event windows, and are robust to the inclusion of control variables. A parallel event study is performed for any stock market effect of change in long-term debt ratio. Again, the results suggest a positive relation between CARs and change in long-term debt ratio. The event study results suggest that the stock markets discount the value of the firms whose financial leverages reduce (or do not increase as much as other firms) around the corruption events. In retrospect, bribing or being connected with bureaucrats might have gained firms debt financing advantages, before the bureaucrats are caught guilty.

The overall empirical evidence suggests that public sector governance affects corporate financing behaviors. It corroborates previous cross-country studies pointing to the importance of country institutional factors in shaping corporate financing decisions. In particular, Demirguc-Kunt and Maksimovic (1999) report that companies in countries with higher quality legal systems and property rights enforcement have longer debt maturity. Fan, Titman, and Twite (2005) report that corporate capital structure and debt maturity decisions are closely related to a country's tax system, legal system, and corruption level.

This study is built on an economic literature showing that rent seeking importantly explains firm behaviors and economic growth (Shleifer and Vishny, 1994, 1998; and many others). Several recent papers report that a significant part of firm value comes from corruption and rent

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seeking activities (Fisman, 2001, Johnson and Mitton, 2003; Ramalho, 2003). Faccio (forthcoming) shows cross-country evidence that firms seek rents from the state. Fan, Wong, and Zhang (2005) report evidence that local bureaucrats seek rents from publicly traded firms in China. Our finding that the rent seeking factor influences the allocation of financial capital among firms is consistent with two recent studies of the Chinese financial system suggesting that China's institutional and regulatory environments foster connection-based corporate governance (Allen, Qian, and Qian, 2005a, b).

Our evidence corroborates with Johnson, McMillan, and Woodruff (2002) and Acemoglu and Johnson (forthcoming) showing that the risk of expropriation by governments is a fundamental factor that shapes the financial development of a country. Durney, Li, Morck, and Yeung (2004) show that the low efficiency of some transition economies' capital markets in disseminating firm-specific information is closely related to weak property rights protection and poor government quality. Our study complements a host of studies that examine the roles of political connectedness in corporate financing behaviors. Charumilind, Kali, and Wiwattanakantang (forthcoming) find that Thai-firms with connections to banks and politicians have more long-term debt than firms without such ties do. Leuz and Oberholzer-Gee (2005) report that politically-connected firms in Indonesia are less likely than politically unconnected firms to raise equity capital in foreign markets, possibly because domestic banks provide the connected firms capital at low costs. Cull and Xu (forthcoming) report that access to bank loans is associated with more firm investment in China, and that the Chinese firms' investment behaviors are related to both the risk of government expropriation and contract enforcement. Khwaja and Mian (2004) report that politically connected firms in Pakistan receive abnormal lending from government banks and suffer from abnormal default rates. Chiu and Joh (2004)

report similar evidence for South Korea. Siegel (2005) reports that Korean firms connected to politicians gain better access to key outside resources through cross-border alliances. Faccio, Masulis, and McConnell (2005) in a cross-country study report that politically connected firms are more likely to be bailed out by governments and their performance worsen more subsequent to their bailouts than non-connected firms.

Compared with the prior studies, our single-country event study setting offers several advantages. The empirical setting allows us to focus on a specific institutional factor, rent seeking, while holding constant other institutional factors that might correlated with either rent seeking or corporate financing decisions. Moreover, the empirical design addresses potential endogeneity in the relations between corporate financing choices and corruption. Since the connected firms are non-bribers, the corruption events are likely unexpected shocks. The subsequent changes in their leverage and debt maturity structures are less likely caused by their direct involvement in the corruption cases, but more likely due to lost connections with the corrupt bureaucrats.

The remainder of the paper proceeds as follows. Section 2 provides an overview of China's financial markets and rent seeking activities. Section 3 presents the sample, data, and the empirical results of the effects of the corruption events on capital and debt maturity structures. Section 4 presents the results of the event study. Section 5 summarizes the results of additional robustness tests. Section 6 concludes the paper.

#### **2. Institutional setting**

This section describes China's rent seeking and corruption activities, its financial markets, and how the rent seeking activities shape firms' financing decisions.

# 2.1. Corruption in China

China is rapidly becoming one of the largest economies in the world as well as a leading destination for investments. However, it is also regarded as a highly corrupt country by world standards. The Heritage Foundation and *The Wall Street Journal* co-publish the Index of Economic Freedom, which ranks countries on 50 independent economic variables, including ones relating to corruption in the judiciary, the rule of law, and the ability to enforce contracts. Overall, the U.S. ranks 6<sup>th</sup>, while China ranks 128<sup>th</sup> out of 161 countries.<sup>2</sup> La Porta, Lopez-de-Silanes, Pop-Eleches and Shleifer (2004) find that China ranks among the worst countries in terms of political freedom as well as the protection of property rights. China is ranked 71 out of 145 based on the Corruption Perception Index of Transparency International.<sup>3</sup> According to the official record of the China Central Commission for Inspecting Discipline, during 1997-2002, there are totally 861,917 corruption cases under investigation, 842,760 corruption cases concluded and 846,150 people punished by communist laws, of which 137,711 expelled from the communist party.

# 2.2. Corporate financing activities in China

China has maintained a government-dominated financial system. The government tightly controls entry to commercial banking, investment banking and other financial services. The banking system in China comprises the central bank, four large state-owned commercial banks, three policy banks, ten national joint-stock commercial banks, about 90 regional commercial banks, and about 3,000 urban and 42,000 rural credit cooperatives. There are also branches or representative offices of foreign banks with limited activities. The four state-owned commercial

<sup>&</sup>lt;sup>2</sup> More details are available at: <u>http://cf.heritage.org/index/country.cfm?ID=30.0</u>

<sup>&</sup>lt;sup>3</sup> The index measures the "degree to which corruption is perceived to exist among public officials and politicians. It is a composite index, drawing on 14 different polls and surveys from seven independent institutions, carried out among business people and country analysis, including surveys of residents, both local and expatriate." Source: Transparency International.

banks dominate the market<sup>4</sup>. As of late 2001, they accounted for 63 percent of loans outstanding and 62 percent of deposits. With 103,000 branches among them, they are the only financial institutions that cover virtually all locations in China. The three policy banks were established during the reform of the financial system in 1994 to take over the responsibilities of making policy loans from the four state commercial banks. Their mandates include making policy or low-interest loans to large government infrastructure investment projects specified by the government polices, providing agricultural financial services and subsidiary financing for the acquisition and storage of agricultural products, and supporting import and export credit for electronic and machinery equipment systems.

Even though China's two major stock exchanges—Shanghai and Shenzhen—have only existed since 1990 and 1991, respectively, the number of companies listed on them had grown to 1,377 by the end of 2004. The total market capitalization of these listed firms on that date was US\$448.6 billion, which was equal to about 36% of China's gross domestic product.<sup>5</sup> Despite this phenomenal growth, equity financing still lagged far behind debt financing as the country's mode of financing for the period from 1993 to 2001. The role of the banking sector in the Chinese economy is vital. Based on China Statistical Yearbook 2002, the accumulated capital raised from stock markets is RMB670 billion yuan (US\$79 billion), while bond outstanding is RMB86 billion yuan (US\$1,197 billion). The capital raised from stock issuance is only 6.5% of the capital raised from both bank loan and bond issuance. Tong (2005) estimates that equity financing only represented 10% to 20% of all financing for the listed firms in this period.

<sup>&</sup>lt;sup>4</sup> The four state-owned banks are Industrial and Commercial Bank of China (ICBC), the Agriculture Bank of China (ABC), Bank of China (BOC) and China Construction Bank (CCB).

<sup>&</sup>lt;sup>5</sup> This information is obtained from the China Securities Regulatory Commission (CSRC) website: <u>http://www.csrc.gov.cn</u>.

Allen, Qian and Qian (2005a, b) find that debt-financing is the dominant mode and most bank credits are issued to companies in the State and Listed Sectors, because banks are obliged to provide long-term financing support for key projects promoted by various government economic plans. They also show that China's banking system is run at low efficiency, as in the amount of non-performing loans (NPL) within the four state commercial banks. Statistics show that the outstanding NPL of major Chinese banks remained at 2.44 trillion yuan (289.96 billion US dollars) by the end of 2003, with an NPL ratio of 17.8 percent. The big four state-owned commercial banks accounted for 1.91 trillion yuan (230.76 billion US dollars), with an NPL of 20.36 percent. A large proportion of these non-performing loans resulted from poor lending decisions made for state-owned enterprises, some of which were due to political or other non-economic reasons.

As significant resources in transitional China are still allocated either directly or indirectly by the state, political connection is likely important and impact the allocation of scarce resources such as bank loans. On the other hand, corruption is pervasive in the financial sector of China. Chinese anti-corruption officials have turned their sword to the financial industry recently, as the corruption in the financial system is viewed as more destructive to the country's financial health than other problems. Wang Xuebing, former governor of the Construction Bank of China was sentenced to 12 years imprisonment in 2002 on a charge of accepting bribes worth 1.15 million yuan (US\$139,000) in 1993-2001. Liu Jinbao, vice president of the Bank of China, received suspended death sentence in 2005. Prosecutors accused Liu of embezzling 14.48 million yuan (US\$1.75 million), of which he personally pocketed 7.72 million yuan. He also received bribes amounting to 1.43 million yuan and was unable to account for 14.78 million yuan in personal assets. Obtaining large scale data on such detected or undetected criminal cases is difficult, due to China's opaque information disclosure. However, the review of the overall financial system and the stylized examples suggest that a link between corporate finance and rent seeking is plausible. We proceed to examine such links in the next section.

# 3. Empirical analysis

This section describes the sample, provides basic statistics of the financing structures of the sample firms, and reports regression results of the effects of rent seeking on the financing structures of the firms around the corruption events.

# 3.1. The sample

To examine how corporate financing policies change with rent seeking activities, we compile a list of corruption cases that involve high level government officers in China, and identify listed companies that are connected to these corrupt bureaucrats.

We employ the following procedure to collect corruption cases. First, we identify a list of corrupt bureaucrats,<sup>6</sup> based on two government publications: *Excerpts of Discipline Cases of the Communist Party of China* and *Villains of the Communist Party of China*<sup>7</sup>. We also make effort to collect additional corruption cases publicized by the Central Commission for Discipline Inspection of the Communist Party of China. Totally we are able to identify 23 high level government officer corruption cases occurred during 1995 to 2003.

Among the 23 cases, 20 involve provincial level government bureaucrats, one involves a central government bureaucrat, and two cases involve top executives of major state owned national banks. For each of the provincial corruption cases, we examine all publicly traded companies located in the corrupt bureaucrat's jurisdiction around the corruption event. For

<sup>&</sup>lt;sup>6</sup> These bureaucrats include Secretary of Communist Party of China, Chairman of People's Congress, Chairman of People's Political Consultative Congress, and Governor of the provincial government.

<sup>&</sup>lt;sup>7</sup> The book titles are translated from Chinese.

each of the companies, we search through the company's initial public offering prospectus and annual reports prior to the corruption event to find out whether any of the company's senior managers, directors, or top-10 shareholders has engaged in bribing the bureaucrat. This is done by searching through the above government publications and news disclosures during the investigation and lawsuit. For the 3 remaining cases that involve the central government and banks, we are able to identify publicly listed firms that have bribed these government/bank officers. Totally we identify 43 companies as bribers.

To facilitate a natural experiment, we next turn to identify a set of firms that are connected with the corrupt bureaucrats but are not bribers nor otherwise involved in the corruption cases. Again, for each company located in the jurisdiction of a corrupt bureaucrat, we search through the public disclosures to find out whether any senior managers, directors, or large shareholders are family members of or have prior job affiliation with the corrupt bureaucrat. We are able to identify 43 companies with such connections.<sup>8</sup> We call them connected firms. Finally, there are remaining 308 listed companies in the corrupt bureaucrats' jurisdictions but are neither bribers nor connected with the bureaucrats. We call them unconnected firms.

Below is an example of the searching process. A criminal case was initially exposed in Jiangshu province in 1994. It was reported that Wuxi Xing Xing industrial Ltd. illegally took substantial deposits (RMB 3.2 billion) from the public. During the investigation, it was found that Li Ming (secretary of the Beijing's mayor, Li Qiyan) was involved in the scandal. Li Ming further professed corruption evidence of Zhou Beifang (chairman and CEO of Shougang Holding HK Ltd.), Chen Jian (secretary of Chen Xitong, the secretary of the Communist Party of China in Beijing), and Chen Xiaotong (son of Chen Xitong). In early 1995, Zhou Beifang, Chen Jian, and

<sup>&</sup>lt;sup>8</sup> Almost all of them are job connections. Family ties are rare. We have not identified connected firms for the three corruption cases that involve central government or bank officers.

Chen Xiaotong were arrested. On April 5, 1995, Wang Baosheng, vice mayor of Beijing, committed suicide. Within the coming year, tens of Beijing officials were arrested. On July 31, 1998, Chen Xitong was finally sentenced to 16 years of imprisonment for corruption.

Appendix 1 illustrates our classification of the bribers, the connected firms, and the unconnected firms in the corruption case. There are totally 11 publicly traded companies in Beijing around the corruption event. We are able to identify 5 bribers (one also have job connection), 3 connected (but non-bribing) firms, and 3 unconnected firms.<sup>9</sup>

Table 1 provides a description of the 23 corruption cases. The corruption cases are initially disclosed (event day) during 1995 to 2003. The sentence day is usually a few months to a few years subsequent to the event day. The punishment received by the arrested bureaucrats varies from death penalty to dismissal from position and/or the Communist Party. As in Table 1, the 394 firms in our sample (comprising the 43 bribing firms, the 43 connected firms, and the remaining 308 unconnected firms) do not concentrate in just a few provinces but rather spread across the different China's regions.

For each of the 394 firms, we collect financial data from the China Stock Market and Accounting Research (CSMAR) financial statement database.<sup>10</sup> Daily stock prices are obtained from the CSMAR transaction database.

<sup>&</sup>lt;sup>9</sup> In Table 1, the total number of listed firms in Beijing is 12 instead of 11, because one of the connected firms is listed in both Shanghai and Hong Kong. This is the only dual listed firm in our sample. Counting the firm once or twice does not affect the paper's overall results.

<sup>&</sup>lt;sup>10</sup> This database is developed by The Hong Kong Polytechnic University and Shenzhen GTA Information Technology Co. Ltd. It follows the format of CRSP and COMPUSTAT, and is the most comprehensive financial database available for listed Chinese firms.

### 3.2. Sub-sample groupings

Our following analysis will examine changes in financing structures of the bribing firms and the connected firms around the corruption events, and compare the changes with those of the unconnected firms. To facilitate discussion, we call the bribing firms and the connected firms as "the event firms", and the unconnected firms as "the non-event firms." Separately, we will compare the financing patterns of the connected firms relative to those of the unconnected firms. As discussed in the introduction, we are particularly interested in examining the financing patterns of the connected firms around the corruption events, because the events are likely unexpected to these firms. Any reactions of financing behaviors of the connected firms will therefore likely caused by lost connections rather than by their involvement in the corruption.

To provide an alternative benchmark for comparison, we construct a matching sample of firms, and compare their financing patterns with those of the event firms. Each of the 394 firms is matched with a listed company with comparable size<sup>11</sup> and industry affiliation, and is located outside the corrupt bureaucrat's jurisdiction if applicable.

### 3.3. Descriptive statistics

A few alternative measures of corporate financing structures are employed in this study. Financial leverage is measured as total debt divided by total assets, or total debt plus account payable divided by total assets. Debt maturity is measured as long-term debt divided by total debt, or long-term debt divided by total debt plus account payable. We further define long-term leverage as long-term debt divided by total assets, and short-term leverage as short-term debt divided by total assets or short-term debt plus account payable divided by total assets. We lag the scaling factor (total assets) by one period, so that any change in the financing variables is

<sup>&</sup>lt;sup>11</sup> Firm size is measured as the book value of assets at the year end prior to the arrest of the corrupt bureaucrat. We choose the matching firm that is closest in firm size within the range of 0.5 to 1.5 times of the sample firm, given the same industry but different jurisdiction from the matched sample firm.

attributable to change in debt level.<sup>12</sup> The inclusion of account payable in the alternative leverage and debt maturity measures is to account for supplier credits as a possible source of financing.<sup>13</sup>

Table 2 provides the basic statistics of the financing variables and other firm characteristics including assets, sales, and return on assets (ROA). In Panel A and B respectively, we report the pooled firm-year mean and median values of each of the variables during the three pre-event years, and over time change in the variable, defined as the post-event three-year mean value of the variable minus the pre-event three-year mean value. The event year is excluded from the analysis.<sup>14</sup> We report these statistics for the event firms, the connected firms only, the non-event firms, and the full sample.

We first examine the assets and the sales variables. Both assets and sales increase over time. The three-year average value of assets for the full sample is 1.339 billion RMB (US\$165 million) before the event, and increase by 520 million RMB (US\$64 million) after the event. The median value of assets is 857 billion RMB (US\$106 million) prior to the event, and increase by 343 million RMB (US\$42 million) after the event. The three-year mean and median sales show similar increasing time patterns.

The increases in assets and sales are similarly observed in each of the sub-samples. The event firms' degrees of increase in assets and sales are statistically insignificant, and are smaller than those of the non-event firms. More specifically, the mean and median values of assets for the three sub-samples do not differ much before the event, and so as mean and median sales.

<sup>&</sup>lt;sup>12</sup> The corruption event may impact not only a firm's financing capability, but also its other fundamentals. Using the assets level one period before the event helps us capture change in debt financing. Any effects of changes in corporate fundamentals on firm financing will be controlled for later in regressions.

<sup>&</sup>lt;sup>13</sup> Demirguc-Kunt and Maksimovic (2001) find that trade credit is an important source of financing in economies with underdeveloped financial intermediaries.

<sup>&</sup>lt;sup>14</sup> Results do not change if we include the event year observations in our analyses.

However, we observe significant larger increases in assets and sales around the corruption events for the non-event firms than for both the event-firm and the connected-firm-only samples. Thus, the companies whose senior mangers engage in bribing the corrupt bureaucrats or are connected with the bureaucrats through prior job affiliations do not gain the same assets or sales growth as those unconnected firms. However, there is no significant time pattern for ROA in either the full sample or any of the sub-samples.

Overall, these basic statistics suggest that the event firms' levels of assets, sales, and profitability do not change significantly over time. However, the event firms seem to experience slower growth in assets and sales than that of the non-event firms after the corruption events.<sup>15</sup> In our subsequent regression analysis, we will control for the possibility that changes in the financing behaviors of the events firms around the corruption events are due to changes in fundamentals, not just broken political connections.

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With regard to financial leverage, the three-year mean (median) total debt to assets ratio of the full sample increase by 0.18 (0.18) after the events from 0.15 (0.12) before the corruption events. The overall increase in financial leverage is consistent with the general increasing reliance on debt relative to equity financing in China.

All firms in our sample experience decline in debt maturity over time. The three-year mean (median) long-term debt to total debt ratio of the full sample is 0.27 (0.18) before the events, and decrease by 0.04 (0.04) after the events.

<sup>&</sup>lt;sup>15</sup> Not reported in the Table, we also examine the patterns of book equity and dividend payout ratio. The three-year average value of equity of the non-event firms increases significantly after the events. But there is not a significant change in book equity of the event firms. The payout ratio of the non-event firms decreases after the events. But there is not a significant change in dividend payout by the event firms around the events.

We next more closely examine the debt maturity structures through the long-term debt to assets ratio and the short-term debt to assets ratio. The full sample firms' long-term financial leverage is substantially smaller than the short-term leverage both before and after the corruption events. The mean (median) long-term debt ratio is only 4 (almost 0) percent before the events, while the mean (median) short-term debt ratio is 20 (18) percent. The more significant use of short-term debt is also evident after the events, as well as across the different sub-samples. These are consistent with our understanding that Chinese firms generally rely more on short-term than long-term financing.

In summary, we have the following observations on changes in each of the financing variables for the three sub-samples. First, firms in all of the three sub-samples experience rises in their financial leverages over time, with the biggest increase taking place for the non-event firms. Second, the mean debt maturity declines, and the magnitude of which is greater for the event firms than for the non-event firms. Third, the mean long-term debt to assets ratio almost does not change among the event firms, but it increases by about 3.8 percent among non-event firms. Fourth, the mean short-term debt to assets ratio increases for both the event and non-event firms. Lastly, the above observations hold true for the connected-firms-only sub-sample. From these statistics, the corruption events seem to have larger effects on the event firms' long-term leverage than their short-term leverage.

It is interesting that the overall reported patterns are not only found in the bribing firms but also in the connected firms that are non-bribers and are not directly involved in the corruption cases. The changes in financing patterns of the connected firms are likely due to lost connections with the arrested bureaucrats rather than due to the corruption events per se. This

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implication motivates us to separately examine this connected-firms-only sub-sample in the subsequent analysis.

# 3.4. Univariate analysis of net changes in financing structures

We next examine changes in financing structures of the event firms subsequent to the corruption events, net of the corresponding changes of the non-event firms. We define the net change in a financing variable as the difference in the change in the financing variable between the event firms and the non-event firms. The change in the financing variable of a firm is calculated as the three-year mean variable value after the corruption event minus the three-year mean value before the event.

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Reported in Columns 2 and 3 of Panel A of Table 3, both the mean and median net changes in the leverage ratios of the event firms are negative and statistically significant (at the 1 percent level). These suggest that the event firms experience significant slower increase in debt financing than the non-event firms do. The mean and median net changes in the debt maturity ratios are negative, but are insignificant unless trade credits are considered. The net changes in the long-term debt to assets ratio are negative and highly significant, suggesting a decline in long-term financing of the event firms relative to that of the non-event firms. The net changes in the short-term leverage ratios are negative but significant only in the median net changes. When we focus on the connected firms only, we obtain the similar results (Columns 4 and 5).

Panel B of Table 3 employs the matching firms as an alternative benchmark for comparison of changes in the event firms' financing patterns. Overall, the results of the comparison with the matching firms are consistent with those with the non-event firms in Panel A, but are weaker in terms of statistical significance.

The above univariate analysis can be summarized graphically. Figure 1 shows the patterns of the annual mean debt to assets ratio from three years before to three years after the corruption events. There is an overall increasing pattern of the mean leverage ratios. However, the mean leverage ratio of the event firms is substantially slowed down around the corruption events and is eventually lower than that of the non-event firms (Figure 1.1). The reversal in the leverage ratio holds true even after excluding the bribing firms (Figure 1.2). Figure 2 plots the annual mean long-term debt to total debt ratio for the event firms, the non-event firms, and the connected firms. Overall the mean debt maturity ratios decrease. However, the event firms experience more substantial drops in debt maturity relative to the non-event firms, and their debt maturities become shorter than the non-event firms after the corruption events (Figure 2.1). Similar results are found for the sub-sample of connected firms (Figure 2.2). Figure 3 plots the patterns of the mean long-term debt to assets ratio. It shows a sharp decline in the long-term leverage of the event firms around the corruption events (Figure 3.1). By contrast, the long-term leverage of the non-event firms continues to increase through the event period. Excluding the bribing firms, the long-term leverage of the connected firms still decreases substantially around and after the events (Figure 3.2).

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# 3.5. Regression analysis

We next perform regression analysis to examine whether the event firms' financing policies evolve around and after the corruption events in the predicted manners, controlling for other factors that are known to affect leverage and debt maturity structures. The follow regression models are employed: 
$$\label{eq:Financing} \begin{split} Financing_{it} &= \alpha_{0i} + \alpha_1 Corrupt_{it} + \alpha_2 Post_{it} + \alpha_3 Corrupt_{it}*Post_{it} + \alpha_4 Lass_{it} + \alpha_5 Tangible_{it} + \alpha_6 Growth_{it} \\ + \alpha_7 Profit_{it} + \epsilon_{it} \end{split}$$

, where Financing represents a host of leverage and debt maturity variables measured in the various ways defined previously; Corrupt is a dummy variable equal to one if the firm is an event firm, and otherwise zero; Post is a dummy variable equal to one if the observation is after the year of the corruption event, and otherwise zero; Lass is the natural logarithm of total assets; Tangible is fixed assets over total assets; Growth is market value of equity over book value of equity; and Profit is net income over total assets. Consistent with the literature, the inclusion of the assets, growth, and profitability variables is to account for the possibility that some cross-sectional differences and/or over-time changes in financing policy are induced by differences/changes in corporate fundamentals.<sup>16</sup>

### *3.5.1. The Event firms*

The regressions are run on a pooled sample of event and non-event firms covering firm-year observations from three years before to three years after the corruption events, excluding the event year. The ordinary least squared method is employed to estimate the regression models. Since we are using pooled data, the residual of a given firm may be correlated across years for a given firm. Alternatively, the residuals of a given year may be correlated across firms. Thus, the condition that the residuals are independent and identically distributed might be violated. We estimate clustered standard errors as Peterson (2005) to account for the dependence in the residuals.

<sup>&</sup>lt;sup>16</sup> We alternatively employ sales growth and profit margin to substitute the market-to-book equity ratio ad ROA as proxies for growth and profitability. The regression results are similar.

Panel A of Table 4 reports the results of the pooled leverage and debt maturity regressions.<sup>17</sup> We initially focus on Columns 2, 3, 7 and 8. The estimated coefficients of the event firm dummy (Corrupt) are positive and significant in the leverage regressions, indicating that the bribing firms and the connected firms have higher leverage. The coefficient of Post is significantly positive in the leverage regressions (Columns 2 and 3) while significantly negative in debt maturity regressions (Columns 7 and 8), consistent with the earlier univariate results that financial leverage increases while debt maturity decreases over time.

We are particularly interested in the coefficient of the interaction term, Corrupt\*Post. It is negative and highly significant in each of the regressions, strongly suggesting that the event firms' leverage and debt maturity levels are substantially dampened upon and after the corruption events.

We next turn to the long- and short-term leverage regressions (Columns 4-6). The coefficient of Corrupt is insignificant for long-term leverage, indicating similar levels of long-term leverage between the event firms and the non-event firms. The coefficients of Corrupt are marginally significant for short-term leverage, implying the event firms have slightly higher short-term leverage than the non-event firms. The coefficient of Post is positive and significant throughout, suggesting overall increases in both short- and long-term debt. The coefficient of the interaction term, Corrupt\*Post, is negative and highly significant in the long-term leverage regression, suggesting that the event firms' long-term financing ability is weakened upon and after the corruption events. On the other hand, the coefficient of the

<sup>&</sup>lt;sup>17</sup> Extreme values of the dependent and independent variables are winsorized. The actual number of firm-year observations is 1724, smaller than the full panel. The missing data is either because that some firms have listing history shorter than our observation window that spans seven year, or that post-2003 financial data needed for firms associated with more recent corruption cases are not yet available. The numbers of observations in the debt maturity regressions are smaller than 1724, because some firms do not have any outstanding debt hence their maturity ratios are undefined.

interaction term is insignificant in the short-term leverage regressions, suggesting that the corruption events do not affect short-term debt differently between the event and the non-event firms.

The above changes in financing pattern around the corruption events cannot be explained away by differences/changes in other corporate fundamentals, because these factors are controlled in the regressions. However, some of these factors indeed affect the firms' financing patterns. Firm size (log assets) has strong positive effects on leverage and debt maturity. Asset tangibility has a positive effect on long-term debt but a negative effect on short-term debt and trade credits. It indicates that firms in China with few tangible assets tend to rely on short-term financing. The effects of growth are largely insignificant. Profit has a negative effect on leverage, but its effects on debt maturity are insignificant. These relations are largely consistent with those reported in the prior literature.

Overall, the results in Panel A of Table 4 are consistent with that the event firms indeed enjoy an advantage in raising debt capital compared with the non-event firms; but the advantage discontinues when their political connections disappear with the arrest of the corrupt bureaucrats.

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Panel B of Table 4 provides pooled regression results similar to Panel A, except that instead of the non-event firms, the sample includes the matching firms of the event firms. Here the dummy variable Corrupt is equal to one if the firm is an event firm, and zero if the firm is a matching firm. The results of the pooled regressions remain similar but weaker. In particular, the coefficient of the interaction term, Corrupt\*Post, is negative but insignificant in the leverage ratio regressions (Columns 2 and 3). The coefficient is still negative and highly significant in the debt maturity and long-term leverage regressions. The estimated coefficients of the control variables are similar to those reported in Panel A. It is interesting to note that the effect of profitability on leverage is negative and significant, mostly attributable to short-term debt.

As a robust check, we run a set of mean regressions including the pre- and post-event three-year mean values of the dependent and independent variables as observations.<sup>18</sup> Panels A and B of Table 5 report the mean regression results using the non-event firms and the matching firms as alternative benchmark. These results are similar to those of the pooled regressions (Table 4). The event firms' financial leverages (in particular long-term leverages) and debt maturities are significantly reduced relative to their control firms subsequent to the arrest of the corrupt bureaucrats. We repeat the regression using median value observations instead of mean. The results remain similar.

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### *3.5.2. The connected firms*

It could be the case that the above results are mostly attributable to the bribing firms. It would be more useful to know whether the deteriorated financing advantage associated with the corruption events can also be explained by lost political connections. For that reason we repeat the regression analysis on the connected firms only.

Panel A of Table 6 reports the pooled regression results based on the combined sample of the connected firms and the non-event firms. The dummy variable Corrupt is defined as one if the firm is a connected firm, and zero otherwise. We find that the estimated coefficient of the interaction term, Corrupt\*Post is negative but insignificant in the leverage regressions (Columns 2 and 3). The coefficient of the interaction term is negative and significant in the debt maturity and the long-term leverage regressions (Columns 4, and 7-8).

<sup>&</sup>lt;sup>18</sup> Three corruption events were initially disclosed in 2003. We do not have sufficient data to calculate the three years average after the events. Firms associated with the three events are not included in the mean regressions.

We repeat the regressions based on the combined sample of the connected firms and their matching firms. Panel B of Table 6 reports the regression results. The dummy variable Corrupt is equal to one if the firm is a connected firm, and zero if it is otherwise a matching firm. The results based on the matching firm benchmark are similar. Again, the regression results show strong negative effects of the corruption events on the connected firms' debt maturity and long-term leverage, as revealed in the negative coefficients of the interaction term, Corrupt\*Post, in Columns 4, 7 and 8. The coefficients of the leverage ratios are insignificant (Columns 2 and 3). The results also show that the event firms' short-term leverage ratios become relatively larger than those of the matching firms upon and after the corruption events, as indicated by the marginally positive coefficients of the interaction terms in Columns 5 and 6.

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In Table 7, we alternatively perform mean regressions and report results qualitatively consistent with the pooled regression findings in Table 6.

The overall evidence in Tables 4, 5, 6 and 7 suggest that the debt financing capacity of the event firms is substantially weakened during the corruption events, particularly so for their long-term debt financing ability. The results hold even if we exclude the bribing firms, suggesting that the weakened debt financing pattern is not just caused by the corruption cases but also related to the lost political connections with the corrupt bureaucrats.

### *3.5.3. The non-event firms*

It is useful to examine the financing patterns of the non-event firms – the firms in the corrupt bureaucrats' jurisdiction but are not involved in the corruptions nor connected with the

bureaucrats. Because the non-event firms are also headquartered in the same province as the corrupt bureaucrats, it is possible that their financing behaviors might be impacted even though we are not able to identify any connection between the firms and the corrupt bureaucrats. We repeat the regression analysis on the non-event firms and their matching firms. We redefine Corrupt as one (perhaps unfairly) when the firm is a non-event firm, and zero if it is otherwise a matching firm.

The results of the pooled regressions and mean regressions are reported in Panels A and B of Table 8 respectively. Financial leverage is not significantly related to Corrupt, suggesting that the non-event firms' leverage levels are normal relative to their matching firms. There is some evidence that the non-event firms have significant longer debt maturity than their matching firms, as shown by the significant and positive coefficients of Corrupt. However, none of the coefficients of the interaction term of the various regressions is significant. This suggests that the non-event firms' financing patterns are not affected by the corruption events. The lack of relations in the non-event firm sample indicates that we have reasonably identified the event firms.

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### 4. Event study

We have established the relations consistent with the effects of rent seeking on firm's capital and debt maturity structures. The bribing firms and the connected firms have more debt and in particular long-term debt in their capital structures, before the arrest of their connected bureaucrats. We next address several questions: how stock markets react to the corruption

events, and do stock prices incorporate the information of the leverage changes around the corruption events?

### 4.1. The patterns of stock returns

To examine whether any of the lost financing advantages is reflected in lower stock valuation, we perform an event study in which we estimate the cumulative abnormal stock returns of the firms around the initial public release of the corruption news. The event day is identified as the first day that the public has been noticed of the bureaucrat's wrongdoings. Such notices can be *Shuang Gui* (a government detention measure that orders the person to confess his/her crimes at a specific location), arrestment, or removal from the current position. The event days of the 23 corruption cases have been reported in Table 1.

The standard event study methodology is used to investigate how the corruption news affects the stock prices of the firms. The abnormal return for security i on event date t is

$$AR_{i,t} = R_{i,t} - E(R_{i,t} \mid I_t)$$

, where  $AR_{i,t}$ ,  $R_{i,t}$ , and  $E(R_{i,t} | I_t)$  are the abnormal, actual, and expected returns for time period t, respectively.  $I_t$  is the information on which the expected return depends. There are two common ways for modeling the expected return: the mean adjusted returns model where  $I_t$  is a constant, and the market model where  $I_t$  is the market return. We employ both methods in our study. We use both equal- and value-weighted market returns when the market model is employed. We accumulate  $AR_{i,t}$  to obtain cumulative abnormal returns (CARs), using various event windows ranging from 60 days before to 60 days after the event day. Because the results are qualitatively similar, we report the results based on the market model and value-weighted market returns.

Figure 4 shows the patterns of daily mean CARs around the corruption events.<sup>19</sup> The average CARs of the event firms are decreasing and lower than those of the non-event firms. The mean CAR of the event firms starts to decline since fifty days before the event day. It continues to drop after the event day. The overall decrease during the event period (-60 to +60 day) is rather small, about 2%. Most of the decline in mean CAR is attributable to the bribing firms. The mean CAR of the bribing firms is negative 8% toward the end of the event period. By contrast, the mean CAR of the non-event firms does not show a significant downward trend. Overall, China's stock markets seem to be able to differentiate rent seekers from others.

# 4.2. Stock returns and changes in financing structures

To examine whether there is any association between changes in leverage and the stock market reactions around the corruption events, in Panel A of Table 9, we stratify the sample into three terciles (bottom, middle, and top) based on the degree of change in the three-year mean debt to assets ratio before and after the corruption events. We employ ten different event windows ranging from 60 days before to 60 days after the events. Overall, more positive changes in leverage are associated with higher CARs, and more negative changes in leverage are associated with higher CARs, and more negative changes in leverage are between the top and the bottom terciles, we find that most of the mean and median CARs in the top tercile are significantly higher than those in the bottom ones. Moreover, 35% of the firms in the bottom tercile are either bribing firms or connected firms, while only 12% of the firms in the top tercile are bribing or connected firms.

<sup>&</sup>lt;sup>19</sup> Due to missing stock return data of some firms, the sample size is 340 firms.

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The previous results show that the corruption events have larger effects on the event firms' long-term leverage than their short-term leverage. Therefore, we examine whether there is any association between changes in the long-term debt ratio and the stock market reactions around the corruption events. The results are reported in Panel B of Table 9. We stratify the sample into three terciles (bottom, middle, and top) based on the degree of change in the three-year mean long-term debt to assets ratio before and after the corruption events. The results are similar to those in Panel A. More positive changes in long-term leverage are associated with higher CARs, and more negative changes in long-term leverage are associated with lower CARs.

We next perform regression analysis on the effects of firm financing changes on CARs. The dependent variable is CAR, alternatively measured over the ten different event windows. The key independent variable is change in leverage (Chglev), measured as the three-year mean leverage after the event minus the three-year mean leverage before the event. We also include the dummy variable, Corrupt, equal to one if the firm is an event firm, and zero otherwise. We next control for firm size (Lass) measured as the book value of assets at the year end before the event year. The regressions are run on 290 firms that have complete stock and financial data in all seven years.<sup>20</sup> All of the CAR regressions include the industry dummy variables.

The regression results in Panel A of Table 10 show that there is a significant and positive association between CAR and change in leverage. This relation is statistically significant in seven out of the ten event windows (the left panel). The relation remains after we include the dummy variable Corrupt (the middle panel) and furthermore firm size (the right panel). From

 $<sup>^{20}</sup>$  We alternatively include those firms with less than seven years of data, and compute pre- and post-event means based on available annual data. For those firms with less than three year data either prior to or after the corruption events, we take the average of the available years before measuring change in leverage. The regression results do not change.

the estimated coefficients of Corrupt, we learn that the event firms tend to experience more negative stock market reactions than the non-event firms. After including firm size, the coefficients of Corrupt become much less significant, possibly due to multicollinearity. However, the positive relation between leverage change and CAR remains significant in six out of the ten windows after controlling for firm size.

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We next examine if there is any effects of change in long-term debt on CAR around the corruption cases. Change in long-term debt is defined as the three-year mean long-term debt to assets ratio after the corruption event minus the mean ratio before the event. We replace change in leverage by change in long-term debt, and repeat the CAR regressions. Panel B of Table 10 reports the regression results. Overall, there is a positive relation between change in long-term debt and CAR. The relation is marginally weaker than that reported in Panel A.

As a robustness check, we include both growth (market-to-book equity ratio) and profitability (ROA) as additional control variables in the CAR regressions. None of these additional variables are statistically significant, nor are the current results affected by the inclusion of these additional variables.

In summary, we find that the stock market understands that political connections help firms to obtain debt capitals. Investors discount the value of the firms whose financial leverages decrease (or do not increase as much as other firms) around the corruption events.

### 5. Additional Robustness Tests

We run battery of sensitivity analyses to check the robustness of our key results. First, we redefine our event firms. If a firm is identified as a briber or a connected firm in a corruption

case, the firm is classified as an event firm in every other corruption case occurred in the same province. Previously, it is classified as an event firm only in the corruption case that it is involved. The new definition gives us 102 event firms and 51 connected firms. We then rerun our financing policy regressions and CAR analyses. Our results are qualitatively similar, and in many cases, results become stronger.

We next examine whether different degrees of punishment in the corruption cases would affect the event firms' financing behaviors differently. We include those cases in which bureaucrats are sent to prison or death role, while exclude those cases ended up with less serious punishment such as expel from service or party. Our overall results remain similar, and again in some cases results get stronger.

Firms might be delisted from trading hence create survivorship bias in our analysis. We find only five firms are delisted 1 year or 2 years after the events. Among the five firms, two firms are event firms, while the other three are non-event firms. The small number of the delisted firms is unlikely to cause systematic bias in our analysis.

Our results might be sensitive to the choice of scaling factor. We use total sales as an alternative scaling factor. The results remain intact. We also perform regression analysis on the percentage changes in total debt, long-term debt and short-term debt. The results remain qualitatively similar.

Our results might be specific to the choice of the three-year pre- and post-event window. We rerun the regressions using paired data of year -1 with year+1, year -2 with year +2, or year -3 with year +3. The results are qualitatively similar.

### 6. Conclusions

We have examined the impact of corruption and rent seeking on corporate financing behaviors in China. This is done through an event study. We identify publicly listed firms who engage in bribing or are connected with corrupt high level government bureaucrats. We find that both the bribers' and the connected firms' financial leverages are significantly reduced relative to their control firms subsequent to the arrest of the corrupt bureaucrats. The relative declines in leverage are mainly due to decreases in long-term debt, while the relative levels of short-term debt are not significantly changed. Consistently, the bribing firms and the connected firms' debt maturities are significantly shortened subsequent to the capture of the bureaucrats. These results suggest that being connected with corrupt bureaucrats provide firms a comparative advantage of access to debt, in particular long-term debt. The debt financing advantage disappears when the connections are broken due to the arrest of the bureaucrats.

We have also examined whether any of the lost financing advantages is reflected in lower stock value. The prediction is confirmed in our study of stock return patterns around the corruption events. The results suggest that the stock markets discount the values of the firms whose financial leverages reduce (or do not increase as much as other firms) around the corruption events.

Our study makes a few contributions to the literature. First, it provides evidence of the importance of institutional factors in shaping corporate financing choices, which is beginning to draw researchers' attention. Second, our single-country setting and the time-serial empirical design provide more robust evidence as it is less subject to endogeneity and omitted variable problems that are common in cross-sectional studies. Third, the results of this paper help policy makers in China to gauge the importance of fighting corruption and building market supporting

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institutions. The evidence from China is useful to other emerging markets plagued by similar institutional problems.

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# Appendix 1

# A Corrupt Bureaucrat and His Allies

This table shows the relationships between listed companies headquartered in Beijing and Chen Xitong, the secretary of the Communist Party of China in Beijing. Chen was sentenced to 16 years of imprisonment for corruption in 1998.

Firm Name	Listed	Connection Type	Note
	Market	~ 4	
Beijing	HK	Colleague &	Gao Qiming (chairman) was an ex-secretary
Development		Briber	of Chen Xitong. Besides, there were other three officials from the Paijing government
			sat on the company's board
Shougang	HK	Briber	Zhou Beifang, chairman and CEO of the
Concord Century			controlling shareholder (Shougang Holding)
			of the company, was the conspirator and
01	1117	ו' ת	briber of Chen Xitong.
Shougang	HK	Briber	Zhou Beifang, chairman and CEO of the
Technology			of the company was the conspirator and
reennorogy			briber of Chen Xitong.
Shougang	HK	Briber	Zhou Beifang (chairman and CEO) was the
Concord			conspirator and briber of Chen Xitong.
International			
Shougang	HK	Briber	Zhou Beifang (chairman and CEO) was the
Concord Grand	НΚ	Colleague	Conspirator and oriber of Chen Altong.
Denen i finting	Shanghai	Concague	Beijing City
Beijing Auto	Shanghai	Colleague	Zhu Lining (director) was the vice president
	C	C	of Beijing Municipal Finance Bureau.
Beijing	Shanghai	Colleague	Both its chairman and vice-chairman had
Urban-Rural			working experiences in the Beijing
Daijing Tionging	Shanahai	unconnected firm	government.
Beijing Tianquao	Shanghai	unconnected firm	Not applicable
Wangfujing	Shanghai	unconnected firm	Not applicable
Store			TT T

# Figure 1 Leverage and Corruption

Figure 1.1 Mean Total Debt/Assets (The event firms and the non-event firms)



Figure 1.2 Mean Total Debt/Assets (The connected firms and the non-event firms)



# Figure 2 Debt Maturity and Corruption

Figure 2.1 Mean Long Term Debt/Total Debt (The event firms and the non-event firms)







Figure 3 Long-term leverage and Corruption

Figure 3.1 Mean Long Term Debt/Assets (The event firms and the non-event firms)



Figure 3.2 Mean Long Term Debt/Assets (The connected firms and the non-event firms)



# Figure 4 Mean Cumulative Abnormal Returns around Corruption Events

This figure plots the mean daily cumulative abnormal stock returns of the event firms, the non-event firms, and the connected firms, from 60 days before to 60 days after the corruption event day (day 0). The abnormal stock return is the stock return of a firm net of the value-weighted market return on the same day. Day 0 is the first day of public disclosure of the bureaucrat's wrongdoings. Such disclosures can be *Shuang Gui* (a detention measure that orders the bureaucrat to confess his/her crime at specific location), arrestment, or removal from current position.



Days around the Event Day

### **Table 1 The Corruption List**

This table reports 23 corruption cases that involve high level bureaucrats in China. Some names are collected from *Excerpts of Discipline Cases of the Communist Party of China* and *Villains of the Communist Party of China*; others are collected from news disclosures by the Central Commission for Discipline Inspection of CPC. The event day is the first day of the public disclosure of a bureaucrat's wrongdoings. Such disclosures can be *Shuang Gui* (a detention measure that orders the person to confess his/her crime at a specific location), arrestment, or removal from current position. The sentence day is the day when the final adjudication is announced. CPC denotes Communist Party of China. PC denotes People's Congress. PPCC denotes People's Political Consultative Congress. The bribing firms are the ones whose senior managers or directors have engaged in bribing the bureaucrats. The connected firms are the ones whose senior managers or directors are connected with the bureaucrats through current or past job affiliations, but were not involved in the corruption cases. The non-event firms are all other firms in the corrupt bureaucrats' jurisdiction.

Jurisdiction	Name	Position	Event Day	Sentence Day	Sentence	Bribing Firms	Connecte d Firms	Unconne cted Firms	Total
Beijing	Chen Xitong	CPC Secretary	19950426	19980731	16 years of imprisonment	5	4	3	12
Hainan	Xin Yejiang	Vice-PC Chairman	19961227	19980526	5 years of imprisonment	2	0	8	10
Hebei	Jiang Dianwu	Vice-PC Chairman	19971101	19981207	10 years of imprisonment	0	0	13	13
Hubei	Meng QingPing	Vice-Province Governor	19980410	19991201	10 years of imprisonment	1	4	28	33
Guangxi	Xu Binsong	Vice-Chairman of Municipality	19980523	19990827	Life imprisonment	0	1	5	6
Jiangxi	Hu Changqing	Vice-Province Governor	19990808	20000215	Death Penalty	0	2	10	12
Fujian	Shi Zhaobin	Vice-CPC Secretary	19990818	20010927	Dismissal from the service and CPC	5	3	26	34
Zhejiang	Xu Yunhong	Vice-Province Governor	19990922	20001017	10 years of imprisonment	2	3	30	35
Guangxi	Chen Kejie	Chairman of Municipality	20000111	20000731	Death Penalty	2	1	7	10
Hebei	Chen Weigao	CPC Secretary & PC Chairman	20000301	20030809	Dismissal from CPC	1	3	21	25
Guangxi	Liu Zhibin	Vice-Chairman of Municipality	20000319	20020624	15 years of imprisonment	2	2	6	10
Hebei	Cong Fukui	Vice-Province Governor	20000627	20010518	Dismissal from the service and CPC	0	2	22	24
Hubei	Li Daqiang	Vice-Province Governor	20000925	20000925	Dismissal from the service and CPC	2	0	0	2
Central Government	Xu Penghang	Vice chairman of national defense technology commission and national economics and trade commission	20001011	20001011	Dismissal from the service	1	0	0	1
Guangxi	Wang Qinglu	Vice-Chairman of PPCC	20010222	20010222	Dismissal from the service and CPC	0	1	12	13
Liaoning	Mu TuoXing	Vice-Province Governor	20010321	20011113	Death Penalty	5	6	40	51
Anhui	Wang Huizhong	Vice-Province Governor	20010407	20031229	Death Penalty	1	2	24	27
Yunnan	Li Jiating	Vice CPC Secretary & Province Governor	20010620	20030509	Death Penalty	1	4	12	17
Bank	Wang Xuebin	CEO of China Construction Bank	20020111	20031210	12 years of imprisonment	5	0	0	5
Guizhou	Liu Changgui	Vice-Province Governor	20030417	20040430	11 years of imprisonment	1	3	8	12
Guizhou	Liu Fangren	CPC Secretary & PC Chairman	20030422	20040629	Life imprisonment	1	1	10	12
Bank	Liu Jingbao	Vice-Chairman & CEO of Bank Of China (HK)	20030525	2005	Suspended Death Penalty	5	0	0	5
Xingjiang	Aman.Haji	Vice-Province Governor	20031015	N/A	N/A (Still under investigation)	1	1	23	25
Total						43	43	308	394

# Table 2Financing Policies and Other Firm Characteristics around the Corruption Events

This table reports pre-event three-year mean (Panel A) and median (Panel B) values of leverage, debt maturity, firm asset, sales, and profitability for the sample firms and several sub-samples – the event firms, the connected firms, and the non-event firms. "Change" is measured as the three-year mean (median) value of a variable after the event minus the three-year mean (median) before the event. The event firms include the bribing firms and the connected firms. The bribing firms are the ones whose senior managers or directors have engaged in bribing the bureaucrats in the corruption cases. The connected firms are the ones whose senior managers or directors have engaged in bribing the bureaucrats in the corruption cases. The connected firms are the ones whose senior managers or directors are connected firms within the bureaucrats' jurisdiction (province). Financial leverage is measured as total debt divided by total assets, or total debt plus account payable divided by total assets. Debt maturity is measured as long-term debt divided by total assets, and short-term leverage as short-term debt divided by total assets or short-term debt plus account payable. We further define long-term leverage as long-term debt divided by total assets, and short-term leverage as short-term debt divided by total assets or short-term debt plus account payable divided by total assets. The scaling factor (assets) of the leverage and debt maturity measures is lagged by one period. Assets and Sales are in million RMB where US\$1=RMB8.2. \*\*\* denotes significant at 1%; \*\* significant at 5%; and \* significant at 10%.

#### Panel A

Mean	The Eve	ent Firms	The Connected Firms		The Non-Event Firms		The Full Sample	
			0	nly				
	Pre-event	Change	Pre-event	Change	Pre-event	Change	Pre-event	Change
Total Debt / Assets	0.167	0.108***	0.145	0.148***	0.144	0.197***	0.149	0.178***
(Total Debt+Account Payable) / Assets	0.220	0.140***	0.201	0.188***	0.193	0.245***	0.199	0.223***
Long-term Debt /Assets	0.042	-0.001	0.046	-0.006	0.042	0.038***	0.042	0.030***
Short-term Debt / Assets	0.161	0.128***	0.130	0.164***	0.133	0.137***	0.139	0.135***
(Short-term Debt+Account Payable) / Assets	0.231	0.163***	0.198	0.208***	0.190	0.178***	0.199	0.174***
Long-term Debt / Total Debt	0.277	-0.086***	0.310	-0.115***	0.273	-0.028*	0.274	-0.040***
Long-term Debt / (Total Debt+Account Payable)	0.203	-0.061***	0.222	-0.084***	0.209	-0.109	0.208	-0.027***
Assets	1352.56	158.63	1140.211	124.56	1,335.08	612.08***	1338.97	520.53***
Sales	680.62	120.50	471.047	116.25	747.46	499.37***	732.54	425.82***
ROA	0.000	0.003	0.002	0.011	0.011	0.011	0.009	0.01

# Table 2 (Continued)

# Panel B

Median	The Event Firms		The Connected Firms Only		The Non-Event Firms		The Full Sample	
	Pre-event	Change	Pre-event	Change	Pre-event	Change	Pre-event	Change
Total Debt / Assets	0.130	0.105***	0.083	0.163***	0.118	0.195***	0.121	0.178***
(Total Debt+Account Payable) / Assets	0.167	0.157***	0.132	0.217***	0.178	0.224***	0.175	0.214***
Long-term Debt /Assets	0.008	0.001	0.020	-0.006	0.003	0.038***	0.004	0.023***
Short-term Debt / Assets	0.123	0.093***	0.103	0.107***	0.115	0.104***	0.118	0.101***
(Short-term Debt+Account Payable) / Assets	0.198	0.116***	0.159	0.191***	0.171	0.141***	0.176	0.138***
Long-term Debt / Total Debt	0.219	-0.134***	0.301	-0.229***	0.164	-0.108	0.178	-0.043***
Long-term Debt / (Total Debt+Account Payable)	0.131	-0.070***	0.162	-0.103***	0.096	0.006	0.105	-0.014***
Assets	925.49	54.88	908.960	257.43*	844.72	420.79***	856.69	343.45***
Sales	338.05	73.76	307.700	139.81	397.36	185.43***	385.20	142.04***
ROA	0.022	-0.005	0.026	-0.006	0.042	-0.014***	0.038	-0.01***

# Table 3Differences in the Change in Financing Pattern between the Event Firms and ControlFirms around the Corruption Events

**Panel A**. This panel reports the mean and median differences in the changes in leverage and debt maturity ratios between the event firms and the non-event firms, and between the connected firms and the non-event firms. The event firms include the bribing firms and the connected firms. The bribing firms are the ones whose senior managers or directors have engaged in bribing the bureaucrats in the corruption cases. The connected firms are the ones whose senior managers or directors are connected with the corrupt bureaucrats through current or past job affiliations, but have not been involved in the corruption cases. The non-event firms are other non-bribing, non-connected firms in the bureaucrats' jurisdiction (province). The changes in leverage and debt maturity variables are measured as three-year mean values after the corruption event minus three-year mean values before the events. T-statistics to test the significance of variables are reported in parentheses. \*\*\* denotes significant at 1%; \*\* significant at 5%; and \* significant at 10%.

Difference in the Change in	Between the eve	ent firms and the	Between the conne	ected firms and the
Leverage / Debt Maturity	non-eve	nt Firms	non-eve	nt Firms
	Mean	Median	Mean	Median
Total Debt / Assets	-0.089***	-0.091***	-0.049***	-0.032**
	(-3.80)	(-3.87)	(-2.58)	(-2.54)
(Total Debt+Account Payable) /	-0.105***	-0.067***	-0.057**	-0.007**
Assets	(-3.92)	(-4.00)	(-2.56)	(-2.44)
Long-term Debt /Assets	-0.038***	-0.037***	-0.044***	-0.026***
-	(-3.27)	(-3.52)	(-3.24)	(-3.06)
Short-term Debt / Assets	-0.009	-0.012*	0.027	0.003
	(-0.96)	(-1.66)	(-0.36)	(-0.60)
(Short-term Debt+Account	-0.015	-0.026*	0.029	0.050
Payable) / Assets	(-1.15)	(-1.89)	(-0.56)	(0.60)
Long-term Debt / Total Debt	-0.058	-0.117	-0.087	-0.211
-	(-0.61)	(-1.58)	(-0.97)	(-1.61)
Long-term Debt / (Total	-0.042	-0.076*	-0.065*	-0.109*
Debt+Account Payable)	(-1.32)	(-1.71)	(-1.75)	(-1.66)

# Table 3 (continued)

**Panel B**. This panel reports the mean and median difference in the changes in leverage and debt maturity ratios between the event firms and their matching firms, and between the connected firms and their matching firms. The event firms include the bribing firms and the connected firms. The bribing firms are the ones whose senior managers or directors have engaged in bribing the bureaucrats in the corruption cases. The connected firms are the ones whose senior managers or directors are connected with the corrupt bureaucrats through current or past job affiliations, but were not involved in the corruption cases. The matching firms are firms outside the corrupt bureaucrats' jurisdiction (applicable to provincial corruption cases) but have similar firm size (measured as book value of assets) and industry affiliation with the event firms. The changes in leverage and debt maturity variables are measured as three-year mean values after the corruption events minus three-year mean values before the events. T-statistics to test the significance of variables are reported in parentheses. \*\*\* denotes significant at 1%; \*\* significant at 5%; and \* significant at 10%.

Difference in the Change in Leverage / Debt Maturity	Between the eve matchi	ent firms and their ng firms	Between the con their mate	nected firms and hing firms
5	Mean	Median	Mean	Median
Total Debt / Assets	-0.021	-0.026*	-0.024	-0.024
	(-1.47)	(-1.71)	(-0.97)	(-1.06)
(Total Debt+Account Payable) /	-0.031	-0.035*	-0.029	0.059
Assets	(-1.62)	(-1.89)	(-0.87)	(0.86)
Long-term Debt /Assets	-0.016	-0.005	-0.033*	-0.010
-	(-1.47)	(-1.15)	(-1.90)	(-0.90)
Short-term Debt / Assets	0.072	0.014	0.047	-0.012
	(0.20)	(0.44)	(0.71)	(-0.04)
(Short-term Debt+Account	0.060	0.044	0.050	0.116
Payable) / Assets	(0.13)	(0.63)	(0.64)	(0.43)
Long-term Debt / Total Debt	-0.057	-0.059	-0.104	-0.166
-	(-1.23)	(-1.53)	(-1.59)	(-1.54)
Long-term Debt / (Total	-0.040	-0.026	-0.079*	-0.106
Debt+Account Payable)	(-1.53)	(-1.41)	(-1.90)	(-1.33)

# Table 4 Pooled Regression Results of the Effects of Rent Seeking on the Event Firms' Leverage and Debt Maturity Ratios

This table reports the ordinary least squared regression results of the impact of the corruption events on firm's leverage and debt maturity. Panel A is based on annual observations of the event firms and the non-event firms from 3 years before to 3 year after the events (excluding the event year) are included in the regressions. Panel B is based on the event firms and the matching firms. The matching firms are firms outside the corrupt bureaucrats' jurisdiction but have similar firm size (measured as book value of assets) and industry affiliation with the event firms. Clustered standard error (Peterson (2005)) estimates are employed to adjust for any effects of cross-sectional and serial correlations. The dependent variables are the various measures of leverage and debt maturity as defined in Table 2. The independent variables include the following: a dummy variable "Corrupt" equal to 1 if the firm is an event firm, and otherwise 0; a dummy variable "Post" equal to 1 if it is after the event year, and 0 if it is prior to the event year; "Lass" measured as log of assets; the interaction term of "Corrupt" and "Post", "Tangible" measured as tangible assets as a ratio of total assets; "Growth" measured as the market value of equity over book value of equity; and return on assets ("Profit"). T-statistics adjusted by clustered standard errors are in parentheses. \*\*\* denotes significant at 1%; \*\* significant at 5%; and \* significant at 10%.

Dependent	Total	(Total	Long-term	Short-term	(Short-term	Long-term	Long-term
Variable	Debt/Assets	Debt+Account	Debt/Assets	Debt/Assets	Debt+Account	Debt/Total Debt	Debt/(Total
		Payable)/Assets			Payable)/Assets		Debt+Account
							Payable)
Intercept	-0.429***	-0.688***	-0.461***	0.085	-0.249	-1.120***	-0.912***
	(-2.83)	(-4.06)	(-8.01)	(0.61)	(-1.52)	(-5.96)	(-5.87)
Corrupt	0.033***	0.038***	0.008	0.021*	0.025*	0.041	0.026
	(2.27)	(2.31)	(1.22)	(1.74)	(1.66)	(1.57)	(1.12)
Post	0.143***	0.180***	0.013***	0.140***	0.175***	-0.053***	-0.043***
	(12.42)	(14.01)	(2.64)	(13.67)	(15.12)	(-3.37)	(-3.34)
Corrupt*Post	-0.076***	-0.086***	-0.036***	-0.012	-0.006	-0.067**	-0.048*
	(-3.03)	(-2.98)	(-3.99)	(-0.46)	(-0.17)	(-2.00)	(-1.71)
Lass	0.031***	0.047***	0.023***	0.006***	0.027***	0.058***	0.046***
	(4.07)	(5.63)	(8.09)	(2.89)	(3.28)	(6.33)	(6.07)
Tangible	-0.014	-0.081	0.118***	-0.199***	-0.278***	0.493***	0.435***
	(0.42)	(-1.20)	(8.13)	(-6.90)	(-7.83)	(10.89)	(10.35)
Growth	0.083	0.086	-0.008	0.104	0.099	-0.058*	-0.039
	(0.71)	(0.61)	(-1.19)	(0.79)	(0.68)	(-1.65)	(-1.58)
Profit	-0.029	-0.024	-0.003	-0.021	-0.018	0.020	0.007
	(-1.30)	(-1.10)	(-0.94)	(-1.22)	(-1.03)	(1.36)	(1.24)
Ν	1724	1724	1724	1724	1724	1659	1716
R-squared	13.54%	17.03%	15.14%	15.64%	19.70%	16.03%	16.66%

# Panel A. Benchmarked against the Non-event Firms

# Table 4 (continued)

Dependent	Total	(Total	Long-term	Short-term	(Short-term	Long-term	Long-term
Variable	Debt/Assets	Debt+Account	Debt/Assets	Debt/Assets	Debt+Account	Debt/Total Debt	Debt/(Total
		Pavable)/Assets			Pavable)/Assets		Debt+Account
		5 )			5 /		Pavable)
Intercept	-0.609***	-0.930***	-0.338***	-0.273	-0.784***	-0.706***	-0.413***
1	(-3.16)	(-3.95)	(-4.51)	(-1.39)	(-3.24)	(-2.81)	(-2.22)
Corrupt	0.032*	0.036*	0.016**	-0.024	-0.023	0.075***	0.063***
-	(1.87)	(1.77)	(2.09)	(-0.81)	(-0.71)	(2.47)	(2.51)
Post	0.095***	0.131***	0.005	0.058*	0.100***	0.019	-0.011
	(4.48)	(5.21)	(0.71)	(1.68)	(2.67)	(0.67)	(-0.50)
Corrupt*Post	-0.036	-0.046	-0.027***	0.041	0.041	-0.095***	-0.075**
	(-1.14)	(-1.26)	(-2.48)	(0.92)	(0.82)	(-2.30)	(-2.24)
Lass	0.041***	0.061***	0.017***	0.028***	0.058***	0.037***	0.021***
	(4.33)	(5.28)	(4.70)	(2.92)	(4.84)	(2.95)	(2.27)
Tangible	-0.102	-0.188	0.082***	-0.319***	-0.458***	0.467***	0.392***
	(-1.60)	(-1.63)	(4.87)	(-4.38)	(-5.57)	(6.89)	(6.21)
Growth	0.403	0.505	0.024	0.508	0.614	-0.201	-0.158
	(1.04)	(1.12)	(0.34)	(1.31)	(1.44)	(-1.57)	(-1.29)
Profit	-1.144***	-1.164***	-0.003	-0.380***	-0.381***	0.042	0.022
	(-4.60)	(-5.57)	(-0.90)	(-7.09)	(-7.20)	(1.42)	(1.28)
Ν	754	754	754	754	754	754	754
R-squared	12.38%	16.19%	9.58%	19.65%	22.30%	15.94%	15.85%

# Panel B. Benchmarked against the Matching Firms

# Table 5 Mean Regression Results of the Effects of Rent Seeking on the Event Firms' Leverage and Debt Maturity Ratios

This panel reports the mean regression results of the impact of the corruption events on firm's leverage and debt maturity. The ordinary least squared method is employed in the regressions. For each variable included, we compute its three-year mean value before and after the event. Panel A reports regression results based on the event firms and the non-event firms. Panel B reports results based on the event firms and the matching firms. The matching firms are firms outside the corrupt bureaucrats' jurisdiction but have similar firm size (measured as book value of assets) and industry affiliation with the event firms. The dependent variables are the various measures of leverage and debt maturity as defined in Table 2. The independent variables include the following: a dummy variable "Corrupt" equal to 1 if the firm is an event firm, and otherwise 0; a dummy variable "Post" equal to 1 if it is after the event year, and 0 if it is prior to the event year; "Lass" measured as log of assets; the interaction term of "Corrupt" and "Post", tangible assets as a ratio of assets ("Tangible"); "Growth" measured as the market value of equity over book value of equity; and return on assets ("Profit"). Industry dummy variables are included in the regressions but their coefficients are not reported in this table. T-statistics are in parentheses. \*\*\* denotes significant at 1%; \*\* significant at 5%; and \* significant at 10%.

Dependent	Total	(Total	Long-term	Short-term	(Short-term	Long-term	Long-term
Variable	Debt/Assets	Debt+Account	Debt/Assets	Debt/Assets	Debt+Account	Debt/Total Debt	Debt/(Total
		Payable)/Assets			Payable)/Assets		Debt+Account
							Payable)
Intercept	-0.400***	-0.566***	-0.397***	0.099	-0.084	-0.802***	-0.705***
	(-2.30)	(-2.94)	(-5.88)	(0.60)	(-0.45)	(-3.46)	(-3.66)
Corrupt	0.048***	0.057***	0.015*	0.016	0.025	0.041	0.032
	(2.13)	(2.27)	(1.66)	(0.75)	(1.01)	(1.36)	(1.27)
Post	0.193***	0.241***	0.029***	0.142***	0.181***	-0.046***	-0.037***
	(12.79)	(14.40)	(4.94)	(9.89)	(11.07)	(-2.27)	(-2.20)
Corrupt*Post	-0.079***	-0.091***	-0.040***	-0.009	-0.016	-0.078*	-0.067*
-	(-2.41)	(-2.51)	(-3.15)	(-0.28)	(-0.44)	(-1.79)	(-1.83)
Lass	0.030***	0.043***	0.018***	0.011	0.026***	0.037***	0.031***
	(3.46)	(4.51)	(5.37)	(1.29)	(2.77)	(3.18)	(3.22)
Tangible	0.016	-0.053	0.124***	-0.178***	-0.257***	0.476***	0.439***
	(0.39)	(-1.17)	(7.74)	(-4.53)	(-5.74)	(8.61)	(9.55)
Growth	-0.006	0.026	-0.012	0.022	0.024	0.062	0.026
	(-0.04)	(0.17)	(-0.21)	(0.16)	(0.15)	(0.33)	(0.16)
Profit	-0.010	0.009	0.005	-0.027	-0.016	0.065	0.039
	(-0.29)	(0.23)	(0.35)	(-0.83)	(-0.44)	(1.41)	(1.03)
Ν	636	636	636	636	636	636	636
Adj R-squared	26.99%	33.18%	21.58%	24.38%	30.38%	20.94%	23.81%

# Panel A. Benchmarked against the Non-event Firms

# Table 5 (continued)

Dependent	Total	(Total	Long-term	Short-term	(Short-term	Long-term	Long-term
Variable	Debt/Assets	Debt+Account	Debt/Assets	Debt/Assets	Debt+Account	Debt/Total Debt	Debt/(Total
		Payable)/Assets			Payable)/Assets		Debt+Account
		5 /			5		Pavable)
Intercept	-0.774***	-1.039***	-0.325***	-0.613*	-0.955***	-0.600*	-0.338
-	(-2.84)	(-3.30)	(-3.23)	(-1.68)	(-2.38)	(-1.74)	(-1.23)
Corrupt	0.040	0.044	0.017*	-0.015	-0.009	0.082***	0.077***
-	(1.49)	(1.42)	(1.73)	(-0.41)	(-0.22)	(2.41)	(2.84)
Post	0.125***	0.166***	0.014	0.056	0.096***	-0.019	-0.004
	(4.53)	(5.21)	(1.35)	(1.53)	(2.35)	(-0.55)	(-0.13)
Corrupt*Post	-0.034	-0.044	-0.027*	-0.005	-0.015	-0.102**	-0.096***
	(-0.84)	(-0.94)	(-1.79)	(-0.09)	(-0.26)	(-2.01)	(-2.37)
Lass	0.052***	0.070***	0.016***	0.052***	0.075***	0.031*	0.016
	(3.79)	(4.43)	(3.17)	(2.86)	(3.76)	(1.80)	(1.18)
Tangible	-0.120	-0.217*	0.103***	-0.435***	-0.566***	0.464***	0.432***
	(-1.50)	(-1.79)	(4.45)	(-5.16)	(-6.10)	(5.80)	(6.82)
Growth	0.690*	0.816*	-0.036	0.912*	1.016*	-0.544	-0.494
	(1.76)	(1.80)	(-0.25)	(1.74)	(1.76)	(-1.09)	(-1.25)
Profit	-0.184***	-0.202***	-0.015	-0.762***	-0.763***	0.069	0.037
	(-3.81)	(-3.64)	(-0.84)	(-11.82)	(-10.76)	(1.13)	(0.76)
Ν	268	268	268	268	268	268	268
Adj R-squared	21.73%	27.34%	11.26%	40.53%	40.98%	18.01%	20.52%

# Panel B. Benchmarked against the Matching Firms

# Table 6 Pooled Regression Results of the Effects of Rent Seeking on the Connected Firms' Leverage and Debt Maturity Ratios

This table reports the ordinary least squared regression results of the impact of the corruption events on firm's leverage and debt maturity. Panel A is based on annual observations of the connected firms and the non-event firms from 3 years before to 3 year after the events (excluding the event year) are included in the regressions. Panel B is based on the connected firms and the matching firms. The matching firms are firms outside the corrupt bureaucrats' jurisdiction but have similar firm size (measured as book value of assets) and industry affiliation with the event firms. Clustered standard error (Peterson (2005)) estimates are employed to adjust for any effects of cross-sectional and serial correlations. The dependent variables are the various measures of leverage and debt maturity as defined in Table 2. The independent variables include the following: a dummy variable "Corrupt" equal to 1 if the firm is an event firm, and otherwise 0; a dummy variable "Post" equal to 1 if it is after the event year, and 0 if it is prior to the event year; "Lass" measured as log of assets; the interaction term of "Corrupt" and "Post", "Tangible" measured as tangible assets as a ratio of total assets; "Growth" measured as the market value of equity over book value of equity; and return on assets ("Profit"). T-statistics adjusted by clustered standard errors are in parentheses. \*\*\* denotes significant at 1%; \*\* significant at 5%; and \* significant at 10%.

Dependent Variable	Total Debt/Assets	(Total Debt+Account	Long-term	Short-term	(Short-term	Long-term	Long-term
		Payable)/Assets	Debt/Assets	Debt/Assets	Debt+Account	Debt/Total Debt	Debt/(Total
					Payable)/Assets		Debt+Account
							Payable)
Intercept	-0.282*	-0.534***	-0.441***	0.201	-0.131	-1.158***	-0.900***
	(-1.80)	(-3.06)	(-7.25)	(1.42)	(-0.78)	(-5.84)	(-5.47)
Corrupt	0.009	0.022	0.009	-0.001	0.011	0.065*	0.027
	(0.44)	(0.92)	(1.04)	(-0.07)	(0.55)	(1.93)	(0.91)
Post	0.147***	0.184***	0.013***	0.142***	0.178***	-0.054***	-0.044***
	(12.70)	(14.29)	(2.68)	(13.93)	(15.38)	(-2.45)	(-3.37)
Corrupt*Post	-0.042	-0.051	-0.042***	0.021	0.029	-0.098***	-0.063*
	(-1.22)	(-1.24)	(-3.51)	(0.60)	(0.72)	(-2.23)	(-1.66)
Lass	0.023***	0.040***	0.022***	0.000	0.021***	0.059***	0.045***
	(2.99)	(4.59)	(7.23)	(0.04)	(2.51)	(6.07)	(5.52)
Tangible	-0.004	-0.085	0.129***	-0.186***	-0.273***	0.534***	0.484***
	(-0.13)	(-1.55)	(8.35)	(-6.414)	(-7.90)	(11.48)	(11.26)
Growth	0.080	0.083	-0.009	0.103	0.098	-0.058	-0.041
	(0.70)	(0.60)	(-1.32)	(0.79)	(0.68)	(-1.57)	(-1.49)
Profit	-0.019	-0.014	-0.003	-0.013	-0.010	0.016*	0.005
	(-1.01)	(-0.77)	(-0.78)	(-0.90)	(-0.69)	(1.72)	(0.87)
Ν	1562	1562	1562	1562	1562	1498	1554
R-squared	14.06%	17.77%	15.37%	16.44%	20.92%	17.51%	18.55%

#### Panel A. Benchmarked against the Non-event Firms

Dependent	Total	(Total	Long-term	Short-term	(Short-term	Long-term	Long-term
variable	Debt/Assets	Debl+Account Deveble)/Account	Debt/Assets	Debt/Assets	Debt+Account Deveble)/Agente	Debi/ I otal Debi	Debt/(10tal)
		Payable)/Assets			Payable)/Assets		Debt+Account Payable)
Intercent	-0.203	-0 396	-0 217**	-0.036	-0.428	-0 293	0.060
intercept	(-0.65)	(-1.07)	(-2.03)	(-0.12)	(-1.23)	(-0.75)	(0.18)
Corrupt	-0.006	0.026	0.021	-0.017	-0.000	0.111***	0.078**
	(0.24)	(0.92)	(1.84)	(-0.94)	(-0.01)	(2.46)	(2.09)
Post	0.077***	0.108***	0.014	0.075*	0.105***	0.029	0.030
	(2.79)	(3.41)	(1.26)	(2.83)	(3.56)	(0.67)	(0.88)
Corrupt*Post	0.018	0.016	-0.040**	0.075*	0.087*	-0.160***	-0.122***
	(0.41)	(0.31)	(-2.56)	(1.75)	(1.76)	(-2.69)	(-2.50)
Lass	0.022	0.035*	0.011**	0.010	0.037***	0.013	-0.006
	(1.42)	(1.91)	(2.13)	(0.68)	(2.17)	(0.70)	(-0.31)
Tangible	-0.012	-0.204	0.091**	-0.224*	-0.359***	0.596***	0.517***
	(-1.31)	(-1.56)	(4.00)	(-4.37)	(-6.21)	(6.60)	(5.91)
Growth	0.279	0.373	0.045	0.375	0.478	-0.417	-0.389***
	(0.82)	(0.93)	(1.04	(1.02)	(1.21)	(-3.06)	(-3.53)
Profit	-0.199***	-0.201***	-0.004	-0.173***	-0.195***	0.167**	0.072
	(-2.70)	(-2.41)	(-0.22)	(-2.51)	(-2.19)	(2.06)	(1.23)
Ν	398	398	398	398	398	398	398
R-squared	9.96%	12.99%	8.89%	16.81	23.51%	21.46%	20.92%

# Table 6 (continued)Panel B. Benchmarked against the Matching Firms

# Table 7 Mean Regression Results of the Effects of Rent Seeking on the Connected Firms' Leverage and Debt Maturity Ratios

This panel reports the mean regression results of the impact of the corruption events on firm's leverage and debt maturity. The ordinary least squared method is employed in the regressions. For each variable included, we compute its three-year mean value before and after the event. Panel A reports regression results based on the connected firms and the non-event firms. Panel B reports results based on the connected firms and the non-event firms. Panel B reports results based on the connected firms and the matching firms. The matching firms are firms outside the corrupt bureaucrats' jurisdiction but have similar firm size (measured as book value of assets) and industry affiliation with the event firms. The dependent variables are the various measures of leverage and debt maturity as defined in Table 2. The independent variables include the following: a dummy variable "Corrupt" equal to 1 if the firm is an event firm, and otherwise 0; a dummy variable "Post" equal to 1 if it is after the event year, and 0 if it is prior to the event year; "Lass" measured as log of assets; the interaction term of "Corrupt" and "Post", tangible assets as a ratio of assets ("Tangible"); "Growth" measured as the market value of equity over book value of equity; and return on assets ("Profit"). Industry dummy variables are included in the regressions but their coefficients are not reported in this table. T-statistics are in parentheses. \*\*\* denotes significant at 1%; \*\* significant at 5%; and \* significant at 10%.

Dependent Variable	Total Debt/Assets	(Total Debt+Account	Long-term	Short-term	(Short-term	Long-term	Long-term
		Payable)/Assets	Debt/Assets	Debt/Assets	Debt+Account	Debt/Total Debt	Debt/(Total
					Payable)/Assets		Debt+Account
							Payable)
Intercept	-0.287	-0.456***	-0.389***	0.207	0.028	-0.817***	-0.700***
	(-1.56)	-2.24	(-5.40)	(1.21)	(0.14)	(-3.32)	(-3.42)
Corrupt	0.028	0.041	0.015	0.004	0.021	0.058	0.041
	(0.94)	(1.25)	(1.26)	(0.16)	(0.69)	(1.45)	(1.25)
Post	0.196***	0.244***	0.029***	0.146***	0.185***	-0.046***	-0.037***
	(12.80)	(14.36)	(4.87)	(10.28)	(11.60)	(-2.24)	(-2.17)
Corrupt*Post	-0.041	-0.044	-0.043***	0.027	0.022	-0.107*	-0.093*
	(-0.95)	(-0.93)	(-2.58)	(0.68)	(0.49)	(-1.87)	(-1.94)
Lass	0.024***	0.037***	0.017***	0.004	0.019**	0.037***	0.030***
	(2.61)	(3.68)	(4.87)	(0.50)	(2.00)	(3.01)	(2.96)
Tangible	0.038	-0.038	0.134***	-0.150***	-0.227***	0.493***	0.469***
	(0.87)	(-0.78)	(7.83)	(-3.70)	(-4.99)	(8.40)	(9.59)
Growth	0.024	0.058	-0.012	0.090	0.092	0.060	0.015
	(0.16)	(0.35)	(-0.20)	(0.65)	(0.59)	(0.30)	(0.09)
Profit	0.005	0.024	0.005	0.000	0.011	0.065	0.037
	(0.12)	(0.57)	(0.34)	(0.01)	(0.28)	(1.25)	(0.86)
Ν	579	579	579	579	579	579	579
R-squared	28.03%	34.13%	22.15%	25.00%	31.41%	21.34%	24.61%

# Panel A. Benchmarked against the Non-event Firms

Dependent	Total	(Total	Long-term	Short-term	(Short-term	Long-term	Long-term
Variable	Debt/Assets	Debt+Account	Debt/Assets	Debt/Assets	Debt+Account	Debt/Total Debt	Debt/(Total
		Payable)/Assets			Payable)/Assets		Debt+Account
							Payable)
Intercept	-0.797*	-0.964*	-0.130	-0.418	-0.586	0.017	0.316
	(-1.69)	(-1.81)	(-0.76)	(-0.97)	(-1.21)	(0.03)	(0.66)
Corrupt	0.021	0.041	0.024*	-0.022	0.000	0.122***	0.104***
	(0.56)	(0.95)	(1.77)	(-0.65)	(0.01)	(2.51)	(2.69)
Post	0.134***	0.175***	0.026*	0.088***	0.115***	0.020	0.032
	(3.44)	(3.95)	(1.85)	(2.47)	(2.88)	(0.40)	(0.81)
Corrupt*Post	0.007	0.012	-0.034*	0.059	0.064	-0.147**	-0.137***
	(0.12)	(0.19)	(-1.67)	(1.16)	(1.11)	(-2.05)	(-2.40)
Lass	0.057***	0.070***	0.005	0.044**	0.057***	-0.001	-0.016
	(2.39)	(2.55)	(0.58)	(2.00)	(2.29)	(-0.02)	(-0.66)
Tangible	-0.210	-0.284	0.147***	-0.438***	-0.511***	0.578***	0.565***
	(-1.57)	(-1.58)	(4.18)	(-4.95)	(-5.13)	(4.66)	(5.74)
Growth	0.530	0.635	-0.184	0.775**	0.838*	-1.022*	-1.047***
	(1.24)	(1.31)	(-1.18)	(1.99)	(1.91)	(-1.87)	(-2.41)
Profit	-0.083	-0.045	0.035	-0.203**	-0.205*	0.235*	0.157
	(-0.75)	(-0.36)	(0.86)	(-2.01)	(-1.80)	(1.66)	(1.40)
Ν	141	141	141	141	141	141	141
R-squared	21.97%	27.88%	13.75%	29.77%	34.59%	20.61%	27.39%

# Table 7 (continued)Panel B. Benchmarked against the Matching Firms

# Table 8Regression Results of the Effects of Rent Seeking on the Non-event Firms' Leverage and Debt Maturity Ratios

This table reports regression results of the impact of the corruption events on firm's leverage and debt maturity. The sample is composed of the non-event firms and their matching firms. The matching firms are firms outside the corrupt bureaucrats' jurisdiction but have similar firm size (measured as book value of assets) and industry affiliation with the event firms. Panel A reports the results of the ordinary least squared regressions on annual observations from 3 years before to 3 year after the events (excluding the event year). In this panel clustered standard error (Peterson (2005)) estimates are employed to adjust for any effects of cross-sectional and serial correlations. Panel B reports the results of the ordinary least squared regressions on pre- and post-event three-year mean variable values. The dependent variables are the various measures of leverage and debt maturity as defined in Table 2. The independent variables include the following: a dummy variable "Corrupt" equal to 1 if the firm is an event firm, and otherwise 0; a dummy variable "Post" equal to 1 if it is after the event year, and 0 if it is prior to the event year; "Lass" measured as log of assets; the interaction term of "Corrupt" and "Post", "Tangible" measured as tangible assets as a ratio of total assets; "Growth" measured as the market value of equity over book value of equity; and return on assets ("Profit"). In the mean regressions, industry dummies are included as additional control variables but their results are omitted. T-statistics adjusted by clustered standard errors are in parentheses. \*\*\* denotes significant at 1%; \*\* significant at 5%; and \* significant at 10%.

Dependent	Total	(Total	Long-term	Short-term	(Short-term	Long-term	Long-term
Variable	Debt/Assets	Debt+Account	Debt/Assets	Debt/Assets	Debt+Account	Debt/Total Debt	Debt/(Total
		Payable)/Assets			Payable)/Assets		Debt+Account
							Payable)
Intercept	-0.497***	-0.793***	-0.490***	-0.068	-0.464***	-1.275***	-1.040***
	(-4.52)	(-6.41)	(-10.78)	(-0.63)	(-3.42)	(-8.26)	(-8.83)
Corrupt	0.005	0.005	0.009*	-0.008	-0.006	0.030*	0.026
	(0.55)	(0.54)	(2.02)	(-0.97)	(-0.62)	(1.75)	(1.82)
Post	0.132***	0.161***	0.011***	0.126***	0.155***	-0.029*	-0.027**
	(10.68)	(11.43)	(2.39)	(9.54)	(10.16)	(-1.82)	(-2.04)
Corrupt*Post	0.009	0.017	0.001	0.010	0.015	-0.027	-0.020
	(0.54)	(0.91)	(0.15)	(0.60)	(0.77)	(-1.23)	(-1.11)
Lass	0.034***	0.053***	0.024***	0.015***	0.038	0.063***	0.050***
	(6.31)	(8.69)	(10.51)	(2.82)	(5.85)	(8.32)	(8.62)
Tangible	-0.046	-0.141	0.142***	-0.264***	-0.371***	0.551***	0.498***
-	(-1.48)	(-1.56)	(11.90)	(-10.85)	(-12.53)	(14.28)	(14.84)
Growth	0.051	0.045	-0.009*	0.067	0.060	-0.041*	-0.025*
	(0.60)	(0.45)	(-1.94)	(0.69)	(0.55)	(-1.84)	(-1.68)
Profit	-0.053*	-0.053*	-0.008	-0.051*	-0.053*	0.013	0.001
	(-1.86)	(-1.75)	(-0.39)	(-1.83)	(-1.78)	(1.11)	(0.08)
Ν	2877	2877	2877	2877	2877	2756	2862
R-squared	15.55%	19.70%	18.16%	15.15%	19.30%	18.24%	20.04%

# Panel A. Pooled Regressions

# Table 8 (Continued)

# Panel B. Mean Regressions

Dependent	Total	(Total	Long-term	Short-term	(Short-term	Long-term	Long-term
Variable	Debt/Assets	Debt+Account	Debt/Assets	Debt/Assets	Debt+Account	Debt/Total Debt	Debt/(Total
	20001100000	Pavable)/Assets	20001100000	20001100000	Pavable)/Assets	2000 10001 2000	Debt+Account
		1 ay acto), 1 155005			1 w/w010)/1100000		Pavable)
Intercept	-0.358***	-0.549***	-0.385***	0.011	-0.236	-1.006***	-0.789***
1	(-2.68)	(-3.67)	(-7.64)	(0.08)	(-1.48)	(-5.58)	(-5.35)
Corrupt	-0.006	-0.006	0.005	-0.004	-0.004	0.025	0.024
1	(-0.41)	(-0.39)	(0.86)	(-0.31)	(-0.25)	(1.32)	(1.56)
Post	0.163***	0.197***	0.021***	0.130***	0.160***	-0.035*	-0.030*
	(11.00)	(11.87)	(3.79)	(8.46)	(9.08)	(-1.73)	(-1.82)
Corrupt*Post	0.027	0.039	0.008	0.007	0.014	-0.016	-0.010
-	(1.33)	(1.71)	(0.98)	(0.34)	(0.58)	(-0.59)	(-0.44)
Lass	0.028***	0.043***	0.017***	0.016***	0.034***	0.045***	0.034***
	(4.27)	(5.76)	(6.82)	(2.31)	(4.30)	(5.10)	(4.67)
Tangible	-0.003	-0.094	0.143***	-0.222***	-0.328***	0.525***	0.488***
-	(-0.10)	(-1.52)	(11.41)	(-6.48)	(-8.33)	(11.73)	(13.34)
Growth	-0.295***	-0.305*	-0.039	-0.230	-0.230	0.066	-0.006
	(-2.10)	(-1.93)	(-0.73)	(-1.58)	(-1.37)	(0.35)	(-0.04)
Profit	-0.101***	-0.096***	-0.003	-0.108***	-0.101***	0.059	0.026
	(-3.10)	(-2.62)	(-0.28)	(-3.22)	(-2.60)	(1.35)	(0.73
Ν	1049	1049	1049	1049	1049	1049	1049
R-squared	27.43%	32.07%	22.88%	22.68%	27.02%	20.04%	22.61%

# Table 9 Changes in Leverage and Stock Market Reactions around the Corruption Events

This table reports mean and median cumulative abnormal returns (CARs) over various event windows for three sub-samples (the bottom tercile, middle tercile and top tercile). Difference in the mean CAR between the top tercile and bottom tercile are also reported. CARs are estimated by cumulating daily abnormal stock returns within various event windows ranging from 60 days before to 60 days after the corruption event day. The event day is the first day of public disclosure of the bureaucrat's wrongdoings. The abnormal stock return is the stock return of a firm net of the value-weighted market return on the same day. In Panel A, the terciles are ranked by change in total leverage measured as three-year mean leverage (debt to assets ratio) after the corruption event minus three-year mean leverage before the event. In Panel B, the terciles are ranked by change in long-term leverage measured as three-year mean long-term debt to assets ratio after the corruption event minus three-year mean long-term debt to assets ratio after the corruption event minus three-year mean long-term debt to assets ratio after the corruption event minus three-year mean long-term debt to assets ratio after the corruption event minus three-year mean long-term debt to assets ratio after the corruption event minus three-year mean long-term debt to assets ratio after the corruption event minus three-year mean long-term debt to assets ratio after the corruption event minus three-year mean long-term debt to assets ratio after the corruption event minus three-year mean long-term debt to assets ratio after the corruption event minus three-year mean long-term debt to assets ratio after the corruption event minus three-year mean long-term debt to assets ratio after the corruption event minus three-year mean long-term debt to assets ratio after the corruption event minus three-year mean long-term debt to assets ratio before the event. \*\*\* denotes significant at 1%; \*\* significant at 5%; and \* significant at 10%.

		Bottom Tercile	Middle Tercile	Top Tercile	Difference between Top and Bottom Tercile
Change in Total	Mean	-0.040	0.165	0.414	0.455***
Leverage	Median	-0.002	0.173	0.386	0.388***
CAR (-60,60)	Mean	-0.041	-0.051	0.048	0.089***
	Median	0.001	-0.051	0.015	0.015**
CAR (-40,40)	Mean	-0.051	-0.046	0.050	0.101***
	Median	-0.016	-0.054	0.042	0.058***
CAR (-20,20)	Mean	-0.033	-0.024	0.017	0.050***
	Median	-0.019	-0.041	0.004	0.023**
CAR (-10,10)	Mean	-0.031	-0.006	0.011	0.042***
	Median	-0.015	-0.015	-0.001	0.014**
CAR (-60,0)	Mean	-0.013	0.008	0.010	0.023
	Median	-0.002	0.006	0.017	0.019
CAR (-40,0)	Mean	-0.013	0.002	0.019	0.032*
	Median	-0.027	-0.016	0.012	0.039**
CAR (-20,0)	Mean	-0.010	0.010	0.010	0.020*
	Median	-0.006	-0.003	-0.005	0.001
CAR (-10,0)	Mean	-0.014	0.009	-0.002	0.012
	Median	-0.012	0.001	-0.009	0.003
CAR (-5,5)	Mean	-0.019	0.000	0.009	0.028***
	Median	-0.013	0.003	-0.001	0.012**
CAR (-1,1)	Mean	0.001	0.009	0.003	0.001
	Median	-0.001	0.004	0.006	0.007
# of firms in each tercile		113	113	114	
% of the event firms		35.4%	14.3%	12.3%	-23.1%***

# Panel A. Total Leverage Changes and CAR

# Table 9 (Continued)

		Bottom Tercile	Middle Tercile	Top Tercile	Difference between Top and Bottom Tercile
Change in Long-term	Mean	-0.052	0.015	0.118	0.170***
Leverage	Madian	0.021	0.007	0.100	0 121***
CAD(0)	Maan	-0.031	0.007	0.100	0.131***
CAR (-00,00)	Median	-0.018	-0.037	0.012	0.031
CAD (40.40)	Median	0.007	-0.030	-0.007	-0.014
CAR (-40,40)	Mean	-0.028	-0.045	0.025	0.053**
	Median	-0.009	-0.052	0.020	0.029*
CAR (-20,20)	Mean	-0.020	-0.019	-0.002	0.018
	Median	-0.021	-0.034	-0.004	0.017
CAR (-10,10)	Mean	-0.022	-0.018	0.013	0.036***
	Median	-0.012	-0.028	0.005	0.017**
CAR (-60,0)	Mean	0.001	-0.007	0.011	0.010
	Median	0.013	-0.006	0.003	-0.010
CAR (-40,0)	Mean	-0.003	-0.011	0.023	0.025
	Median	-0.012	-0.019	0.007	0.019
CAR (-20,0)	Mean	0.001	-0.007	0.016	0.015
	Median	0.000	-0.014	0.002	0.002
CAR (-10,0)	Mean	-0.012	-0.003	0.008	0.019***
	Median	-0.008	-0.007	0.001	0.009*
CAR (-5,5)	Mean	-0.008	-0.010	0.008	0.017
	Median	-0.012	-0.003	-0.001	0.011
CAR (-1,1)	Mean	0.001	0.003	0.003	0.002
	Median	0.003	0.000	-0.003	-0.006
# of firms in each		113	113	114	
tercile		-	-		
% of the event firms		29.2%	23.7%	11.3%	-17.8%***

# Panel B. Long-term Leverage Changes and CAR

# Table 10 Regression Results of the Effects of Firm Leverage on CARs

### Panel A. Effects of Changes in Total Leverage

The events are the initial public announcements of the corruption cases. The ordinary least squared method is employed in the regressions. The dependent variable is the cumulative abnormal returns (CARs) estimated by cumulating daily abnormal stock returns within various event windows ranging from 60 days before to 60 days after the corruption event day. The event day is the first day of public disclosure of the bureaucrat's wrongdoings. The abnormal stock return is the stock return of a firm net of the value-weighted market return on the same day. The independent variables include the following. "Chglev" is change in leverage (total debt to total assets ratio), measured as three-year mean leverage after the corruption event minus three-year mean leverage before the events. "Chglt" is change in long-term leverage measured as three-year mean long-term debt to assets ratio after the corruption event minus three-year mean long-term debt ratio before the events. "Corrupt" equals to one if the firm is an event firm, and zero otherwise. "Lass" is log of assets measured at the year end prior to the event year. Industry dummy variables are included in the regressions but their estimated coefficients are not reported. T-statistics are in the parentheses. \*\*\* denotes significant at 1%; \*\* significant at 5%; and \* significant at 10%.

	Intercept	Chglev	R <sup>2</sup>	Intercept	Chglev	Corrupt	$\mathbb{R}^2$	Intercept	Chglev	Corrupt	Lass	$\mathbb{R}^2$	Ν
CAR (-60,60)	-0.038	0.202***	6.99%	-0.024	0.185***	-0.053*	8.10%	0.428	0.153***	-0.023	-0.022	7.07%	290
	(-1.001)	(3.638)		(-0.611)	(3.305)	(-1.849)		(1.357)	(2.725)	(-0.760)	(-1.451)		
CAR (-40,40)	-0.032	0.196***	7.11%	-0.017	0.178***	-0.055**	8.52%	0.404	0.146***	-0.024	-0.021	7.72%	290
	(-0.927)	(3.864)		(-0.491)	(3.497)	(-2.088)		(1.423)	(2.883)	(-0.903)	(-1.502)		
CAR (-20,20)	-0.051	0.097***	4.31%	-0.047	0.092***	-0.014	4.49%	-0.151	0.085***	-0.001	0.005	3.87%	290
	(-2.008)	(2.603)		(-1.818)	(2.448)	(-0.730)		(-0.698)	(2.188)	(-0.057)	(0.484)		
CAR (-10,10)	-0.068	0.102***	6.22%	-0.064	0.097***	-0.017	6.59%	-0.319	0.096***	-0.002	0.013	6.67%	290
	(-3.282)	(3.370)		(-3.001)	(3.154)	(-1.059)		(-1.857)	(3.129)	(-0.115)	(1.496)		
CAR (-60,0)	0.018	0.059	4.12%	0.038	0.036	-0.075***	7.58%	0.570	-0.001	-0.048**	-0.026***	7.10%	290
	(0.574)	(1.319)		(1.228)	(0.796)	(-3.250)		(2.276)	(-0.012)	(-2.044)	(-2.145)		
CAR (-40,0)	0.013	0.065*	2.31%	0.027	0.049	-0.051***	4.81%	0.438	0.019	-0.030	-0.020**	3.96%	290
	(0.539)	(1.796)		(1.085)	(1.350)	(-2.727)		(2.182)	(0.535)	(-1.578)	(-2.066)		
CAR (-20,0)	0.005	0.033	1.90%	0.010	0.027	-0.021*	2.84%	0.049	0.018	-0.014	-0.002	1.53%	290
	(0.273)	(1.375)		(0.602)	(1.093)	(-1.651)		(0.347)	(0.697)	(-1.032)	(-0.274)		
CAR (-10,0)	-0.027	0.041***	3.91%	-0.024	0.037**	-0.013	4.56%	-0.127	0.037**	-0.005	0.005	4.24%	290
	(-2.224)	(2.293)		(-1.902)	(2.041)	(-1.385)		(-1.246)	(2.037)	(-0.474)	(1.014)		
CAR (-5,5)	-0.034	0.054***	4.75%	-0.030	0.050***	-0.014	5.23%	-0.196	0.047**	-0.004	0.008	4.68%	290
	(-2.186)	(2.380)		(-1.899)	(2.155)	(-1.202)		(-1.493)	(2.022)	(-0.289)	(1.272)		
CAR (-1,1)	-0.004	-0.011	3.16%	-0.001	-0.015	-0.012***	4.76%	-0.012	-0.015	-0.009	0.001	4.06%	290
	(-0.555)	(-1.111)		(-0.108)	(-1.456)	(-2.173)		(-0.200)	(-1.424)	(-1.621)	(0.182)		

# Table 10 (Continued)

# Panel B. Effects of Changes in Long-term Leverage

	Intercept	Chglt	$R^2$	Intercept	Chglt	Corrupt	$R^2$	Intercept	Chglt	Corrupt	Lass	$R^2$	Ν
CAR (-60,60)	0.021	0.170***	3.82%	0.038	0.116*	-0.145***	8.61%	0.630**	0.103*	-0.091***	-0.030*	7.32%	290
	(0.538)	(2.105)		(0.987)	(1.769)	(-3.630)		(2.008)	(1.712)	(-2.280)	(-1.917)		
CAR (-40,40)	0.008	0.236*	3.54%	0.025	0.184	-0.140***	8.97%	0.540*	0.166	-0.086***	-0.026*	7.59%	290
	(0.238)	(1.693)		(0.711)	(1.351)	(-3.868)		(1.919)	(1.282)	(-2.395)	(-1.862)		
CAR (-20,20)	-0.033	0.074*	1.97%	-0.025	0.050**	-0.066***	4.26%	0.068	0.044	-0.039	-0.005	2.97%	290
	(-1.266)	(1.727)		(-0.972)	(1.990)	(-2.449)		(0.314)	(1.444)	(-1.396)	(-0.446)		
CAR (-10,10)	-0.035*	0.160**	3.46%	-0.030	0.145*	-0.041*	4.81%	-0.086	0.140*	-0.011	0.003	3.62%	290
	(-1.689)	(1.969)		(-1.456)	(1.784)	(-1.887)		(-0.513)	(1.808)	(-0.509)	(0.317)		
CAR (-60,0)	0.049	0.063	4.27%	0.066***	0.010	-0.143***	11.64%	0.504**	-0.006	-0.104***	-0.022*	9.47%	290
	(1.568)	(0.515)		(2.172)	(0.082)	(-4.575)		(2.044)	(-0.057)	(-3.293)	(-1.805)		
CAR (-40,0)	0.031	0.119	2.03%	0.046*	0.073	-0.124***	11.03%	0.331*	0.060	-0.096***	-0.014	8.15%	290
	(1.251)	(1.230)		(1.911)	(0.786)	(-5.039)		(1.688)	(0.667)	(-3.818)	(-1.479)		
CAR (-20,0)	0.008	0.045	1.18%	0.015	0.023	-0.060***	5.79%	0.078	0.019	-0.047***	-0.003	3.68%	290
	(0.497)	(0.684)		(0.929)	(0.351)	(-3.506)		(0.555)	(0.300)	(-2.607)	(-0.458)		
CAR (-10,0)	-0.019	0.068*	2.61%	-0.014	0.052*	-0.041***	6.57%	-0.050	0.052*	-0.025**	0.002	4.17%	290
	(-1.538)	(1.648)		(-1.160)	(1.717)	(-3.260)		(-0.508)	(1.649)	(-1.959)	(0.351)		
CAR (-5,5)	-0.020	0.108*	3.81%	-0.016	0.096*	-0.032**	5.27%	-0.097	0.095*	-0.016	0.004	3.95%	290
	(-1.228)	(1.737)		(-0.988)	(1.645)	(-1.968)		(-0.743)	(1.695)	(-0.988)	(0.614)		
CAR (-1,1)	-0.002	0.007	2.34%	-0.001	0.003	-0.010	3.13%	-0.037	0.004	-0.007	0.002	2.65%	290
	(-0.280)	(1.263)		(-0.105)	(0.121)	(-1.432)		(-0.655)	(0.157)	(-0.971)	(0.640)		