Is the Chinese Anti-Corruption Campaign Effective?

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Chinese firms with characteristics commonly associated with corporate self-dealing are more likely to have executives investigated by the anti-corruption campaign. University affiliations with the top current leaders are associated with a reduced probability of investigation, but general political affiliations are associated with more investigations. We then assess the campaign's effect on Chinese firms more broadly, and find that with the exception of entertainment expenditure there has been little overall decrease in measures of potential corporate self-dealing. Overall, our findings suggest that the campaign is targeting corrupt managers, could contain a political component, and has yet to change Chinese corporate culture.

Academic evidence has increasingly linked corruption as a major impediment to economic growth.[1] Despite this strong academic evidence, it is rare to see countries with high levels of corruption making sweeping changes to reduce political and corporate thievery. Nevertheless, in December 2012, the new top leadership in China embarked on an Eight-point Regulation that purports to widely reduce political, military, and business corruption. The surprisingly far-reaching campaign that has already investigated more than 200,000 people raises three primary questions: Is the corporate campaign actually targeting individuals from more corrupt firms? Does the campaign contain political favoritism? Is the campaign effective at reducing corporate corruption?

China ranked 100 of 175 in the world on the Corruption Perception Index as of 2014, despite being the world's second largest and one of the fastest growing economies.[2] Pei (2007) estimates the direct costs to corruption at three percent of GDP per year. Yet, there is good reason to think that the indirect costs of corruption are likely much greater than the direct costs. Due to an excessive focus on rent-seeking, Murphy, Shleifer, and Vishny (1993) argue that corruption results in a low output equilibrium with low innovation, and Shleifer and Vishny (1993) argue that the secrecy of corruption leads to substantial distortionary incentives. With growth in China lagging considerably behind its past trajectory, the Eight-point Regulation is quite timely. The campaign provides a unique laboratory to evaluate an effort to reduce corruption because it is both widespread and in the world's second-largest economy where firms are commonly thought to exhibit substantial fraud [Chen, Firth, Gao, and Rui (2006), Chen, Li, Su, and Sun (2011)], self-dealing [Jiang, Lee, and Yue (2010)] and earnings management related to political corruption [Fan, Guan, Li, and Yang (2014)].

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[1] Some theories [Leff 1964, Lui (1985), and Acemoglu and Verdier (2000)] argue that corruption is not necessarily problematic since bribery can be thought of as a tax. Shleifer and Vishny (1993) argue that this is incorrect since the distortionary effects associated with the uncertainty of bribery payments are more harmful than taxation. Empirical studies have largely found that corruption is harmful to economic growth due to channels such as a reduction in innovation and foreign direct investment [Mauro (1995), Kaufman and Wei (2001), Wei (2001), Reinikka and Svensson (2004)]. For a more detailed discussion of corruption and its effects, see Bardhan (1997) and Svensson (2003).

[2] The annual Corruption Perception Index published by Transparency International can be found at http://www.transparency.org/cpi2014.

By carefully searching a broad set of sources including databases of managerial turnovers of Chinese listed firms, disclosure by the Chinese Communist Party, corporate announcements, and news articles from over 300 Chinese financial newspapers, we construct a sample of Chinese listed firms where the CEOs or other top executives were investigated during the anti-corruption campaign. In all we reach a sample from December 2012 to December 2015 of 150 listed firms, 130 (or 87%) of which are state-owned-enterprises (SOEs). The sample firms have a total market capitalization of RMB 5.29 trillion (USD 805 billion), and account for 5.6 percent of China's listed firms in terms of number, and 18.1 percent in terms of market capitalization. The major listed charges against the executives are receiving bribes (82), illegally benefiting family members (29), embezzling funds (26), bribing others (21), and unspecified offenses (31).[3]

We first examine whether the campaign is targeting executives from corrupt firms. We use a matched-sample approach and a host of measures that indicate potential self-dealing and other dubious behavior. Our measures are all noisy indicators, but we believe that all have potential to shed light on activities of questionable nature, and most have been linked to self-dealing and accounting manipulation in previous literature (as we will detail). The measures of potential corruption are grouped into five categories: related-party transactions; regulation breaches and entertainment expenditure; profitability; corruption-related postings; and accounting manipulations. To account for illegal or unethical behavior to potentially exploit shareholders, we follow the literature and use three measures of related-party transactions, which are related-party sales, related-party loans, and other receivables from the parent firm. We also examine a firm's regulation breaches identified by China's Security Regulatory Commission and business entertainment expenditure. Since corruption leads to heightened costs and inefficient operation, we also examine two measures of profitability, which are growth of sales minus growth of net income, and profit margin. We measure investors' discussions

[3] Note that these corrupt behaviors are not mutually exclusive.

about corruption in a firm using posts on a popular Chinese online investor forum. For potential accounting manipulation, we first examine earnings discontinuity around zero, as a dramatic decrease in the frequency of small positive earnings to small negative earnings can indicate manipulation. We also examine the absolute value of discretionary accruals, a widely used measure of earnings management.[4]

To control for firm-level characteristics, for each of the 150 sample firms we identify a matched firm in the same industry, with the same SOE status, similar market capitalization and book-to-market ratio. We examine the corruption measures for sample firms before corruption investigations, and find that sample firms generally have higher measures of corruption than their matched firms. In a probit regression, we find that related-party sales, related-party loans, sales growth minus income growth, and corruption related posts are all positive and significantly related to the probability of an executive being investigated for corruption.

We do not know the underlying political motivations that lead to the investigations of corrupt firms. It may be that the motivation is purely corruption focused, or it could be that the subjects of political targeting are more likely to be corrupt. We examine if political connections are also associated with the probability of being investigated. We find that firms with general government connections, as identified by managers' past government working experience, are more likely to be investigated. This result is consistent with the campaign targeting firms benefiting from their political connections. We further examine three measures of political connection with the current top national leaders through workplace relation, hometown relation, and university affiliation. We find that university

[4] A number of papers, such as Dass, Nanda, and Xiao (2014), Fan, Guan, Li, and Yang (2014), and Huang (2016), find strong evidence with both U.S. and China data that corrupt firms engage in more accounting manipulation.

affiliations, where company executives attended the same universities as national leaders, are associated with a decreased probability of investigation.[5]

Overall, the evidence suggests that the anti-corruption campaign does appear to target corruption, in that the subjects of investigation do appear to be engaged in more questionable activities, but the effect of university affiliation suggests that the targeting could involve favoritism. We note that our empirical tests are mainly descriptive and not tests for causality; Like with most empirical exercises there may be omitted variables which can link our findings.

Next, we turn to investigating the broader question of whether the reform is having spillover effects on firm culture by examining the corruption measures for all Chinese listed firms over time. Out of our ten firm-level measures of corruption, the only one that shows a large improvement or drop in 2013-2014 compared to 2011 is business entertainment expenditure.[6] We also divide all firms into subsamples of SOEs and non-SOEs to see if the effects of the campaign have been more effective in a particular group. Overall, only business and entertainment expenditure exhibits a consistent downward trend. It is possible, that the other measures are poor proxies for questionable firm behavior, but these measures have strong intuitive underpinnings and empirical support from prior literature. Additionally, many of these measures show that the firms investigated for corruption had larger corruption indicators despite a relatively small sample size.

To the extent that our measures are affected by macroeconomic conditions instead of just corruption, we conduct benchmarking analysis using Hong Kong firms. The economies of Mainland China and Hong Kong are closely linked, yet there is no anti-corruption campaign in Hong Kong

[5] The university affiliation effect is driven by the two most prestigious universities in China: Tsinghua University and Peking University. It is also possible that affiliated managers from these schools are less corrupt than their peers because their graduates may have better self-discipline with their greater career potentials in mind.

[6] Discretionary accruals also decreased but the drop actually occurred in 2012 when the campaign was just getting started, and accruals experienced no subsequent improvement after 2012.

during this period. A difference-in-difference approach for comparing Chinese listed firms to their matched Hong Kong counterparts shows little improvement for Chinese firms.

In addition to the firm-level measures, we further examine the earnings discontinuity around zero for all Chinese listed firms. The distribution of earnings around zero has a strong kink in the pre-campaign time period, where there is a dramatic decrease in number of firms with small positive earnings to those with small negative earnings. Yet from 2013-2014, the patterns are extremely similar with few firms exhibiting small negative earnings, and a plethora of firms with small positive earnings. Therefore, earnings manipulation appears to be rampant in China with little improvement. We also examine if the anti-corruption campaign improves the information environment of Chinese financial markets and reduces trading on inside information using volatility ratios previously constructed in the literature. Earnings announcements do not become more informative in 2013-2014 compared to their relative informativeness prior to the reform.

Overall, other than a drop in the highly visible business and entertainment expenditure, we find little evidence that there has been a decrease in potential corporate corruption indicators. The targeting of more corrupt firms appears to be a step in the right direction, but it has not, at least yet, led to changes in indicators of transparency and accounting manipulation. Svensson (2003) argues that most anti-corruption campaigns are ineffective because they rely on weak and corrupt legal and financial institutions. The arguments of Magnus (2015) seem persuasive that improvements in the Chinese legal, institutional, press freedom, and civil environment may be needed to enact a more comprehensive and effective reform.

While there is a large literature examining corruption in international markets, there is relatively little academic research examining the anti-corruption campaign in China. Lin, Morck, Yeung, and Zhao (2016) examine the market's response across firms to the announcement of the Eight-point Regulation on December 4, 2012. They find that the overall market reaction was quite positive, and

especially so for SOEs and non-SOEs located in developed provinces or with lower business and entertainment expenditures. While their study provides an in-depth characterization of market expectation of the policy, our analysis focuses on the observed effects of the policy during the anti-corruption campaign. Qian and Wen (2015) find that jewelry imports decreased by 55% percent over the first seven months after the anti-corruption campaign, which is consistent with our firm-level findings.[7] Ang, Bai, and Zhou (2015) find that corruption as measured by investigations of government officials in a province is reflected in local bond spreads.

More broadly, there is growing literature examining corruption globally [Mauro (1995)], in certain emerging economies [e.g., Fisman and Svensson (2007)], and even considerable research on corruption in China.[8] We hope to see additional research focusing on the effectiveness of corruption reduction efforts.

1. The Anti-Corruption Campaign Background

Corruption in China has grown significantly since economic reforms in the early 1980s. Over the last four decades, the corruption culture has widely spread to China's political, military, and business environment. In 2014, China ranked 100 of 175 in the world on the Corruption Perception Index, indicating more corruption than the majority of countries in the world. The knabbing of top U.S. firms for bribery in China by U.S. regulators also gives glimses into the extent of the bribery problem using U.S. standards. For example, Avon, the cosmetics company, admitted guilt and paid $135 million on December 17, 2014 to settle U.S. Department of Justice charges for bribing Chinese government

[7] Qian and Wen (2015) also document that, in contrast to the dramatic drop in import of the luxury goods that are easily observed by the public, there is no effect on goods that can be consumed away from public view.

[8] For example, Chen, Firth, Gao, and Rui (2006) and Chen, Li, Su, and Sun (2011) find a positive relationship between board and ownership concentration with fraud and political connections in China. Cheung, Rau, and Stouraitis (2006) and Jiang, Lee, and Yue (2010) examine tunneling through inter-company transactions and loans in Hong Kong and China. Liu and Lu (2007) link earnings management to tunneling.

officials. J.P. Morgan was reported to be under investigation by U.S. officials for improperly influencing top Chinese officials by hiring their children.[9]

On November 15, 2012, Xi Jinping took China's leadership and became General Secretary of the Communist Party of China (CPC) during the 18th National Congress. Soon after taking office, Xi emphasized his determination to crack down on corruption, targeting both "tigers and flies". On December 4, 2012, the Communist Party of China announced the "Eight-point Regulation" which provides clear guidance for the party and government officials to eliminate corruption. Xi's leadership and the issuance of the "Eight-point Regulation" are generally regarded as the start of the anti-corruption campaign in China.

Although preivous Chinese leaders had repeatedly criticized the severe corruption problems and made anti-corruption efforts, their effects were relatively small, and top government officials were rarely touched. Xi, the son of a top communist veteran, emphasized that corruption has become a big threat to the survivial of Chinese Communist Party, and put this as perhaps his central platform. The intensive and extensive anti-corruption campaign has been "more prolonged and far-reaching than anyone anticipated" [The Guardian (2015)].

Since its start, the anti-corruption campaign has investigated and removed four national leaders and hundreds of high-ranking government officials and military officers. More than 200,000 people have been investigated during the anti-corruption campaign, with a 99% rate of conviction [Forbes (2016)]. The campaign has also targeted corrupt managers in China's corporate world. For example, Lin Song, former Board Chairman of the state-owned enterprise China Resources and one of the "50 Most Influential Business Leaders" according to *Fortune*, was indicted on bribery and embezzlement in 2014.

[9] Avon admitted spending a total of $8 million in cash and gifts to Chinese government officials during 2004-2008. See http://fortune.com/2014/12/17/avon-bribery-probe-settlement/. For U.S. investigation of J.P. Morgan, see http://www.wsj.com/articles/j-p-morgan-was-aware-of-overseas-hiring-concerns-before-u-s-probe-1413998056.

There is substantial controversy surrounding the genuineness of the campaign and whether it is a consolidation of power or a cleansing of political lineage [Economist (2014)]. Is it mainly for political reasons that certain people who posed a threat to the current power base were humiliated, removed, and jailed? Others argue that the campaign is not a short-term political one as has been used in the past, but is primarily focusing on those engaged in corruption [Li, Cheng, and McElveen(2014), Magnus (2015)]. Additionally, one wonders if the anti-corruption campaign caused positive changes to Chinese corporate world and corporate culture. Academic research is needed to address these questions of both academic and widespread practical importance.

2. Data, Summary Statistics, and Measures of Potential Corruption

2.1 Sample Selection

There are two parts of analysis and sample construction. First, we examine a sample of firms with corrupt managers investigated during the anti-corruption campaign (henceforth "sample firms" or "event firms"). Second, we examine corruption measures across all Chinese listed firms to study the impact of anti-corruption campaign on the Chinese corporate world.

The sample firms include the listed firms in China whose top managers were investigated during the anti-corruption campaign for corrupt behaviors. A firm should satisfy three conditions for sample inclusion. First, the firm is listed on either Shanghai Stock Exchange or Shenzhen Stock Exchange. Second, its CEO or other top executives who are also internal directors were investigated for corrupt behaviors.[10] Third, the corruption investigations took place during the anti-corruption campaign from December 4, 2012 to December 31, 2015.[11]

[10] The executives include CEOs, Chairman of the board, directors on the board, firm controller, and Vice President, and CEO/Chairman or Vice President of the parent company. See Table 1 for distribution of manager types.
[11] The anti-corruption campaign is still continuing, and December 31, 2015 is when our sample construction ends.

We identify firms with corrupt managers investigated using three approaches. First, we obtain information of CEOs of Chinese listed companies from the China Stock Market & Accounting Research (CSMAR) database, and identify a total of 2,862 CEO turnovers during the sample period of December 4, 2012 to December 31, 2015. For each CEO turnover, we manually search the news or biography on internet for the reasons of turnover, and identify the events involving corrupt behaviors.

Next, to examine corruption cases of non-CEO top executives, we examine disclosures by the Communist Party of China (CPC). As part of the disclosure about the anti-corruption campaign, Commission of Discipline Inspection of CPC's Central Committee publicizes a list of high-level party members being investigated, including executives of large state-owned enterprises.[12] We manually read through the list of publications, and identify the investigations involving managers of listed firms.

Third, we conduct key word searches on two large bodies of publications: a) More than 800,000 corporate announcements for all listed companies in our sample period from the CNINFO dataset; and b) News articles from Genius Finance, a widely-used database covering news articles from over 300 Chinese financial newspapers. Due to the large number of news articles, we first obtained the list of 35,353 director turnovers (both internal and external) during our sample period from CSMAR, and narrowed down the sample to the 40,000 articles that mention names of at least one of these directors.

For the searches, we compose a list of corruption-related keywords. Specifically, to select the appropriate keywords, we manually read through the corporate announcements and news articles about corruption cases from the first two sources (CEO turnovers and CPC disclosure), and compose a list of 34 keywords that are commonly used by the announcements and news articles to describe corrupt behaviors and investigations. Examples of keywords (in Chinese) include "discipline

[12] The disclosures can be found at http://www.ccdi.gov.cn/jlsc/.

violation", "under corruption investigation", "suspicion of bribery", and other key words which we detail in Section A.2 of the Appendix. We then use the list of keywords to conduct the textual search for all corporate announcements and news articles described above, and identify 1,049 corporate announcements and 2,236 news articles containing the key words. We manually read through these announcements and news articles to identify an additional sample of corruption cases.

We then combine the firms from the above three sources, and further read into the details of managers' corrupt behaviors. We use a conservative approach and exclude a small number of events that fall into one of the four categories: 1) The manager's corrupt behaviors took place before joining the company. We remove cases when a manager was investigated for activity as a government official before joining the firm; 2) The manager's corrupt behaviors are unrelated to the firm. For example, a vice president of a listed firm represented a block holder and his behaviors occurred in the block holder firm instead of the listed firm; 3) One event where the manager was found clean after the investigation; and 4) Two events where the listed firms experienced reverse merger or major asset restructuring within one year of the corruption investigation, in which case the top manager might not have had full control of the firm.

When a firm experienced several investigations involving multiple executives during our sample period, we keep only one event per firm. In particular, we chose the most important manager if there is an obvious rank difference between the managers (e.g., CEO versus other managers). If the managers involved are of similar importance, we keep the earliest event. For each event, we carefully go through announcements and news articles, and identify the event date as the earliest day when the news of investigation became available. We also include in our sample the cases where the parent company's top managers engage in corrupt behaviors, as in China parent companies have very tight control of its subsidiaries, either by directly managing them or through influencing their major decisions.

Our final sample includes 150 listed companies whose managers were investigated and dismissed during the anti-corruption campaign for corrupt behaviors. The size of this sample indicates the widespread corruption in China's corporate world, as well as the scale of the anti-corruption campaign, as the sample firms' total market capitalization is 5.29 trillion RMB (USD 805 billion). They account for 5.6 percent of China's listed firms in terms of number, and 18.1 percent in terms of market capitalization.[13]

2.2 Summary Statistics

Panel A of Figure 1 plots the distribution of sample firms by year, where firms are divided into state-owned enterprises (SOEs) and non-SOEs. A firm is classified as SOE if its controlling shareholder is affiliated with the Chinese government or its largest shareholder is affiliated with the Chinese government and holds at least 25% of the firm's outstanding shares. The data on SOE status are directly obtained from the CSMAR database, and we manually check and correct misclassifications. Panel A of Table 1 presents the corresponding numbers. The anti-corruption campaign has accelerated since its start in December 2012, as the number of firms involved in corruption investigations increased from just one firm in 2012 (December) to 28 firms in 2013, 50 firms in 2014, and 71 firms in 2015. Additionally, 86.7% of the firms are SOEs, which is consistent with managers of SOEs having greater conflict of interests and resources under control compared to non-SOEs. Panel B of Figure 1 plots the positions of corrupt managers for sample firms by year, and Panel A of Table 1 reports the corresponding numbers. Out of the 150 sample firms, 67 have corrupt CEOs, 25 firms have corrupt non-CEO executives, and 58 firms have corrupt top managers (CEOs or Vice Chairmans) from parent company.

[13] Since the corruption investigations took place from December 2012 to December 2015 with an accelerated speed, we calculate these percentages on December 31, 2014.

Panel C of Figure 1 plots the distribution of managerial corrupt behaviors (not mutually exclusive) for sample SOEs and non-SOEs, which reveals a stark contrast between SOEs and non-SOEs. While the most common corrupt behavior for SOE managers is receiving bribes, either from employees or other companies, non-SOE managers' corrupt behaviors concentrate in bribing other parties to gain business.

Panel B of Table 1 presents the corresponding numbers of firms associated with different corrupt behaviors. We are able to identify detailed corrupt behaviors of 101 out of the 130 SOEs in our sample, and the most common corrupt behaviors are receiving bribes (82 firms), embezzling company funds (25 firms), and illegally benefiting family members or relatives (29 firms). Managers of four SOEs, all financial firms, bribe government officials or other parties to obtain licenses or compete for underwriting business. The remaining 29 SOEs do not have detailed information about managerial corrupt behaviors, where the sources, such as corporate announcements or news articles, simply mention "involvement in financial issues", "severe violations of law and disciplines", etc. All of these managers are non-CEO executives where media coverage is relatively sparse compared to CEOs. For non-SOEs, we are able to identify specific corrupt behaviors for 18 out of the 20 non-SOEs in our sample, and 17 non-SOEs' managers were investigated due to bribing other parties. The remaining firm's manager was investigated for embezzling company funds. The stark contrast between SOEs and non-SOEs sheds light on the vastly different incentives and forms of corruption across different ownership structures.

2.3 Measures of Potential Corruption

Motivated by the existing literature, we examine a broad set of corruption measures from five aspects: accounting manipulations; related-party transactions; regulation breaches and entertainment expenditure; profitability; and corruption-related postings from a popular online investor forum. The definitions of our corruption proxies and control variables are listed below.

2.3.1 Measures of Accounting Manipulation

Manipulating accounting information can be associated with corruption as both are unethical behaviors. For example, existing studies document a greater tendency to manage earnings for U.S. firms that are located in more corrupt areas [Dass, Nanda, and Xiao (2014)] or prosecuted for violations of the Foreign Corrupt Practice Act [Huang (2016)]. Additionally, Fan, Guan, Li, and Yang (2014) document a positive relation between corruption and earnings management for a sample of Chinese firms. We therefore examine two measures of accounting manipulation that are widely used in the existing literature.

Our first measure of accounting manipulation is discontinuity in earnings distribution around zero, which has been widely cited as evidence of earnings management since proposed by Hayn (1995) and Burgstahler and Dichev (1997). Specifically, a much higher number of firms with small positive earnings than that of firms with small negative earnings indicates the manipulation of earnings above zero. The regulation of Chinese stock markets adds to the incentives for Chinese firms to avoid negative earnings. Specifically, a Chinese listed firm with two years' losses in a row will be assigned a label "ST" (special treatment) prior to its ticker, which is considered a negative signal to the market. Therefore, we expect the earnings discontinuity to be substantial for Chinese firms, especially those with one-year losses already. We follow the literature [Gilliam, Heflin, and Paterson (2015)] and construct two measures of earnings discontinuity, namely, standardized differences for small profit and small loss. The standardized difference for small profit tests if the actual number of firms with earnings just above zero is greater than expected, and the standardized difference for small loss tests if the actual number of firms just below zero is smaller than expected. We describe their construction in Section A.4 of Appendix for brevity.

Our second measure of accounting manipulation is discretionary accruals. It is the most commonly used measure of earnings management, and several studies also examine discretionary

accruals of Chinese firms as manipulation behaviors [e.g., Liu and Lu (2007)]. We follow the literature and construct annual discretionary accruals using the modified Jones' (1991) model. Since discretionary accruals reverse over time, we follow the literature and use the absolute value of discretionary accruals as a measure of accounting manipulation. A higher value of absolute discretionary accruals indicates a greater likelihood of corruption. We describe the details of construction in Section A.4 of Appendix for brevity.

2.3.2. Related Party Transactions

Existing literature suggests that related-party transactions can be associated with unethical or illegal behaviors of Chinese firms. We therefore examine three measures based on the existing literature on related party transactions: 1) Related-party sales (scaled by revenue), as Jian and Wong (2010) find that Chinese firms use related party sales to prop up earnings to meet the exchanges' listing requirements for financial performance; 2) Related-party loans (scaled by total assets), as Jiang, Lee, and Yue (2010) reveal the "tunneling" behaviors in Chinese firms, where controlling shareholders take advantage of the firm and other shareholders through large amount of borrowing from the company at very low or no costs; 3) Other receivables from parent (scaled by total assets), as Jiang, Lee, and Yue (2010) suggest that other receivables from parent also reflects the "tunneling" behaviors, where controlling shareholders obtain costless financing from the firm through trade credit. We describe the sources of data in Section A.4 of the appendix for brevity.

2.3.3 Regulation Breaches and Business Entertainment Expenditure

The third group of measures that we examine includes regulation breaches and entertainment expenditure, as both can be potentially associated with the degree of unethical or illegal behaviors in Chinese companies.

We obtain the number of regulation breaches of all Chinese listed firms from CSMAR's Enforcement Actions Research Database, and aggregate for firm-years. In counting the number of

breaches, we exclude the type of "non-material accounting errors", because they are associated with common accounting mistakes that are unlikely to be associated with corruption. Section A.4 of the Appendix provides a complete list of regulation breach categories.

The second measure, business entertainment expenditure (BEE), is widely considered by news media as associated with corruption, as this funding is often used by firms as perks to employees and especially top executives, or to establish relations with other parties to gain business. Cai, Fang, and Xu (2011) presents evidence that BEE is indeed related to corruption in China. Section A.4 of the Appendix provides details of the construction.

2.3.4. Profitability of Firms

Corruption in top managers, especially embezzling fund and receiving bribes, can cause direct loss to the firm or indirect loss from misallocation of the firm's resources. As a result, corruption can increase a firm's expenses and decrease its profitability. We therefore examine two measures of firms' profitability: 1) Difference between sales growth and net income growth, as news articles about sample firms often mention that corruption caused these firms to have much slower growth of profit than their growth of revenue. We calculate the difference of growth rates simply as $DIFSGNG_{i,t} = \frac{REV_{i,t}}{REV_{i,t-1}} - \frac{NI_{i,t}}{NI_{i,t-1}}$. Everything else equal, a larger difference between sales growth and net income growth indicates a greater degree of corruption; 2) Profit margin, calculated as the ratio between net income (NI) and total sales/revenue (REV), i.e. $PM_{i,t} = \frac{NI_{i,t}}{REV_{i,t}}$. Everything else equal, a lower profit margin indicates a greater degree of corruption.

2.3.5. Corruption-Related Postings

We collect corruption-related postings from "GuBa" ("StockBar" in English, http://guba.eastmoney.com/), one of the most popular online investment forums in China. Since its establishment on 2004, Guba has accumulated over 10 million users. According to Alexa Internet, a

subsidiary of Amazon, the number of new posts per day on Guba (including newly initiated posts and responses to existing posts) is as high as six million. To construct the measure of corruption-related postings at the firm level, we first download all the posts discussing listed companies (about 100 million) in Stockbar using a Python program. We manually read a sample of the "Guba" posts and find that posters normally use simple and casual language to discuss corruption rather than the formal language in the list of 34 key words for our news search. Therefore, we construct a list of 7 keywords based on our manual reading of the subsample of "Guba" posts that discuss corruption (provided in Section A.3 of the Appendix). A post is considered to be corruption-related if its title contains one of 7 keywords. We then calculate the measure of corruption postings for a firm-year as the ratio of the number of corruption-related posts to the total number of posts of the firm-year.

3. Is the Anti-Corruption Campaign Targeting More Corrupt Firms or Politically Driven?

As discussed in Section 1, the anti-corruption campaign has been widely associated with two possibilities. Some suggest that the campaign is a sincere effort to reduce corruption. In this case we expect that event firms will have a greater degree of corruption than peer firms. Others claim that the campaign is politically driven. In this case we should observe political connections being related to the probability of investigation. It is worth noting that the two explanations are not mutually exclusive, and we design tests below to examine both explanations.

3.1. Analysis of Corruption Measures for Event Firms

3.1.1. Univariate Analysis

For each event firm, we identify a matched firm by first selecting a subsample of firms that are in the same industry, have the same SOE status as the event firm, and have market capitalization

within the range of 50% and 150% of the event firm. We then choose from this subgroup a matched firm that has the closest book-to-market ratio to the event firm.[14]

We plot firm-level corruption measures in Figure 2 for event firms and matched firms in years t-2, t-1, and t, where t is the year of event (announcement of corruption investigation). Since we examine the level of corruption before investigations, we focus on the corruption measures in years t-1 and t-2 but also report those in year t which is partially before investigation.

Figure 2 shows that six of the nine firm-level corruption measures indicate greater degree of corruption in event firms than in matched firms. Specifically, in years t-1 and t-2, event firms relative to matched firms have much higher related-party sales, related-party loans, and other receivables from parent. Event firms also have lower profitability than matched firms as their income growth is lower than sales growth, and have low profit margin. Additionally, corruption postings are also higher for event firms than peer firms, indicating that investors more often discuss corruption issues about event firms than peer firms. In addition to these six measures, event firms' number of regulation breaches are also slightly higher in t-1 and much higher in t than matched firms. Regarding the remaining two measures, event firms have similar absolute value of discretionary accruals as matched firms, suggesting that accounting manipulation doesn't seem stronger for event firms. Finally, event firms have higher business entertainment expenditure than matched firms, but the difference is very small.

Table 2 further reports values of corruption measures and their differences between event firms and matched firms with associated t-statistics. It is worth noting that the relatively small sample size makes it difficult to observe statistical significance due to the lack of power. Table 2 nevertheless shows that, despite the small sample size, the differences between event firms and matched firms are

[14] Firms are divided into 19 industries using the first-digit of China Securities Regulatory Commission's 2012 industry classification codes. For five event firms there are no other firms in the same industry with close enough market capitalization. We therefore identify their matched firms as those having the closest market capitalization among firms in the same industry and with the same SOE status. We repeat all the event firm analyses in this paper by excluding these five event firms, and the results are unchanged. We report these robustness tables in Section A.5 of the Appendix for brevity.

statistically significant for four measures, namely, related-party sales, sales growth minus income growth, profit margin, and corruption postings. Additionally, the difference in related-party loan is almost significant at the 0.10 level (t-stat 1.58). Therefore, the results in Figure 3 and Table 2 consistently show that event firms are significantly more corrupt than peer firms.

Since the corrupt behaviors vastly differ between SOEs and non-SOEs, we report in Table 3 the corruption measures for the subsamples of SOEs and non-SOEs. A majority of the corruption measures are similar for SOEs and non-SOEs in the sample, although the non-SOE sample is very small, and the t-statistics are generally low. The main differences between SOE and non-SOE sample firms is related-party sales: SOE event firms have higher related-party sales than their peer firms, while non-SOEs have lower related-party sales than their peer firms. Additionally, SOE event firms have more regulation breaches than their peer firms, but non-SOEs have fewer regulation breaches than their peer firms.

We also study event firms' earnings discontinuity, and Figure 3 plots the earnings distribution of event firms and peer firms. The earnings sample for event firms include their two annual earnings announced before the dates of corruption investigations. Panel A shows a striking pattern of discontinuity around zero for event firms. Specifically, there is a sharp decline in the number of firms from small profit to small loss. We calculate the discontinuity statistics and find that the standardized difference for small profit is 2.12, which is about 21 times that of U.S. firms in the same period [Gilliam, Heflin, and Paterson (2014), page 122], indicating an abnormally high number of firms with small profit. Additionally, the standardized difference for small loss is -2.33, also 2.4 times that of the U.S. firms, indicating an abnormally low number of firms with small loss. These results suggest massive earnings management by Chinese listed firms to turn their earnings positive.

For a comparison, Panel B of Figure 3 plots the distribution of earnings for matched firms. The sample includes matched firms' two annual earnings announced before the corruption

investigations of corresponding event firms, i.e., earnings in the same periods as event firms'. Matched firms' earnings distribution demonstrates a similar earnings discontinuity as event firms. We also calculate standardized differences for matched firms and find little difference from event firms. Therefore, the results of earnings discontinuity is consistent with those of accruals in that event firms do not exhibit more earnings management than matched firms.

Overall, in the univariate analyses, the majority of the corruption measures examined indicate that event firms are significantly more corrupt than peer firms.

3.1.2. Probit Regressions of Investigation on Corruption Measures

To control for correlations across corruption measures and to jointly investigate relations between the various corruption measures and investigation, we estimate probit regressions. The sample includes event firms and their matched firms. The dependent variable is a binary variable that equals one if the firm is investigated for corruption, and zero if the firm is not investigated for corruption. The major independent variables are firm-level corruption measures of the year prior to the corruption investigation (year t-1). We further control for firm characteristics, including size (natural log of market capitalization), SOE status, and two dummies for firms located in medium- and high-corruption provinces. Medium-corruption (high-corruption) provinces refers to those in the medium (top) tercile of the provincial corruption index constructed in Ang, Bai and Zhou (2015). Their index is a ranking-weighted number of corrupt officials in each province, based on records published by Chinese Communist Party's Central Commission for Discipline Inspection (CCDI) from November 2012 to December 2014.

Models (1) to (5) in Table 4 present probit regressions of corruption investigation on the five groups of firm-level corruption measures, respectively. Consistent with the univariate analysis, the signs of coefficients on most corruption measures indicate that degree of corruption positively predicts corruption investigation. The only exception is business entertainment expenditure (BEE),

where the coefficient is negative rather than positive, but the t-statistic is only -0.52, far from being statistically significant. It is worth noting that Chinese firms disclose BEE on a voluntary basis, which could introduce noise as high BEE firms might choose not to disclose, causing missing values. Despite the small sample, the coefficients on related-party sales, related-party loans, sales growth minus income growth, and corruption postings are significantly positive, consistent with the univariate analysis.

Model (6) in Table 4 includes all firm-level corruption measures into the same regression. The sample size is further reduced by over one-third because of the availability of BEE. The results are similar as previous models, except the corruption postings become insignificant, although the sign of coefficient remain unchanged. To address the concern of reduced sample size, we repeat the regressions in Model (7) without including BEE, and the corruption postings becomes significant at the 0.05 level. Regarding economic significance, the measure of sales growth minus income growth has the largest impact, where one standard deviation increase in this measure is associated with a 8.3 percentage points increase in the probability of investigation. The marginal effects are also large for other corruption measures such as other receivables from parents, corruption postings, related-party loans, and related party sales , which are 8.0 percentage points, 6.4 percentage points, 6.4 percentage points, and 5.6 percentage points, respectively.

For the control variables, size is significantly positive, indicating that larger firms are more likely to be investigated for corruption. Additionally, the dummy of high-corruption province is also significantly positive, indicating that a more corrupt political environment can boost corrupt behaviors in the corporate world. The coefficient in model (7) suggests that, everything else equal, the probability of investigation is 13.9 percentage points higher for firms located in high-corruption provinces than those in low corruption provinces.[15] For robustness, we also estimate logit regressions instead of

[15] One concern about the provincial corruption index is look-ahead bias, as the index is constructed during 2012-2014. For robustness, we repeat the regression analyses without controlling for the provincial corruption index, and all our results hold. We report these results in Section A.6 of the Appendix for brevity.

probit regressions and obtain similar results. Overall, our results indicate that investigated managers are from firms that are generally more corrupt than their peers.

3.2. Are Political Factors Related to Investigations?

While our results are consistent with the corruption investigations affecting more corrupt firms, it is also possible that political factors could influence corruption investigations and corrupt firms are targeted for political reasons. We therefore examine the relation between firms' political connections and the investigation events. On the one hand, political connections can increase the probability of investigation if the anti-corruption campaign targets firms that are benefiting from their political connections. In fact, the campaign began with a targeting of politicians and later spread to the business world ("spillover effect"). On the other hand, political connections can decrease the probability of investigation if the connections serve as protection to the firms ("protection effect"). While the spillover effect is likely associated with general political connection, the protection effect is likely associated with specific political connections between firms and those in power.

We therefore examine two measures of political connections: a measure of general government connection, and a measure of specific affiliation with the current leadership. To measure general political connections between firms and government, we follow the existing literature [e.g., Fan, Wong, and Zhang (2007), Fisman and Wang (2015)] and construct the measure as a dummy variable that equals to one if a C-Suite executive of the company previously served as high-ranking government official.[16]

Following Cohen, Frazzini, and Malloy (2010) who examine school-tie connections based on University affiliations between U.S. firms and analysts, we measure specific political connections based

[16] The Chinese political system has five ranks: 1) Nation ("Guo Ji" in Chinese, e.g., President, Vice President, Premier,Vice Premier); 2) Province/Ministry ("Sheng/Bu Ji", e.g., Provincial Governor, Deputy Provincial Governor, Minister, Deputy Minister); 3) Prefecture/City ("Ting/Ju Ji", e.g., Mayor and Deputy Mayor of prefecture-level cities); 4) County ("Xian/Chu Ji" e.g., county's chiefs); 5) Township ("Xiang/Zhen Ji", e.g., Town Mayor). We follow Fisman and Wang (2015) and identify executives that held a Prefecture/City or higher position before joining the company.

on affliliation with the universities attended by the seven current members of the Politburo Standing Committee (PSC) of CPC's Central Committee, the most powerful decision-making body in China. The university affiliation measure is a dummy variable that equals to one if a C-Suite executive of the company graduated from the same university as one of PSC members.[17] For both event firms and matched firms, we manually read their managers' biographies (most from CSMAR and some from online search) and collect the university data.[18]

For the analysis of general government connection, we first examine simple univariate results which show that 43.3 percent of the event firms have general government connections, over twice as that of matched firms (18.7 percent). More formally, we estimate similar probit regressions as in Table 4 but on the general government connection measure. In Panel A of Table 5, the coefficient on the general government connection measure is significantly positive, suggesting that firms that have closer relations to government are more likely to be investigated. The coefficient remains significant after adding controls for the firm-level corruption measures. These results are consistent with the spillover effect, namely, that firms with political connections are more likely to be an anti-corruption target.

For the analysis of unversity affiliation, we also examine univariate results as a starting point (shown in Table A7 of the Appendix). Among the 150 investigated firms, just 12 (or 8.0%) firms have the same university affiliations as existing leadership. This is considerably lower than the 27 (18.0%) affiliated firms among the matched sample. The two most prestigious universities in China, Tsinghua University (school of Xi, Jinping) and Peking University (PKU, school of the Prime Minister Li,

[17] As discussed in Section 2, for some event firms, the managers investigated are top managers of parent company. For consistency, in these cases we construct the political connection measures using the managers of the company's parent firm.

[18] We also considered a school-tie measure where leaders and managers within a two- or four-year period at a university would be linked. However, possibly because of mandatory retirement requirements, there is little intersection between firm managers and national leaders at universites. Managers of state-owned enterprises are required to retire at 60, whereas the average age for PSC members is 67.

Keqiang), account for majority of the university affiliations. Top managers of 10 out of the 12 affiliated event firms, as well as 24 out of the 27 affiliated matched firms, went to Tsinghua or PKU.[19]

Panel A of Table 5 presents probit regressions of investigation on the university affiliation measure. The coefficient on university affiliation is significantly negative (t-stat -3.10), suggesting that executives with degrees from the same universities as the existing leadership are associated with a reduced probability of being investigated. The coefficient remains significantly negative when we further include the general political connection measure and the firm-level corruption measures. Additionally, the coefficients on the corruption measures are also similar to those in Table 4. For a robustness test, we repeat the regressions in Panel B of Table 5 using an alternative university-affiliation measure based on a firm's number of affiliated managers rather than dummy variable. The university-affiliation effect is also highly significant (t-stat -2.66) with this alternative measure.[20]

There seem to be three likely explanations for the importance of the university affiliation. First, it is possibile that managers who graduated from the schools, especially Tsinghua and PKU, are less corrupt than their peers. Both universities are highly selective in terms of admission and well known for producing China's political leaders, so their graduates may have better self-discipline with greater career potentials in mind. Second, managers with direct relations with national leaders through school affiliation may face a lower probability of investigation. Third, everything else equal, investigators may avoid targeting managers from firms with a Tsingua or PKU affiliation as they may fear that doing so

[19] Note that a firm can be affiliated with more than one universities. Among the affiliated event firms, 6 are affiliated with Tsinghua, 5 with PKU, and 2 with Xiamen University. Amongh the affiliated matched firms, 18 are affiliated with Tsinghua, 10 with PKU, and 4 with Xiamen University.

[20] The university affiliation measure excludes the Party School of the Central Committee of CPC, which is the university of a current PSC member. The Party School differs from Chinese universities in that it is a unit under the Central Committee of CPC specializing in training (high-rank) government and party officials. For robustness, we repeat the regression analysis using the university affiliation measures that include the Party School and the overall results remain similar. The results and discussions are in Section A.8 of the Appendix.

could be considered challenging the current leadership. Although we would like to disentangle these explanations, it is difficult to find out the motives of parties in corruption investigations.

However, for a comparison and better understanding of possible motivations, we examine university affiliations with the past leadership that are not in common with the current leadership.[21] Interestingly, university affiliations with past leadership are more common in investigated firms (9.3%) than matched firms (1.3%), a pattern contrary to university affilations with current leadership. Table 5 Panel B (Models 3 and 4) repeats the probit regressions but with the past-leadership affiliation, and the coefficient is significantly positive, suggesting that university affliliation with past leadership seems to increase the probability of being investigated.[22]

To further understand the positive relation between past-leadership university affiliation and the probability of investigation, we examine such affiliation across specific schools and find that the investigated firms' higher affiliation measure is mainly driven by the China University of Petroleum (Panel B of Table A7 in Appendix). This university was attended by Zhou Yongkang, the highest-ranking national leader who was indicted in the anti-corruption compaign. We repeat the test of past-leader university affiliation but excluding the China University of Petroleum, and the coefficient becomes insignificant, indicating that the result is possibly driven by managers linked to the indicted national leader Zhou, Yongkang.

In addition to university affiliation, we also examine two other measures of connections with the existing leadership, including: 1) Workplace connection, which is a dummy variable that equals to one if the company is located in a province where at least one of the PSC members had worked before becoming national leader; 2) Birthplace connection, which is a dummy variable that equals to one if

[21] There were nine members of the previous PSC, among which seven are not on the current PSC. These former members went to China University of Geosciences, Hebei University of Technology, Harbin Institute of Technology, Beijing University of Chemical Technology, and China University of Petroleum. Additionally, two former members went to Tsinghua, which we do not consider since it overlaps with current PSC members.

[22] For robustness test, we also examine past-leader university affiliation using a firm's number of affiliated managers instead of dummy variable, and the coefficient remains significantly positive (reported in Table A8 of Appendix for brevity).

the company is located in the home province of a PSC member. The potential problem with these measures is that they are not as specific and there may not be much affiliation to a province or birthplace – China's provinces are large and populated, and hence the manager may not have overlapped with national leaders in their workplaces or birthplaces. The regression analyses (reported in Table A10 of Apppendix for brevity) show that the workplace and birthplace connections with the existing leadership does not affect the probability of being investigated.

Overall, we believe the descriptive nature of our findings is interesting but note that they have limitations. None of our tests are causal and it is difficult to find out the precise causal driver of the relationships we document or motivation of the politicians. Our results provide evidence that general political connection and specific political connection to former leaders are associated with an increased probability of investigation, while university affiliation with Tsinghua and PKU is associated with a decreased probability of investigation.

3.3. How Do Corruption Investigations Impact the Event Firms?

We examine how the investigations affect the event firms in terms of stock returns and changes in corruption measures. To examine market reaction to the corruption investigations, we plot in Panel A of Figure 4 the cumulative abnormal returns (CARs) of event firms in the [-15, +15] window surrounding investigation, where day 0 is the announcement date of investigation. Daily abnormal return is constructed using Fama-French three-factor model. Panel A shows a sharp decline in stock price upon the announcement of corruption investigations, and the decline persists into the two weeks after the event.[23]

We further examine long-term returns of event firms after corruption investigations. Buy-and-hold abnormal returns (BHAR) are used in the tests because cumulative returns can introduce

[23] Since corruption vastly differs between state-owned enterprises (SOEs) and non-SOEs, we further plots SOEs and non-SOEs separately, where the price decline is much larger for non-SOEs than SOEs. The figures are presented in Section A.10 of the Appendix for brevity.

potential bias in the long-term window. Panel B of Figure 4 plots long-term buy-and-hold abnormal returns for event firms in the [-15, +360] window, showing a continued price decline for event firms in the long-term window after corruption investigations. Table 6 reports CARs in the event windows and BHARs in the long-term windows. Consistent with Figure 4, the event firms' returns are significantly negative both on and after the events.

In addition to stock returns, we further analyze changes in corruption measures for event firms after investigations. However, a big issue about this analysis is that the accounting variables end in 2014, thus only firms investigated in December 2012 and 2013 have accounting data in the year after investigations, causing a very small sample and low power. We nevertheless report in Table 7 the corruption measures for event firms relative to matched firms in years t-1 and t+1, where year t is the year of corruption investigation. The differences between t-1 and t+1 are also reported with associated t-statistics. The samples for firm-level corruption measures are as large as 28 firms, and not surprisingly, most of the changes are insignificant. Therefore, we focus on the sign and magnitude of a change. The results show that out of all corruption measures, only one measure, related-party sales, sees a substantial improvement. The measure of sales growth minus income growth also improves slightly. The remaining measures, however, either remain little changed or even deteriorate after corruption investigations. In addition to the firm-level measures, we also report earnings discontinuity measures before and after corruption investigations which do not exhibit material improvement either.

4. Has the Anti-Corruption Campaign Improved Corporate Culture?

A key question about the anti-corruption campaign is whether or not it suffices its general purpose, i.e., to bring positive changes to China's corporate world. To answer this question, we examine the corruption measures for all companies listed on Chinese stock exchanges, namely, Shanghai and

Shenzhen stock exchanges.[24] As the second biggest economy in the world, China has seen a rapid growth in stock markets in the past decade. In 2005, there were 1,352 listed companies in our sample, with a total free-float market capitalization of RMB 994 billion, or USD 151.3 billion. As of 2014, there are 2,631 listed companies in our sample, with a total free-float market capitalization of RMB 31.3 trillion, or USD 4.8 trillion.

4.1. Earnings Discontinuity for All Listed Firms

Before going to the firm-level corruption measures, we first examine earnings discontinuity in the ten-year period of 2005-2014. Figure 5 plots earnings distribution for all Chinese listed firms before the anti-corruption campaign (2005-2011) and after the campaign (2013-2014) separately. We exclude year 2012 as the year is largely before the start of anti-corruption campaign (December 2012), but the earnings were summarized and announced in early 2013, after the start of the campaign.

Panel A of Figure 5 exhibits a strong earnings discontinuity around zero for Chinese firms overall during 2005-2011, as evidenced by a sharp decline in the number of firms from small profit to small loss. This result indicates massive earnings management in China's corporate world before the anti-corruption campaign. For a comparison, Panel B of Figure 5 plots the earnings distribution in 2013-2014, which shows that earnings discontinuity remains similar after the start of the anti-corruption campaign.

To formally test earnings discontinuity, we present in Panel A of Table 8 the statistics of earnings discontinuity by year from 2005 to 2014. The difference for small profit is significantly positive for all years, indicating an abnormally large number of firms reporting small profits during this period. Additionally, the difference for small loss is significantly negative for all years, indicating

[24] There are two types of shares in China's stock markets. A-shares are denominated in Chinese yuan and traded by only Chinese citizens. B-shares are denominated in either US dollar or Hong Kong dollar, and traded by foreign investors or domestic residents using foreign currency. We follow the literature and exclude from our sample the companies that issue only B shares but not A-shares.

an abnormally low number of firms reporting small loss. These numbers are consistent with Figure 4 in that earnings management is prevalent for Chinese firms in general. We also compare the statistics between the year before the anti-corruption campaign (2011) and the two years after the anti-corruption campaign (2013-14). The difference for small loss is positive and significant at the 0.10 level, and the difference for small gain is insignificant. We further examine discontinuity statistics for firms already with one-year losses in the bottom panel of Table 8. These firms have strong incentives to manipulate earnings to above zero, because a second-year loss will result in a symbol "ST" (special treatment) before the ticker, thus sending a negative signal to the market. The bottom panel shows that these firms indeed exhibit greater earnings discontinuity as having much larger differences of small profit and small loss than the full sample, but there is no significant improvement after the anti-corruption campaign. Overall, the results in Table 8 show that the anti-corruption campaign does not seem to reduce earnings discontinuity for Chinese firms.

4.2. Firm-Level Corruption Measures for All Firms: Before and after the Start of Anti-Corruption Campaign

Next, we turn to examining firm-level corruption measures for the universe of Chinese firms before and after the anti-corruption campaign. Figure 6 plots the annual averages of firm-level corruption measures for all Chinese listed companies from 2005 to 2014, and we focus on the changes around 2012, the start of the anti-corruption campaign.

Panels A to D of Figure 6 plot the four groups of corruption measures separately, which show that the improvement associated with the anti-corruption campaign seems to concentrate in the two most observable aspects: Business entertainment expenditure (BEE) and regulation breaches. On one hand, Panel C of Figure 6 shows that both measures experienced a large decline after 2012. The dramatic decline in business entertainment expenditure provides formal support for the intense media

coverage of China's efforts to eliminate luxury gifts and social events with the campaign.[25] On the other hand, the other three groups of corruption measures do not see a significant improvement after the start of campaign. Specifically, Panel A of Figure 6 shows just a slight decline in absolute discretionary accruals, but the decrease took place in 2012 when the campaign was just beginning. Furthermore, there is no further reduction in accruals in 2013 and 2014. Additionally, Panels B and D show that the measures of related-party transactions and profitability remain little changed after 2012, despite the anti-corruption campaign.[26]

For a formal analysis, we report in Table 9 the annual averages of corruption measures for all Chinese listed firms from 2005-2014. To assess the statistical significance of changes after the anti-corruption campaign, we calculate the difference for each measure between 2011 (the year before the anti-corruption campaign) and the average of 2013-2014 (the two years after the campaign), together with the associated t-statistic. We exclude 2012 because the accounting figures of 2012 (mostly before campaign) were composed and announced in early 2013 (after campaign), so the inference of the measure in 2012 is not clear.

Table 9 shows that, consistent with Figure 6, there is a statistically significant decrease in business entertainment expenditure after the start of the anti-corruption campaign. However, the change in regulation breaches becomes significantly positive, suggesting that the decrease shown in Figure 6 is entirely driven by the jump in regulation breaches during 2012.[27] Additionally, the change in absolute value of discretionary accruals is also significantly negative, although the drop started in

[25] For an example, see the Forbes article about how the anti-corruption campaign hurt a luxury Chinese liquor company due to negative shocks to demand: http://www.forbes.com/sites/hengshao/2013/09/03/tumbling-stock-of-luxury-chinese-liquor-company-reflects-strength-of-corruption-clamp-down/#122227165da2.

[26] We also conduct subsample analyses for state-owned enterprises (SOEs) and non-SOEs, and the results of corruption measures for the subsamples are generally similar to those in Figure 6. We present the figure in Section A.11 of the Appendix for brevity.

[27] Since the vast majority of regulation breaches in 2012 occurred before the start of anti-corruption campaign, we also calculate the difference in regulation breaches between 2013-14 and 2012, and find that the change is negative and marginally significant (t-stat -1.83).

2012 which is largely before the anti-corruption campaign. Among the related-party transaction variables, there is a significant decrease in other receivables but a significant increase in related-party loans, and the change in related-party sales is insignificant. Additionally, both profitability measures suggest a deterioration in profitability after the anti-corruption campaign, although the change in sales growth – income growth is statistically insignificant. Therefore, the results in Figure 6 and Table 9 show that while the anti-corruption campaign successfully reduced business entertainment expenditure for Chinese firms, it has not significantly altered China's corporate world along other dimensions of corruption.

4.3. Does Anti-Corruption Campaign Improve the Information Environment of China's Financial Markets?

While our analyses so far examine the changes in corporate world, an important question is how the anti-corruption campaign impacts the financial market environment in China. We therefore examine if the campaign reduced leakage of inside information and inside trading, important indicators of the financial market environment.

Our test design is based on Griffin, Hirschey, and Kelly (2011) who show that information leakage can result in a lack of stock price response to information disclosure, and therefore lower return volatility around news events. Following Griffin, Hirschey and Kelly (2011), we measure abnormal stock return volatility on earnings announcement days relative to other days. A lower stock return volatility indicates fewer price movements upon announcement and therefore more information leakage or insider trading. We consider annual earnings annoucements for all Chinese listed firms and construct two measures of volatility around earnings announcement. We first define stock return volatility in a window as the mean of absolute daily abnormal return (in excess of market return) in this window, and calculate normalized volatility as the return volatility during the 4-day window [-1, +2] divided by the return volatility during the [-56, -2] window (55 days before the announcement window) and the [+3, +57] window (55 days after the announcement window). Day 0

refers to the earnings announcement day. We further calculate differenced volatility as the return volatility during the 4-day window [-1, +2] minus the return volatility during the [-56, -2] window (55 days before the announcement window) and the [+3, +57] window (55 days after the announcement window). We require at least four days of consecutive trading around the announcement to calculate the volatility measures.

Figure 7 plots the annual averages of volatility measures for all Chinese listed firms from 2005 to 2014. The volatility measures generally decrease rather than increase from 2012 onwards, providing little evidence of reduced information leakage or insider trading after the start of the anti-corruption campaign.[28] Table 10 reports the volatility measures from 2005 to 2014, as well as the changes after the start of the anti-corruption campaign. The results also show that, consistent with Figure 7, the volatility measures decrease rather than increase after the anti-corruption compaign, and changes are statistically significant. These results suggest that the anti-corruption campaign does not seem to improve the information environment of China's financial markets.

4.4. Benchmarking Corruption Measures of Chinese Firms to Hong Kong Firms

The changes in corruption measures of all Chinese listed firms, especially those based on financial variables, can be affected by varying macroeconomic condition instead of just the overall degree of corruption. We attempt to address this issue using Hong Kong firms as benchmark. Since the economies of Mainland China and Hong Kong are closely related, Hong Kong firms share similar economic condition with Chinese firms but there is no anti-corruption campaign in Hong Kong during the same period. Therefore, using Hong Kong firms as benchmark can alleviate the impact of varying economic condition and single out the impact of China's anti-corruption campaign.

[28] Note that the volatility measures of 2012 are measured after the start of the anti-corruption campaign (December 2012), as the earnings of 2012 are announced in the first quarter of 2013.

We first screen Hong Kong listed firms to idenitify Hong Kong local firms instead of foreign or Mainland Chinese firms listed in Hong Kong. Among the 1,869 Hong Kong listed firms, we first exclude Mainland Chinese firms, namely, H shares, Red Chips, and Chinese private enterprises, which in total account for 947 Hong Kong listed firms. Next, we exclude 49 foreign firms using three sources: Wolrd Federation of Exchanges Database, constituents of Hang Seng Foreign Companies Composite Index, and a manual reading of company tickers and names. In the end, we are left with 873 Hong Kong local firms. Additionally, Chinese firms have December fiscal year ends but Hong Kong firms' fiscal year ends may vary. To avoid misalignment of accounting periods, we further require Hong Kong firms to have fiscal year ends between Septermber and March, which left us with 741 Hong Kong local firms.

Then we use the matched-firm procedure in the paper to match Chinese listed firms with Hong Kong firms. Specifically, for each Chinese listed firm, we identify a group of Hong Kong firms in the same industry as the Chinese firm and with market cap between of 50% and 150% of the Chinese firm. We then choose from this group a matched Hong Kong firm that has the closest book-to-market ratio to the Chinese firm.

Due to data availability of Hong Kong firms, we are able to examine six of the measures for the benchmark analyses: 1) Earnings discontinuity; 2) Absolute value of discretionary accruals; 3) Regulation breaches; 4) Growth of sales minus growth of net income; 5) Profit margin; and 6) Return volatility around earnings announcement. For each measure, we first calculate the difference between Chinese firms and matched Hong Kong firms, and then difference-in-difference before and after the anti-corruption campaign (average of years 2013 and 2014 minus 2011). Table 11 presents the results, where the signs and signficances of the changes are similar to those without the bechmarking approach (Tables 9 and 10), with the only exception of absolute discretionary accruals, which becomes

significantly positive, indicating more earnings management. Therefore, the benchmarking analysis confirms that there is little improvement in the corruption measures of Chinese firms overall.

5. Conclusion

It is widely agreed that corruption is costly to an economy, but rarely do corruption levels in a country decrease dramatically. The "Eight-point Regulation" is a widespread effort that we find has led to investigations of top executives at 150 Chinese firms that represent over 18% of the market capitalization in slightly over three years. The investigated firms do exhibit more indications of self-dealing than their matched-firm counterparts, and the investigations are associated with both short-term and long-term negative returns. Managers with the same university affiliations as China's top leaders are less likely to be investigated, while managers with past political careers or university affiliations to past leaders are more likely to be investigated. Hence while corruption investigations ensnare executives from more corrupt companies, there may be an element of political favoritism.

For Chinese firms as a whole, while there is a large decrease in highly visible business entertainment expenditures in 2013-2014, less conspicuous but important indicators of self-dealing and accounting manipulation exhibit no improvement. This lack of improvement is present for both SOEs and non-SOEs, and after alternative benchmarking with Hong Kong firms. Most notably, earnings management in 2013-2014 is rampant with an extremely large number of firms exhibiting small positive earnings, but very few firms exhibiting negative earnings. Overall, our findings suggest that any decreases in corruption indicators appear to be largely limited to conspicuous consumption.

While more time may be necessary to assess the full impact of this expanding campaign, our findings suggest that the reforms may be a step in the right direction but may not accomplish the broader changes that are intended to spur economic growth. Given the historical experience from other corruption campaigns as surveyed by Svensson (2003), it seems that an extensive commitment

to reform of the legal, institutional, and press freedom environment in China may be necessary to achieve substantial reductions in corruption.

References

Acemoglu, Daron, and Thierry Verdier, 2000, The choice between market failures and corruption, *The American Economic Review* 90, 194-211.

Ang, Andrew, Jennie Bai, and Hao Zhou, 2015, The great wall of debt: The cross section of Chinese local government credit spreads, Working Paper.

Banyan, 2014, Tiger in the net, *The Economist*.

Bardhan, Pranab, 1997, Corruption and development: A review of issues, *Journal of Economic Literature* 35, 1320-1346.

Beaver, William H., Maureen F. McNichols, and Karen K. Nelson, 2007, An alternative interpretation of the discontinuity in earnings distributions, *Review of Accounting Studies* 12, 524–556.

Branigan, Tania, 2015, Politburo, army, casinos: China's corruption crackdown spreads, *The Guardian*.

Burgstahler, David, and Ilia Dichev, 1997, Earnings management to avoid earnings decreases and losses, *Journal of Accounting and Economics* 24, 99-126.

Cai, Hongbin, Hanming Fang, and Lixin Colin Wu, 2011, Eat, drink, firms, government: An investigation of corruption from the entertainment and travel costs of chinese firms. *Journal of Law and Economics* 54, 55–78.

Chen, Charles J.P., Zengquan Li, Xijia Su, and Zheng Sun, 2011, Rent-seeking incentives, corporate political connections, and the control structure of private firms: Chinese evidence, *Journal of Corporate Finance* 17, 229-243.

Chen, Gongmeng, Michael Firth, Daniel N. Gao, and Oliver M. Rui, 2006, Ownership structure, corporate governance, and fraud: Evidence from China, *Journal of Corporate Finance* 12, 424-448.

Chen, Gongmeng, Michael Firth, Yu Xin, and Liping Xu, 2008, Control transfers, privatization, and corporate performance: Efficiency gains in China's listed companies, *Journal of Financial and Quantitative Analysis* 43, 161-190.

Cheung, Yan-Leung, P. Raghavendra Rau, and Aris Stouraitis, 2006, Tunneling, propping, and expropriation: Evidence from connected party transactions in Hong Kong, *Journal of Financial Economics* 82, 343-386.

Dass, Nishant, Vikram Nanda, Chong (Steven) Xiao, 2014, Firms in corrupt environments and the value of corporate governance, Working paper, Georgia Tech.

Fan, Joseph P.H., Feng Guan, Zengquan Li, and Yong G. Yang, 2014, Relationship networks and earnings informativeness: Evidence from corruption cases, *Journal of Business Finance & Accounting* 41, 831-866.

Fan, Joseph P.H.,T.J. Wong, and Tianyu Zhang, 2007, Politically connected CEOs, corporate governance and Post-IPO performance of China's newly partially privatized firms, *Journal of Financial Economics* 84, 330–357.

Fisman, Raymond, and Jakob Svensson, 2007, Are corruption and taxation really harmful to growth? Firm level evidence, *Journal of Development Economics* 83, 63-75.

Fisman, Raymond, and Yongxiang Wang, 2015, The mortality cost of political connections, *Review of Economic Studies* 82, 1346-1382.

Gilliam, Thomas A., Frank Heflin, and Jeffrey S. Paterson, 2014, Evidence that the zero-earnings discontinuity has disappeared, *Journal of Accounting and Economics* 60, 117-132.

Griffin, John M., Nicholas H. Hirschey, and Patrick J. Kelly, 2001, How important is the financial media in global markets? *Review of Financial Studies* 24, 3941-3992.

Hayn, Carla, 1995, The information content of losses, *Journal of Accounting and Economics* 20, 125-153.

Huang, Mengjie, 2016, Financial reporting quality in corrupt firms: Evidence from the foreign corrupt practices act, Working paper, University of Rochester.

Jian, Ming, and T. J. Wong, 2010, Propping through related party transactions, *Review of Accounting Studies* 15, 70-105.

Jiang, Guohua, Charles M.C. Lee, and Heng Yue, 2010, Tunneling through intercorporate loans: The China experience, *Journal of Financial Economics* 98, 1–20.

Jones, Jennifer J., 1991, Earnings management during import relief investigations, *Journal of Accounting Research* 29, 193–228.

Kaufman, Daniel, and Shang-Jin Wei, 1999, Does "grease money" speed up the wheels of commerce? Working paper, NBER.

Lee, John, 2016, Why Xi's anti-corruption campaign won't work, *Forbes*.

Leff, Nathaniel H., 1964, Economic development through bureaucratic corruption, *The American Behavioral Scientist* 8, 8-14.

Li, Cheng, and Ryan McElveen, 2014, Debunking misconceptions about Xi Jinping's anti-corruption campaign, *Brookings*.

Lin, Chen, Randall Morck, Bernard Yin Yeung, and Xiaofeng Zhao, 2016, Anti-corruption reforms and shareholder valuations: Evidence from China, Working Paper.

Liu, Qiao, and Zhou (Joe) Lu, 2007, Corporate governance and earnings management in the Chinese listed companies: A tunneling perspective, *Journal of Corporate Finance* 13, 881-906.

Lui, Francis T., 1985, An equilibrium queuing model of bribery, *Journal of Political Economics* 93, 760-781.

Magnus, George, 2015, Xi's anti-corruption campaign key to China's prospects.

Mauro, Paolo, 1995, Corruption and growth, *Quarterly Journal of Ecnomics* 110, 681-712.

Murphy, Kevin M., Andrei Shleifer, Robert W. Vishny, 1993, Why is rent-seeking so costly to growth? *The American Economic Review* 83, 409-414.

Ou-Yang, Hui, Haibing Shu, and Sonia Man-lai Wong, 2015, Does it pay for entertaining your stakeholders, Working Paper.

Pei, Minxin, 2007, Corruption threatens China's future, *Policy Brief* 55.

Qian, Nancy, and Jaya Wen, 2015, The impact of Xi Jinping's anti-corruption campaign on luxury imports in China, Working Paper.

Reinikka, Ritva, and Jakob Svensson, 2004, Local capture: Evidence from a central government transfer program in Uganda, *Quarterly Journal of Economics*, 119, 679-706.

Shleifer, Andrei, and Robert Vishny, 1993, Corruption, *Quarterly Journal of Economics* 108, 599-617.

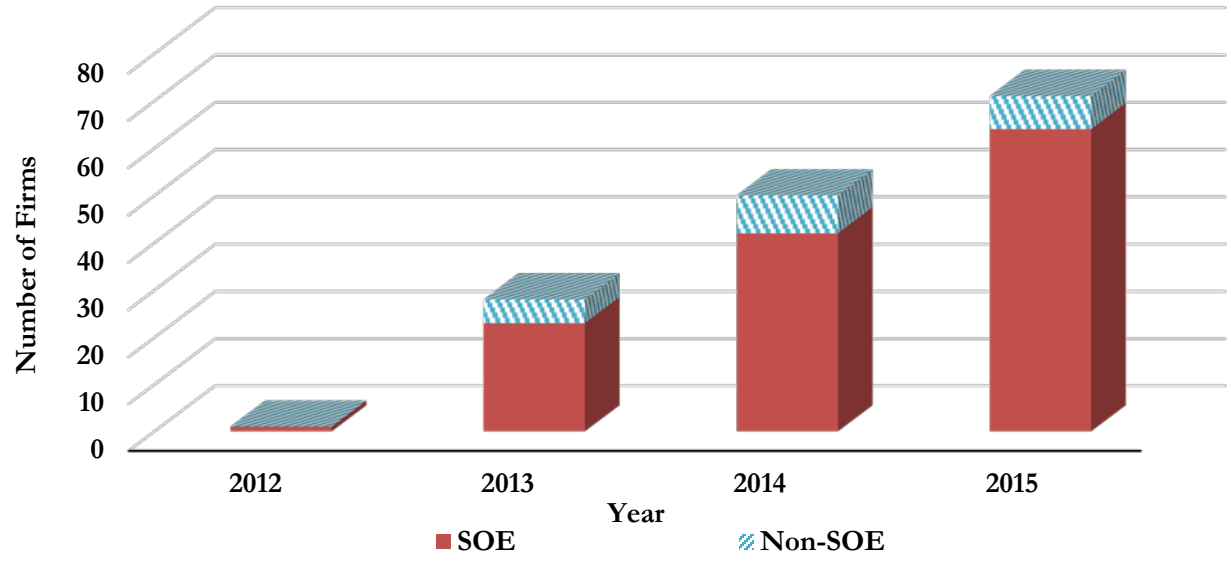
Svensson, Jakob, 2003, Who must pay bribes and how much? Evidence from a cross section of firms, *Quarterly Journal of Economics* 118, 207-230.

Wei, Shang-Jin, 2000, How taxing is corruption on international investors, *Review of Economics and Statistics* 82, 1-11.

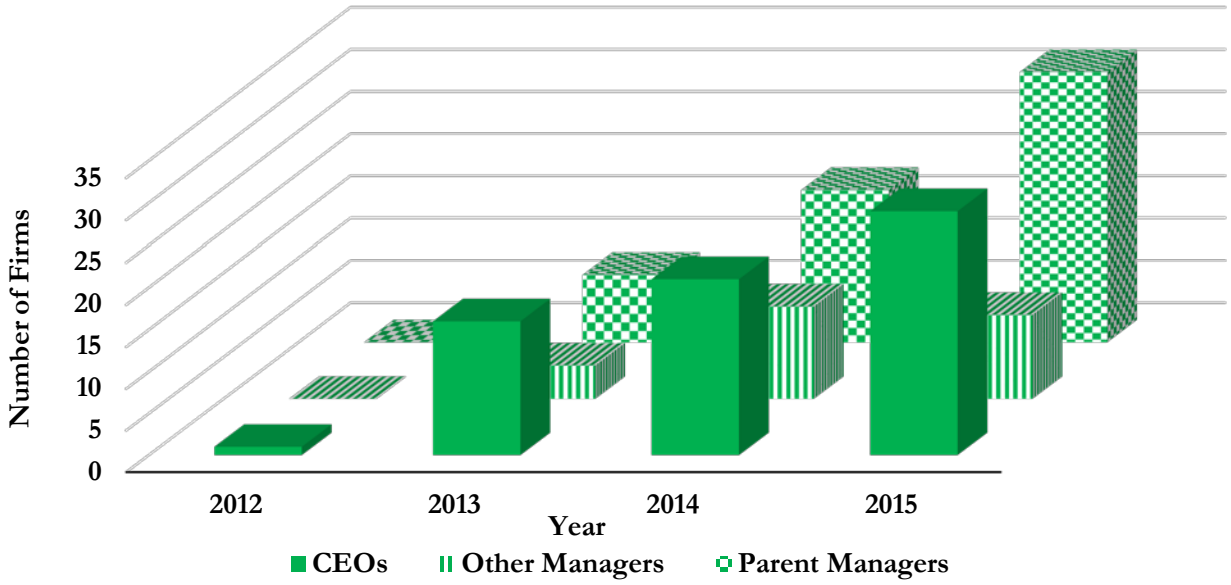
Figure 1
Description of Sample Firms

This figure plots the distribution of 150 sample firms with corrupt managers investigated during China's anti-corruption campaign. The sample period starts from the beginning of the anti-corruption campaign on December 4, 2012 to December 31, 2015. Panel A plots the distributions of state-owned enterprises (SOEs) and Non-SOEs by year. Panel B plots the distribution of firms with different positions of corrupt managers by year. The corrupt managers in the sample are CEOs, other top managers who also serve as internal directors, and top managers of parent company. Panel C plots the distributions of firms involved in different specific corrupt behaviors for SOEs and Non-SOEs. These corrupt behaviors are the most common ones among sample firms, and they are not mutually exclusive.

Panel A: State-Owned Enterprises (SOEs) and Non-SOEs across Years



Panel B: Distribution of Firms with Different Manager Positions across Years



Panel C: Distribution of Firms with Different Corrupt Behaviors for SOEs and Non-SOEs

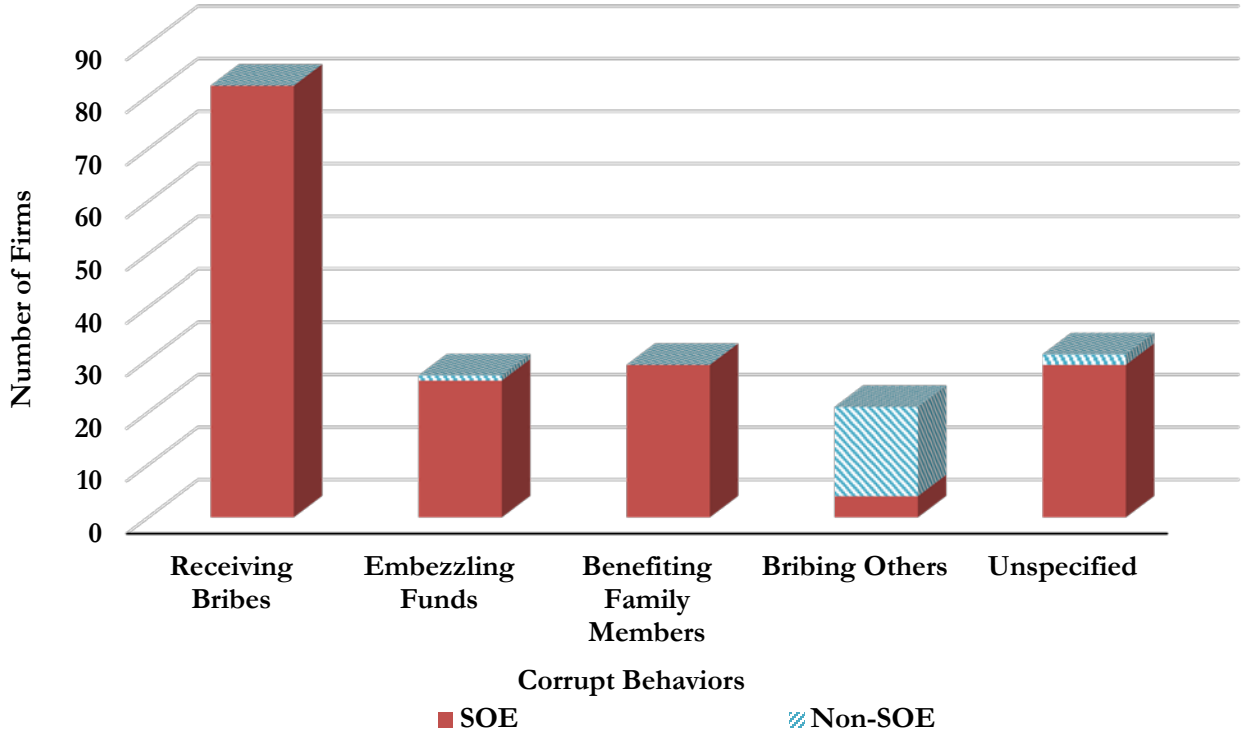
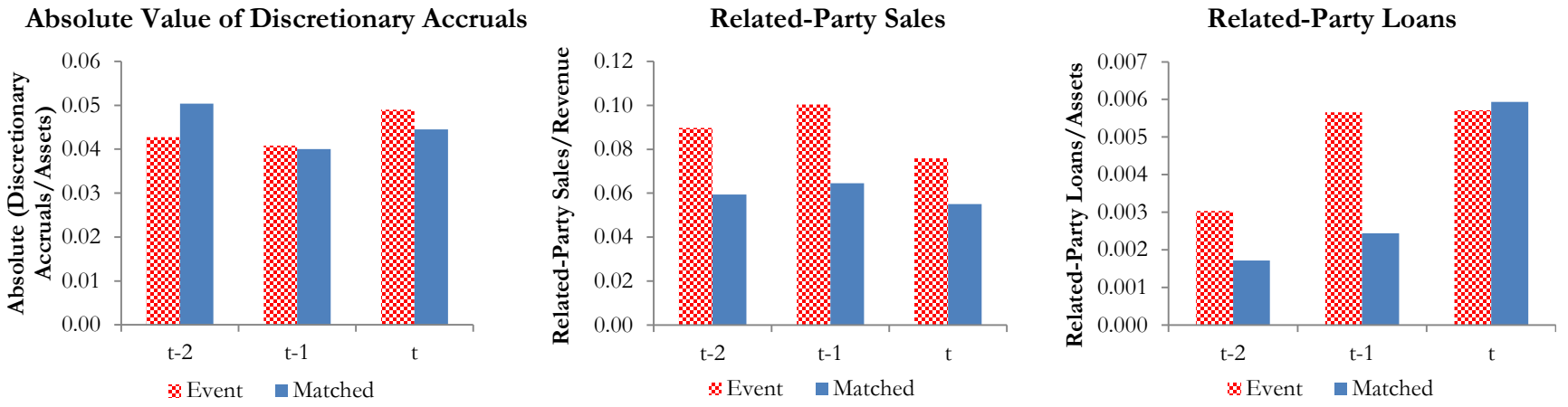


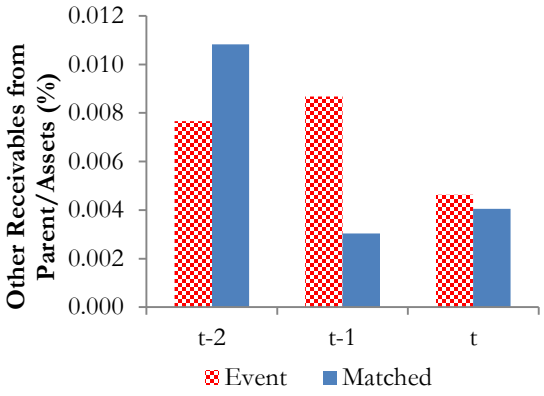
Figure 2

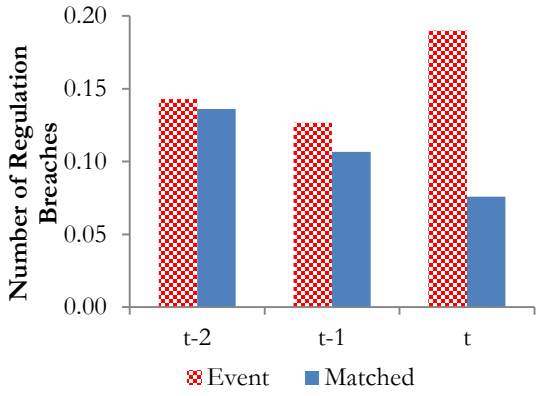
Firm-Level Corruption Measures before Corruption Investigation Events for Event Firms and Matched Firms

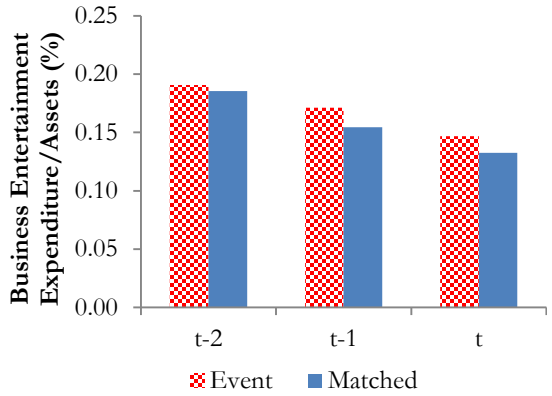
This figure presents nine corruption measures for event firms and matched firms. The sample includes 150 Chinese listed firms with corrupt managers investigated since China's anti-corruption campaign from December 4, 2012 to December 31, 2015. For each event firm, we identify a matched firm by first selecting a subsample of firms satisfying the following conditions: 1) In the same industry as the event firm; 2) Have the same SOE status as the event firm; and 3) Market capitalization is within the range of 50% and 150% of the event firm. We then choose from this subgroup a matched firm that has the closest book-to-market ratio to the event firm. The figure plots the corruption measures in the years t-2, t-1 and t where t is the year of corruption investigation. All Chinese firms' fiscal years end in December so the fiscal year coincides with the calendar year. The firm-level corruption measures include: 1) Absolute value of discretionary accruals, scaled by total assets; 2) Related-party sales, scaled by revenue; 3) Related-party loans, scaled by total assets; 4) Other receivables from parent firm, scaled by total assets; 5) Number of regulation breaches in a year; 6) Business entertainment expenditure, scaled by total assets; 7) Growth of sales minus growth of net income; 8) Profit margin, calculated as net income divided by revenue; and 9) Corruption postings, measured as percentage of posts that discussed corruption in the total posts for a firm on "GuBa" ("Stock Bar" in English), a popular online investor-forum. Growth of sales minus growth of net income, and profit margin are winsorized at 5% and 95% for each year because of the large number of outliers. All the other firm-level corruption measures, except number of regulation breaches and corruption postings, are winsorized at 1% and 99% for each year. We exclude seven financial firms for the following measures: absolute value of discretionary accruals, related-party sales, related-party loans, other receivables from parent firm, growth of sales minus growth of net income, and profit margin.

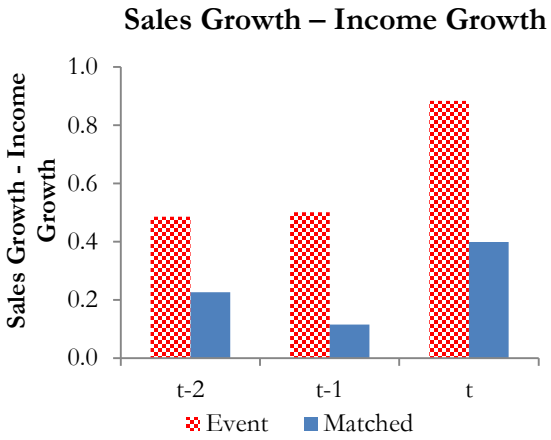


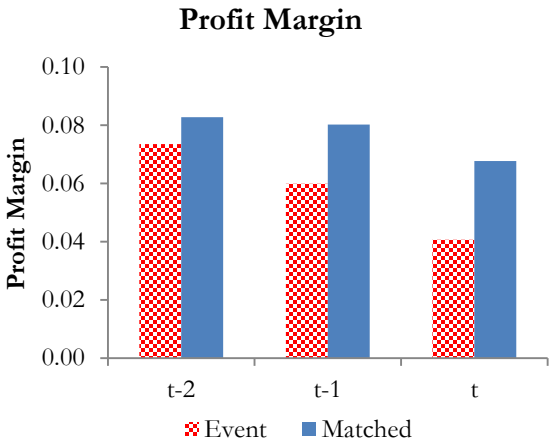
Other Receivables from Parent **Number of Regulation Breaches** **Business Entertainment Expenditure**


Other Receivables from Parent/Assets (%)
0.012
0.010
0.008
0.006
0.004
0.002
0.000
t-2
t-1
t
Event
Matched


Number of Regulation Breaches
0.20
0.15
0.10
0.05
0.00
t-2
t-1
t
Event
Matched


Business Entertainment Expenditure/Assets (%)
0.25
0.20
0.15
0.10
0.05
0.00
t-2
t-1
t
Event
Matched


Sales Growth – Income Growth
Sales Growth - Income Growth
1.0
0.8
0.6
0.4
0.2
0.0
t-2
t-1
t
Event
Matched


Profit Margin
Profit Margin
0.10
0.08
0.06
0.04
0.02
0.00
t-2
t-1
t
Event
Matched

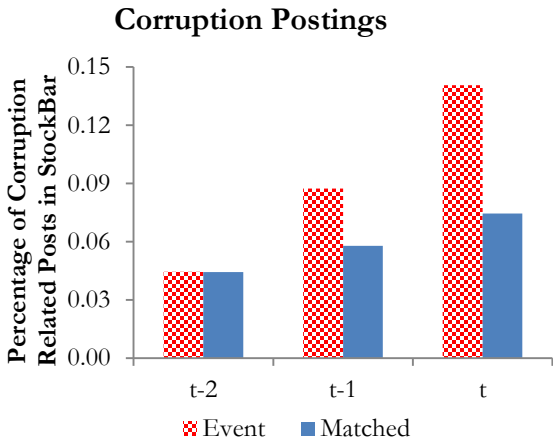
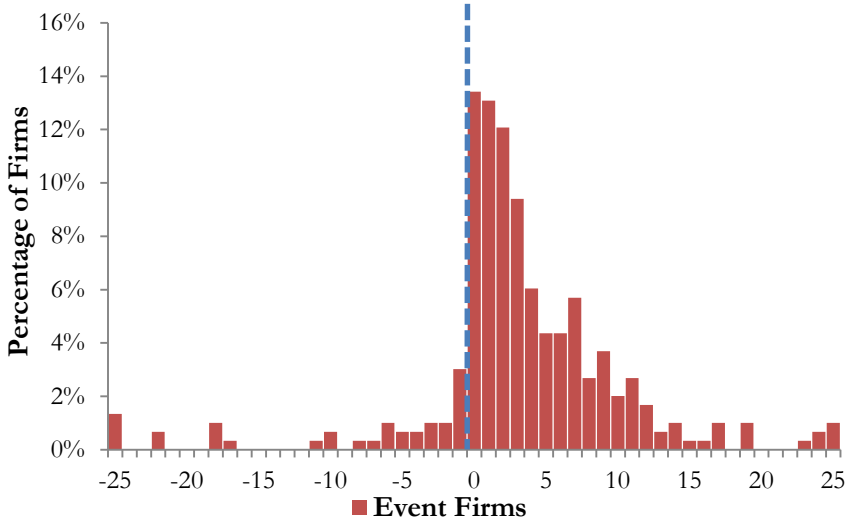

Corruption Postings
Percentage of Corruption Related Posts in StockBar
0.15
0.12
0.09
0.06
0.03
0.00
t-2
t-1
t
Event
Matched

Figure 3
Distribution of Earnings for Event Firms and Matched Firms

This figure plots the distribution of earnings for event firms and matched firms separately. The event firms include 150 listed firms with corrupt managers investigated since China's anti-corruption campaign from December 4, 2012 to December 31, 2015. Earnings is defined as the net income ($NI_{i,t}$) scaled by the market value of equity in the previous year end ($ME_{i,t-1}$). Panel A plots the distribution of earnings for event firms, and the sample includes event firms' two annual earnings announced before the dates of investigation announcements. Panel B plots the distribution of earnings for matched firms. For each event firm, we identify a matched firm by first selecting a subsample of firms satisfying the following conditions: 1) In the same industry as the event firm; 2) Have the same SOE status as the event firm; and 3) Market cap is within the range of 50% and 150% of the event firm. We then choose from this subgroup a matched firm that has the closest book-to-market ratio to the event firm. For matched firms, we also take their two annual earnings announced before the investigation announcements of their corresponding event firms.

Panel A: Earnings Distribution for Event Firms



Panel B: Earnings Distribution for Matched Firms

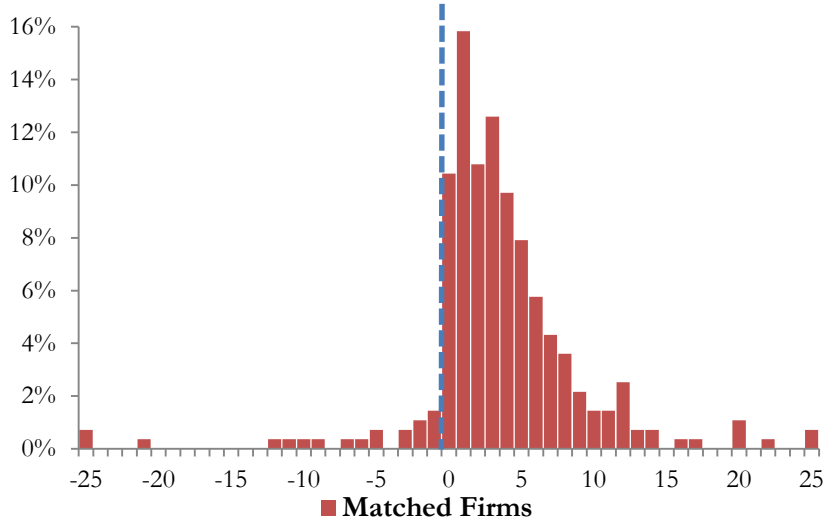
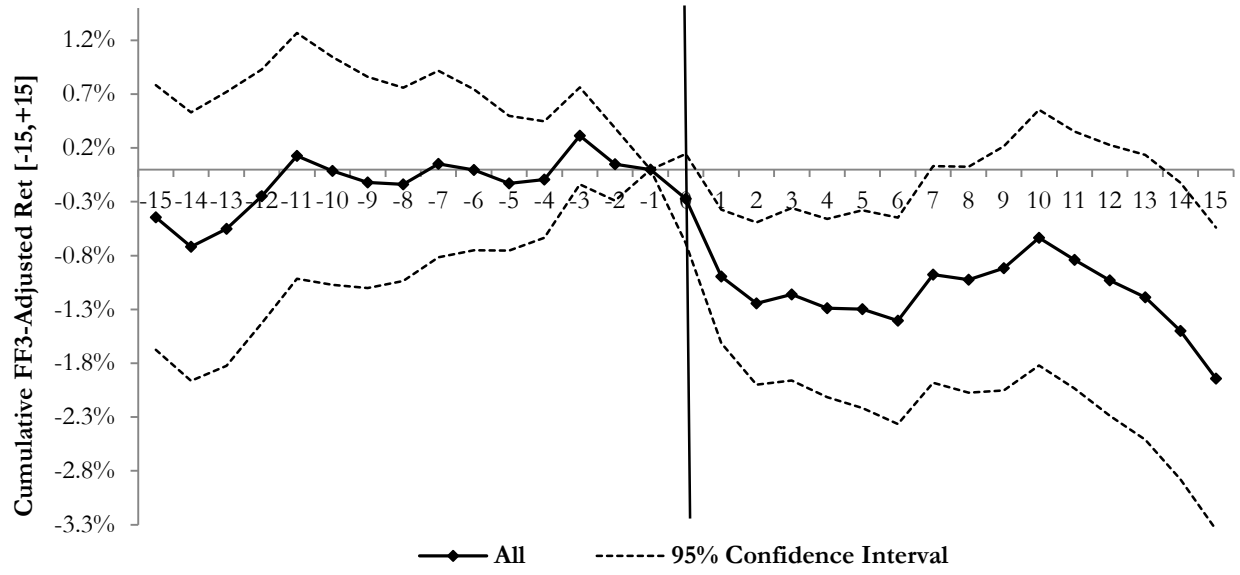


Figure 4
Stock Returns on and after Corruption Investigation Events

This figure plots stock returns of event firms in the short window surrounding the corruption investigation events, and in the long-term window after the events. The event firms include 150 Chinese listed firms with corrupt managers investigated since China's anti-corruption campaign from December 4, 2012 to December 31, 2015. Panel A plots cumulative abnormal return (CAR) for all firms in the [-15,+15] window and the 95% confidence intervals, where day 0 is the date of investigation announcement. Daily abnormal return is constructed using Fama-French three-factor model. Panel B plots long-term buy-and-hold abnormal return in the [-15,+360] window. We first calculate daily abnormal returns using the Fama-French three-factor model and then calculate buy-and-hold abnormal returns for event firms.

Panel A: Cumulative Abnormal Return of Event Firms in the [-15,+15] Window



Panel B: Buy-and-Hold Abnormal Return of Event Firms in the [-15,+360] Window

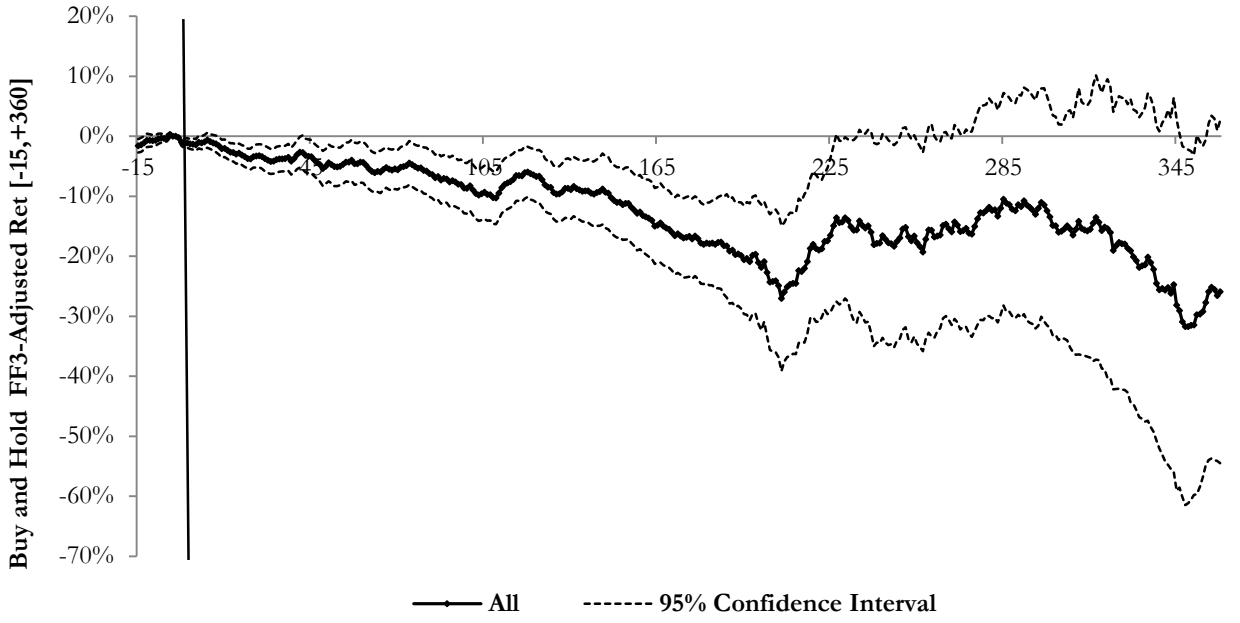
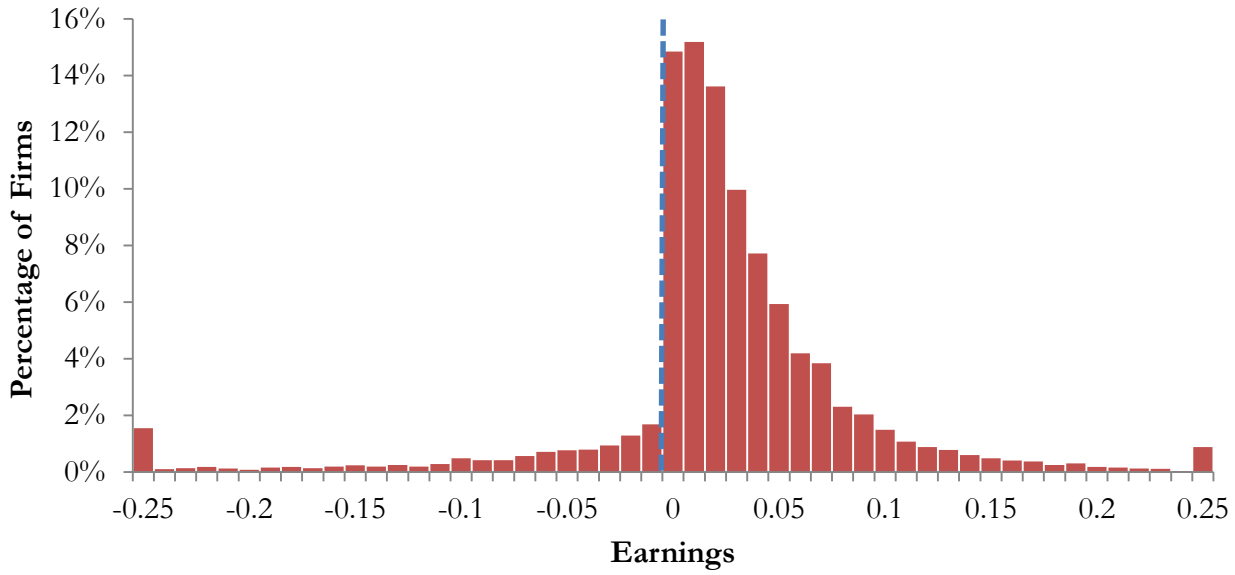


Figure 5

Distribution of Earnings for All Firms before and after Anti-Corruption Campaign Started

This figure plots the distribution of earnings for all Chinese listed firms before and after the start of the anti-corruption campaign on December 4, 2012. The sample includes all firms listed on Shanghai and Shenzhen stock exchanges (A shares), and earnings is defined as the net income ($\mathrm{NI}_{i,t}$) scaled by market value of equity in the previous year end ($\mathrm{ME}_{i,t-1}$). All Chinese firms' fiscal years end in December so the fiscal year coincides with the calendar year. Panel A presents the distribution of earnings for all firms from 2005 to 2011, and Panel B presents the distribution of earnings for all firms from 2013 to 2014. We exclude earnings of 2012 because its indication is not clear: Most of 2012 is before the start of the anti-corruption campaign, but the 2012 earnings figures were composed and announced after the start of the anti-corruption campaign.

Panel A: Distribution of Earnings for All Listed Firms: 2005-2011



Panel B: Distribution of Earnings for All Listed Firms: 2013-2014

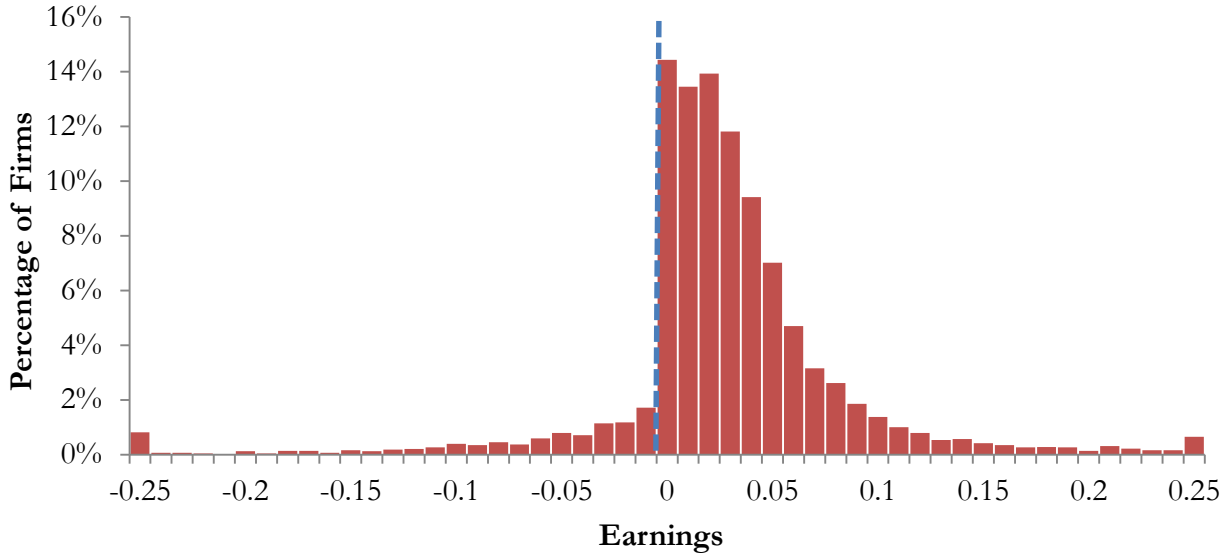
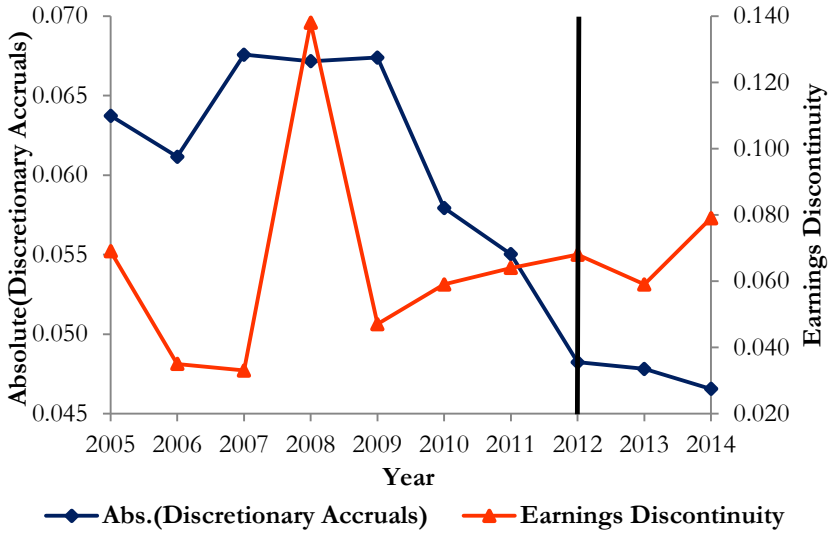


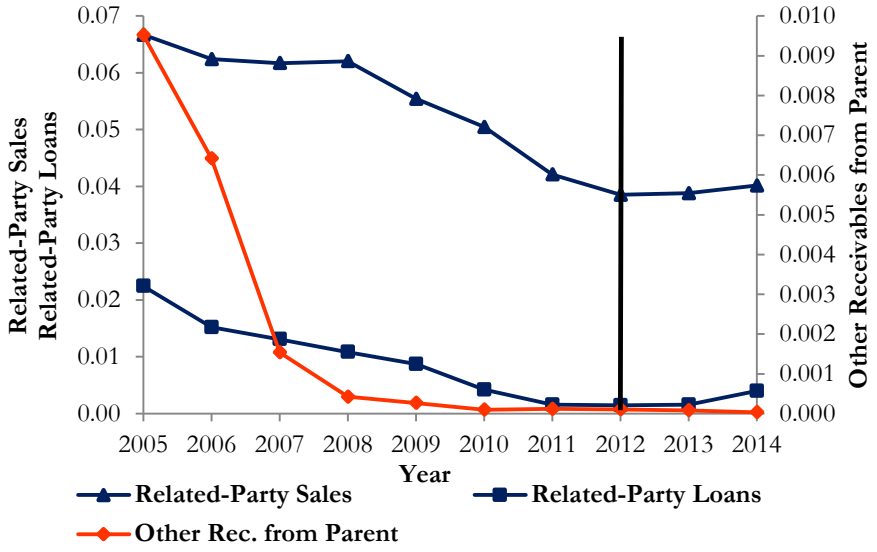
Figure 6
Corruption Measures for All Firms: 2005-2014

This figure plots the annual averages of nine corruption measures for Chinese listed companies from 2005 to 2014. The sample includes all firms listed on Shanghai and Shenzhen stock exchanges (A shares). All Chinese firms' fiscal years end in December so the fiscal year coincides with the calendar year. The corruption measures are grouped into four categories and plotted in four figures. The two measures of accounting manipulation include: 1) Absolute value of discretionary accruals, scaled by total assets; and 2) Earnings discontinuity around zero, measured by the standardized difference of small profit. The three measures of related-party transactions include: 1) Related-party sales, scaled by revenue; 2) Related-party loans, scaled by total assets; and 3) Other receivables from parent firm, scaled by total assets. The two measures of illegal/unethical behaviors include: 1) Number of regulation breaches; and 2) Business entertainment expenditure, scaled by total assets. The two measures of profitability include: 1) Growth of sales minus growth of net income; and 2) Profit margin, calculated as net income divided by revenue. Growth of sales minus growth of net income, and profit margin are winsorized at 5% and 95% for each year because of the large number of outliers. All the other firm-level corruption measures, except number of regulation breaches, are winsorized at 1% and 99% for each year. We exclude financial companies for six measures: absolute value of discretionary accruals, related-party sales, related-party loans, other receivables from parent firm, growth of sales minus growth of net income, and profit margin.

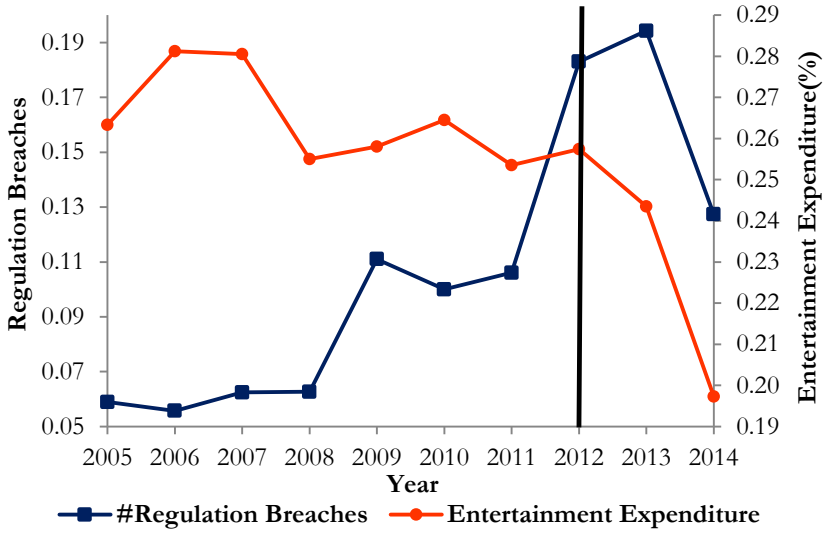
Panel A: Accounting Manipulation



Panel B: Related-Party Transactions



Panel C: Regulation Breaches & Entertainment Expenditure



Panel D: Profitability

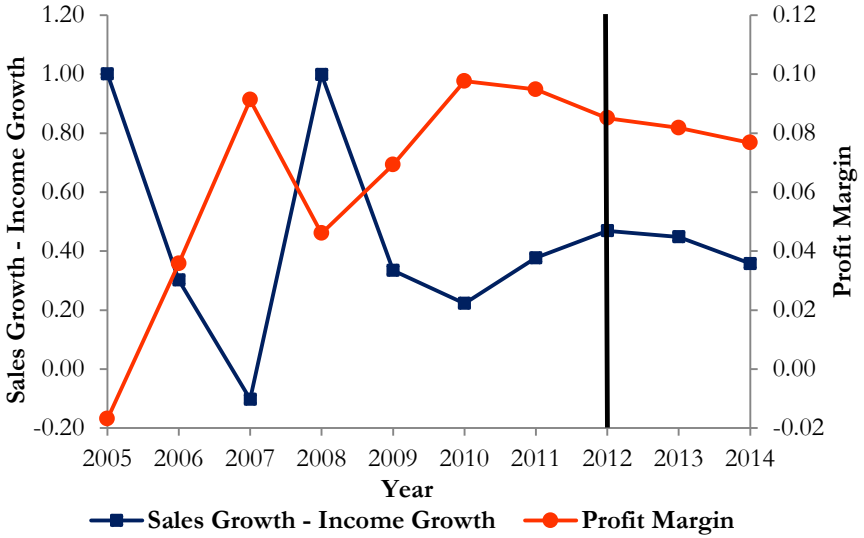


Figure 7

Stock Return Volatilities around Earnings Announcements for All Firms: 2005-2014

This figure plots stock return volatilities around earnings announcements for all Chinese listed firms from 2005 to 2014. The sample includes announcements of annual earnings for all firms listed on Shanghai and Shenzhen stock exchanges (A shares). All Chinese firms' fiscal years end in December so the fiscal year coincides with the calendar year. We first define a firm's stock return volatility in a window as the mean of absolute daily abnormal return (in excess of market return) in this window. We then calculate the normalized volatility for an earnings announcement as the return volatility during the 4-day window [-1,+2] divided by the average of return volatilities during the [-56,-2] window (55 days before the announcement window) and the [+3,+57] window (55 days after the announcement window), then minus one. Day 0 refers to the earnings announcement day. Differenced volatility for an earnings announcement is the return volatility during the 4-day window [-1,+2] minus the average of return volatilities during the [-56,-2] window and the [+3,+57] window. We require at least 4 days of consecutive trading around an earnings announcement to calculate the volatility measures. We first calculate normalized volatility and differenced volatility for each firm, and then plot the annual averages. Differenced volatility is measured in percentage to ease reading.

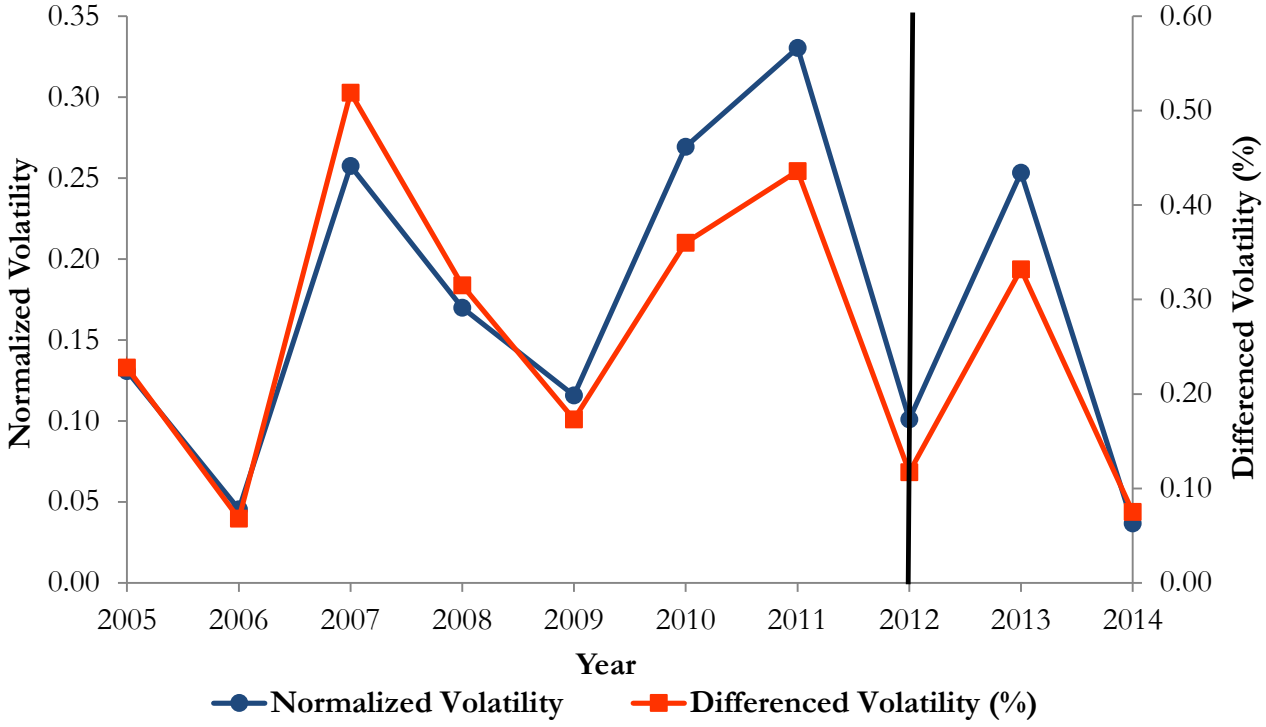


Table 1
Distribution of Corruption Investigation Events

This table presents the distribution of 150 sample firms with corrupt managers investigated during China's anti-corruption campaign. The sample period starts from the beginning of the anti-corruption campaign on December 4, 2012 to December 31, 2015. Panel A presents the distribution of sample firms across year, and distribution of positions of corrupt managers. The corrupt managers in the sample are CEOs, other top managers who also serve as internal directors, and top managers of parent company. Panel B presents the distribution of specific corrupt behaviors for state-owned enterprises (SOEs) and non-SOEs separately. These corrupt behaviors are the most common ones among sample firms, and they are not mutually exclusive.

Panel A: Characteristics of Event Firms			
Categories of Event Firms	**# Firms**	**# SOEs**	**# Non-SOEs**
Year of Events			
2012	1	1	0
2013	28	23	5
2014	50	42	8
2015	71	64	7
Positions of Corrupt Managers			
CEO/Chairman	67	49	18
Other Top Managers	25	23	2
Managers of Parent Firms	58	58	0
Total #Firms	150	130	20
Panel B: Distribution of Specific Corrupt Behaviors			
Main Corrupt Behaviors	**# Firms**	**# SOEs**	**# Non-SOEs**
Receiving Bribes	82	82	0
Embezzling Company Funds	26	25	1
Illegally Benefiting Family Members	29	29	0
Bribing Others	21	4	17
Unspecified	31	29	2
Total #Firms	150	130	20

Table 2
Corruption Measures for Event Firms before Corruption Investigations

This table presents corruption measures for event firms in the years before corruption investigations. The sample includes 150 Chinese listed firms with corrupt managers investigated since China's anti-corruption campaign from December 4, 2012 to December 31, 2015. All Chinese firms' fiscal years end in December so their fiscal year coincides with the calendar year. For each event firm, we identify a matched firm by first selecting a subsample of firms satisfying the following conditions: 1) In the same industry as the event firm; 2) Have the same SOE status as the event firm; and 3) Market cap is within the range of 50% and 150% of the event firm. We then choose from this subgroup a matched firm that has the closest book-to-market ratio to the event firm. The table presents the corruption measures in the years t-2, t-1, and t, where t is the year of corruption investigation. The firm-level corruption measures include: 1) Absolute value of discretionary accruals, scaled by total assets; 2) Related-party sales, scaled by revenue; 3) Related-party loans, scaled by total assets; 4) Other receivables from parent firm, scaled by total assets; 5) Number of regulation breaches in a year; 6) Business entertainment expenditure, scaled by total assets; 7) Growth of sales minus growth of net income; 8) Profit margin, calculated as net income divided by revenue; and 9) Corruption postings, measured as percentage of posts that discussed corruption in the total posts for a firm on "Guba" ("Stock Bar" in English), a popular online investor-forum. Growth of sales minus growth of net income, and profit margin are winsorized at 5% and 95% for each year because of the large number of outliers. All the other firm-level corruption measures, except number of regulation breaches and corruption postings, are winsorized at the 1% and 99% levels for each year. We exclude seven financial companies for six measures: absolute value of discretionary accruals, related-party sales, related-party loans, other receivables from parent firm, growth of sales minus growth of net income, and profit margin. T-statistics associated with the differences in corruption measures between event firms and matched firms are also reported.

	Years with respect to Event Year		
	t-2	t-1	t
Absolute Value of Discretionary Accruals			
Event Firm	0.043	0.041	0.049
Matched Firm	0.050	0.040	0.045
Diff.	-0.008	0.001	0.004
t-stat	(-1.45)	(0.19)	(0.54)
Related-Party Sales			
Event Firm	0.090	0.100	0.076
Matched Firm	0.059	0.065	0.055
Diff.	**0.030**	**0.036**	0.021
t-stat	**(1.79)**	**(2.03)**	(0.93)
Related-Party Loans			
Event Firm	0.003	0.006	0.006
Matched Firm	0.002	0.002	0.006
Diff.	0.001	0.003	0.000
t-stat	(1.09)	(1.58)	(-0.07)
Other Receivables from Parent (%)			
Event Firm	0.008	0.009	0.005
Matched Firm	0.011	0.003	0.004
Diff.	-0.003	0.006	0.001
t-stat	(-0.85)	(1.45)	(0.18)

	Years with respect to Event Year		
	t-2	t-1	t
# Regulation Breaches			
Event Firm	0.143	0.127	0.190
Matched Firm	0.136	0.107	0.076
Diff.	0.007	0.020	**0.114**
t-stat	(0.13)	(0.54)	**(1.83)**
Business Entertainment Expenditure (%)			
Event Firm	0.191	0.171	0.147
Matched Firm	0.186	0.155	0.133
Diff.	0.005	0.017	0.014
t-stat	(0.23)	(0.42)	(0.37)
Sales Growth - Income Growth			
Event Firm	0.486	0.501	0.883
Matched Firm	0.227	0.116	0.399
Diff.	**0.259**	**0.385**	**0.485**
t-stat	**(1.85)**	**(2.42)**	**(1.74)**
Profit Margin			
Event Firm	0.074	0.060	0.041
Matched Firm	0.083	0.080	0.068
Diff.	-0.009	**-0.020**	**-0.027**
t-stat	(-0.92)	**(-2.02)**	**(-2.03)**
Corruption Postings			
Event Firm	0.045	0.087	0.141
Matched Firm	0.044	0.058	0.075
Diff.	0.000	**0.030**	**0.066**
t-stat	(0.02)	**(3.12)**	**(3.73)**

Table 3

Corruption Measures for Event Firms before Corruption Investigations: Subsample Analysis

This table presents the difference in corruption measures between event firms and matched firms for the subsamples of state-owned enterprises (SOEs) and non-SOEs. The event firms include 150 Chinese listed firms with corrupt managers investigated since China's anti-corruption campaign from December 4, 2012 to December 31, 2015. All Chinese firms' fiscal years end in December so the fiscal year coincides with the calendar year. For each event firm, we identify a matched firm by first selecting a subsample of firms satisfying the following conditions: 1) In the same industry as event firm; 2) Have the same SOE status as event firm; and 3) Market cap is within the range of 50% and 150% of the event firm. We then choose from this subgroup a matched firm that has the closest book-to-market ratio to the event firm. The table presents the differences of corruption measures between event firms and matched firms in the year t-2, t-1, and t, where t is the year of corruption investigation. The firm-level corruption measures include: 1) Absolute value of discretionary accruals, scaled by total assets; 2) Related-party sales, scaled by revenue; 3) Related-party loans, scaled by total assets; 4) Other receivables from parent firm, scaled by total assets; 5) Number of regulation breaches in a year; 6) Business entertainment expenditure, scaled by total assets; 7) Growth of sales minus growth of net income; 8) Profit margin, calculated as net income divided by revenue; and 9) Corruption postings, measured as percentage of posts that discussed corruption in the total posts for a firm on "GuBa" ("Stock Bar" in English), a popular online investor-forum. Growth of sales minus growth of net income, and profit margin are winsorized at 5% and 95% for each year because of the large number of outliers. All the other firm-level corruption measures, except number of regulation breaches and corruption postings, are winsorized at 1% and 99% for each year. We exclude seven financial companies for six measures: absolute value of discretionary accruals, related-party sales, related-party loans, other receivables from parent firm, growth of sales minus growth of net income, and profit margin. T-statistics associated with the corruption measures are also reported.

	Corruption Measures: Event Firm – Matched Firm					
	SOEs (N=130)			**Non-SOEs (N=20)**		
Measure	t-2	t-1	t	t-2	t-1	t
Abs. Discretionary Accruals	-0.007	0.001	0.002	-0.016	0.000	0.018
	(-1.18)	(0.20)	(0.17)	(-0.91)	(-0.05)	(1.16)
Related-Party Sales	**0.045**	**0.049**	0.027	-0.074	-0.050	-0.010
	(2.53)	**(2.56)**	(1.06)	(-1.41)	(-1.19)	(-0.25)
Related-Party Loans	0.001	0.003	0.000	0.000	0.004	-0.003
	(1.09)	(1.36)	(0.11)	(0.91)	(0.96)	(-0.68)
Other Rec. from Parent (%)	-0.004	0.006	0.001	0.000	0.002	0.000
	(-0.83)	(1.38)	(0.17)	(-0.74)	(0.68)	(1.00)
# Regulation Breaches	0.016	0.031	0.091	-0.056	-0.050	**0.231**
	(0.26)	(0.75)	(1.29)	(-0.44)	(-0.57)	**(1.90)**
Bus. & Ent. Expenditure (%)	0.002	0.016	-0.005	0.016	0.019	0.103
	(0.08)	(0.37)	(-0.21)	(0.36)	(0.20)	(0.54)
Sales Growth - Income Growth	0.233	**0.393**	**0.595**	**0.440**	0.331	-0.049
	(1.48)	**(2.29)**	**(1.96)**	**(2.13)**	(0.76)	(-0.07)
Profit Margin	-0.010	**-0.021**	**-0.030**	-0.005	-0.013	-0.014
	(-0.94)	**(-1.87)**	**(-1.95)**	(-0.14)	(-0.99)	(-0.54)
Corruption Postings	-0.001	**0.030**	**0.067**	0.006	0.024	**0.061**
	(-0.06)	**(2.85)**	**(3.28)**	(0.47)	(1.45)	**(2.04)**

Table 4
Probit Regressions of Corruption Investigation on Corruption Measures

This table presents probit regressions of corruption investigation on corruption measures. The sample includes Chinese listed firms with corrupt managers investigated since China's anti-corruption campaign from December 4, 2012 to December 31, 2015, as well as their matched firms. For each event firm, we identify a matched firm by first selecting a subsample of firms satisfying the following conditions: 1) In the same industry as the event firm; 2) Have the same SOE status as the event firm; and 3) Market cap is within the range of 50% and 150% of the event firm. We then choose from this subgroup a matched firm that has the closest book-to-market ratio to the event firm. The dependent variable is a dummy variable that equals one if the firm was investigated (event firm), and zero if the firm was not investigated (matched firm). The major independent variables are firm-level corruption measures of the year prior to corruption investigation (year t-1), including: 1) Absolute value of discretionary accruals, scaled by total assets; 2) Related-party sales, scaled by revenue; 3) Related-party loans, scaled by total assets; 4) Other receivables from parent firm, scaled by total assets; 5) Number of regulation breaches in a year; 6) Business entertainment expenditure, scaled by total assets; 7) Growth of sales minus growth of net income; 8) Profit margin, calculated as net income divided by revenue; and 9) Corruption postings, measured as percentage of posts that discussed corruption in the total posts for a firm on "GuBa" ("Stock Bar" in English), a popular online investor-forum. The regressions also control for firm characteristics including natural log of market capitalization, a dummy variable for state-owned enterprises (SOE), and two dummy variables for firms located in medium- and high-corruption provinces. High-corruption (medium-corruption) provinces refer to those in the top (medium) tercile of the provincial corruption index constructed in Ang, Bai and Zhou (2015). All Chinese firms' fiscal years end in December so the fiscal year coincides with the calendar year. We exclude seven event firms in the finance industry and their matched firms for the models using six measures: absolute value of discretionary accruals, related-party sales, related-party loans, other receivables from parent firm, growth of sales minus growth of net income, and profit margin. All models include year fixed effects, and t-statistics associated with coefficients are reported in the parentheses. The coefficients on other receivables and business entertainment expenditure are divided by 1,000 to ease reading. ***, **, and * represent statistical significance at the 0.01, 0.05, and 0.10 levels.

	Dependent Variable: Dummy of Corruption Investigation						
Independent Variables (t-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Abs. (Discretionary Accrual)	0.566					1.179	0.726
	(0.28)					(0.44)	(0.35)
Related-Party Sales		**1.020****				**1.176***	**1.011***
		(1.99)				**(1.84)**	**(1.91)**
Related-Party Loans		**9.769****				**9.951***	**10.609****
		(2.01)				**(1.88)**	**(2.14)**
Other Receivables from Parent		0.672				**1.334***	0.686
		(1.42)				**(1.73)**	(1.34)
# Regulation Breaches			0.038			-0.060	0.080
			(0.16)			(-0.24)	(0.37)
Bus. Ent. Expenditure			-0.026			-0.028	
			(-0.52)			(-0.51)	
Sales Growth - Income Growth				**0.251****		**0.315****	**0.256****
				(2.50)		**(2.32)**	**(2.43)**
Profit Margin				-0.413		-0.125	-0.626
				(-0.46)		(-0.10)	(-0.68)
Corruption Postings					**1.878****	1.332	**1.827****
					(2.19)	(1.12)	**(2.03)**
Ln(ME)	**0.137***	**0.141****	0.108	**0.156****	0.086	**0.195***	**0.138***
	(1.92)	**(1.96)**	(1.15)	**(2.15)**	(1.33)	**(1.73)**	**(1.80)**
SOE Dummy	-0.089	-0.156	0.098	-0.143	-0.133	-0.226	-0.317
	(-0.38)	(-0.67)	(0.37)	(-0.60)	(-0.59)	(-0.77)	(-1.29)
Provincial Corruption: Medium	0.121	0.175	0.092	0.153	0.093	0.125	0.185
	(0.64)	(0.91)	(0.39)	(0.79)	(0.50)	(0.51)	(0.93)
Provincial Corruption: High	**0.370***	**0.446****	0.377	**0.394***	0.289	**0.469***	**0.382***
	(1.76)	**(2.09)**	(1.56)	**(1.85)**	(1.38)	**(1.80)**	**(1.72)**
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# Obs	283	286	197	283	300	190	283

Table 5

Probit Regressions of Corruption Investigation on Political Connection Measures

This table presents probit regressions of corruption investigation on political connection measures. The sample includes Chinese listed firms with corrupt managers investigated since China's anti-corruption campaign from December 4, 2012 to December 31, 2015, as well as their matched firms. For each event firm, we identify a matched firm by first selecting a subsample of firms satisfying the following conditions: 1) In the same industry as the event firm; 2) Have the same SOE status as the event firm; and 3) Market cap is within the range of 50% and 150% of the event firm. We then choose from this subgroup a matched firm that has the closest book-to-market ratio to the event firm. The dependent variable is a dummy variable that equals one if the firm was investigated (event firm), and zero if the firm was not investigated (matched firm). In Panel A, the major independent variables are two firm-level political connection measures of the year prior to the corruption investigation (year t-1): 1) Government connection, which is a dummy variable that equals to one if a C-Suite executive of the company previously served as high-ranked government official; 2) University affiliation, which is a dummy variable that equals to one if a C-Suite executive of the company graduated from the same university as one of the seven members of the Politburo Standing Committee (PSC) of CPC's Central Committee. When the investigated manager for an event firm is from the parent company, we construct the connection measures using managers of the parent company. Some models control for the firm-level corruption measures of the year prior to corruption investigation (year t-1), including: 1) Absolute value of discretionary accruals, scaled by total assets; 2) Related-party sales, scaled by revenue; 3) Related-party loans, scaled by total assets; 4) Other receivables from parent firm, scaled by total assets; 5) Number of regulation breaches in a year; 6) Growth of sales minus growth of net income; 7) Profit margin, calculated as net income divided by revenue; and 8) Corruption postings, measured as percentage of posts that discussed corruption in the total posts for a firm on Guba ("Stock Bar"), a popular online investor-forum. All the regressions include control variables of firm characteristics including natural log of market capitalization, a dummy variable for state-owned enterprises (SOE), and two dummy variables for firms located in medium- and high-corruption provinces. High-corruption (medium-corruption) provinces refer to those in the top (medium) tercile of the provincial corruption index constructed in Ang, Bai and Zhou (2015). The coefficients on these control variables are not reported for brevity. Panel B is similar to Panel A except that we use two alternative measures of university affiliation: 1) University Affiliation: # Connected Managers, which counts the number of C-Suite managers who went to the same University as one of the seven members of PSC. 2) University Affiliation with Past Leaders: similar to the original university affiliation measure but using the five members of the *previous* PSC who went to different schools from the current PSC members. Some regressions in Panel B include the corruption measures used in Panel A and their coefficients are not reported for brevity. All Chinese firms' fiscal years end in December so the fiscal year coincides with the calendar year. We exclude seven event firms in the finance industry and their matched for the models using six measures: absolute value of discretionary accruals, related-party sales, related-party loans, other receivables from parent firm, growth of sales minus growth of net income, and profit margin. All models include year fixed effects, and t-statistics associated with coefficients are reported in the parentheses. The coefficients on other receivables are divided by 1,000 to ease reading. ***, **, and * represent statistical significance at the 0.01, 0.05, and 0.10 levels.

Dependent Variable: Dummy of Corruption Investigation				
Panel A: Regressions on Political Connection Measures				
Independent Variables (t-1)	(1)	(2)	(3)	(4)
Government Connection	**0.733*** (4.33)**		**0.704*** (4.13)**	**0.757*** (4.00)**
University Affiliation		**-0.737*** (-3.10)**	**-0.683*** (-2.82)**	**-1.126*** (-3.96)**
Abs. (Discretionary Accrual)				-0.398 (-0.18)
Related-Party Sales				0.737 (1.33)
Related-Party Loans				**13.411** (2.28)**
Other Receivables from Parent				0.951 (1.59)
# Regulation Breaches				0.098 (0.44)
Sales Growth - Income Growth				**0.216* (1.93)**
Profit Margin				-1.256 (-1.31)
Corruption Postings				**2.693*** (2.82)**
Controls	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes
# Obs	300	300	300	283

Panel B: Regressions on Political Connection Measures: Alternative Measures of University Affiliation				
Independent Variables (t-1)	(1)	(2)	(3)	(4)
University Affiliation: # Connected Managers	**-0.348*** (-2.66)**	**-0.510*** (-3.46)**		
University Affiliation with Past Leaders			**1.253*** (2.98)**	**1.490*** (2.59)**
Government Connection		**0.799*** (4.24)**		**0.782*** (4.11)**
Corruption Measures	No	Yes	No	Yes
Controls	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes
# Obs	300	283	300	283

Table 6

Stock Returns of Event Firms on and after Corruption Investigation Events

This table presents event firms' short-term returns around corruption investigation events and long-term returns after events. The event firms include 150 Chinese listed firms with corrupt managers investigated since China's anti-corruption campaign from December 4, 2012 to December 31, 2015. The short-term returns include cumulative abnormal returns (CARs) for all firms in the [-1,+1] and the [-1,+15] windows, where day 0 is the date of investigation announcement. Daily abnormal return is constructed using one of the three approaches: 1) Daily return in excess of market return; 2) Size-adjusted return by subtracting return of the firm's size decile portfolio; 3) Fama-French three-factor model. The long-term returns include buy-and-hold abnormal returns (BHARs) in the [-15,+90], the [-15,+180], and the [-15,+360] windows. We first calculate daily abnormal returns using one of the three approaches above, and then calculate buy-and-hold abnormal returns for the corresponding windows. T-statistics associated with returns are also reported.

	Market-Adj. Ret.		**Size-Adj. Ret.**		**FF3-Adj. Ret.**	
	Return	t-stat	Return	t-stat	Return	t-stat
CAR [-1,+1]	**-1.13%**	**(-2.14)**	-0.67%	(-1.37)	**-1.01%**	**(-2.06)**
CAR [-1, +15]	-0.84%	(-0.95)	**-2.02%**	**(-2.48)**	**-1.88%**	**(-2.12)**
BHAR [-15, +90]	-1.09%	(-0.44)	**-7.54%**	**(-3.12)**	**-9.68%**	**(-3.14)**
BHAR [-15,+180]	**-7.40%**	**(-3.13)**	**-7.81%**	**(-6.27)**	**-21.94%**	**(-3.93)**
BHAR [-15,+360]	-1.02%	(-0.26)	**-17.48%**	**(-3.91)**	**-19.24%**	**(-2.26)**

Table 7

Change in Corruption Measures for Event Firms after Corruption Investigations

This table presents changes in corruption measures for event firms after corruption investigations. The initial sample includes 150 Chinese listed firms with corrupt managers investigated since China's anti-corruption campaign from December 4, 2012 to December 31, 2015. We further require firms to have corresponding measures available for both years t-1 and t+1, where year t is the year of corruption investigation. Since accounting data are available through 2014, only some of the event firms are included in the samples. All Chinese firms' fiscal years end in December so the fiscal year coincides with the calendar year. For each event firm, we identify a matched firm by first selecting a subsample of firms satisfying the following conditions: 1) In the same industry as the event firm; 2) Have the same SOE status as the event firm; and 3) Market cap is within the range of 50% and 150% of the event firm. We then choose from this subgroup a matched firm that has the closest book-to-market ratio to the event firm. We report differences of corruption measures between event firms and matched firms for years t-1 and t+1, and then the difference-in-difference. The firm-level corruption measures include: 1) Absolute value of discretionary accruals, scaled by total assets; 2) Related-party sales, scaled by revenue; 3) Related-party loans, scaled by total assets; 4) Other receivables from parent firm, scaled by total assets; 5) Number of regulation breaches in a year; 6) Business entertainment expenditure, scaled by total assets; 7) Growth of sales minus growth of net income; 8) Profit margin, calculated as net income divided by revenue; and 9) Corruption postings, measured as percentage of posts that discussed corruption in the total posts for a firm on "Guba" ("Stock Bar" in English), a popular online investor-forum. In addition to the firm-level corruption measures, we also report the differences in normalized return volatility around earnings announcements and two earnings discontinuity measures, namely, differences of small profit and differences of small loss. For these three variables, the values of t-1 are calculated using two annual earnings announced before the event dates of corruption investigations, and the values of t+1 are calculated using two earnings after the event dates. Related-party loans, other receivables, and business entertainment expenditure are expressed in percentages to ease reading. T-statistics associated with difference-in-difference are also reported.

	Diff. (Event Firm – Matched Firm)				
Measures	**t-1**	**t+1**	**diff-in-diff.**	**t-stat**	**#Obs**
Abs. (DACC)	0.019	0.034	0.015	(1.14)	27
Related-Party Sales	0.013	-0.006	-0.020	(-1.12)	28
Related-Party Loans (%)	-0.138	0.091	0.229	(0.45)	28
Regulation Breaches	-0.071	0.000	0.071	(0.43)	28
Other Receivables (%)	0.005	0.002	-0.003	(-0.32)	28
Bus. Ent. Expenditure (%)	0.005	0.078	**0.073**	**(1.71)**	9
Sales Growth - Income growth	0.468	0.412	-0.056	(-0.12)	27
Profit Margin	-0.038	-0.046	-0.008	(-0.31)	28
Corruption Postings	0.014	0.042	0.028	(1.00)	28
Normalized Volatility	-0.173	-0.170	0.003	(0.01)	24
Discontinuity: Small Profit	0.043	-0.031	-0.074	(-1.18)	298
Discontinuity: Small Loss	-0.002	0.010	0.012	(0.27)	139

Table 8
Earnings Discontinuity around Zero for All Firms: 2005-2014

This table reports annual earnings discontinuity around zero for all Chinese listed firms from 2005 to 2014 and the difference between 2011 (before anti-corruption campaign) and 2013-2014 (after the start of anti-corruption campaign). The sample includes all firms listed on Shanghai and Shenzhen stock exchanges (A shares). All Chinese firms' fiscal years end in December so the fiscal year coincides with the calendar year. The statistics reported are annual standardized differences of small profit (small loss), which measures discontinuity of earnings distribution and tests the hypothesis that the actual number of observations in the intervals just above (below) zero earnings are greater than (smaller than) expected. Earnings is calculated as net income ($NI_{i,t}$) scaled by market value of equity at the previous year end ($ME_{i,t-1}$). Measures of year t are calculated to earnings of fiscal year t. We also report results for the subsample of firms with one-year loss (negative net income in the previous year). T-statistics associated with differences are also reported.

Year	Small Profit	t-stat	Small Loss	t-stat
Sample: All Firms				
2005	0.069	(5.94)	-0.055	(-7.03)
2006	0.035	(3.46)	-0.037	(-5.70)
2007	0.033	(3.56)	-0.034	(-5.76)
2008	0.138	(9.80)	-0.123	(-12.36)
2009	0.047	(5.07)	-0.039	(-6.25)
2010	0.059	(5.01)	-0.070	(-9.01)
2011	0.064	(5.69)	-0.078	(-10.44)
2012	0.068	(7.53)	-0.063	(-10.14)
2013	0.059	(6.89)	-0.054	(-9.49)
2014	0.079	(8.53)	-0.068	(-10.78)
2013~2014 - 2011 Diff.	0.004	(0.35)	0.017	(1.93)
Sample: Firms with One-Year Loss				
2011	0.274	(4.64)	-0.143	(-2.81)
2013-2014	0.274	(9.09)	-0.138	(-5.78)
Diff.	0.000	(0.00)	0.005	(0.08)

Table 9
Corruption Measures for All Firms: 2005-2014

This table presents annual averages of corruption measures for all Chinese listed firms from 2005 to 2014. The sample includes all firms listed on Shanghai and Shenzhen stock exchanges (A shares). All Chinese firms' fiscal years end in December so the fiscal year coincides with the calendar year. The firm-level corruption measures include: 1) Absolute value of discretionary accruals, scaled by total assets; 2) Related-party sales, scaled by revenue; 3) Related-party loans, scaled by total assets; 4) Other receivables from parent firm, scaled by total assets; 5) Number of regulation breaches in a year; 6) Business entertainment expenditure, scaled by total assets; 7) Growth of sales minus growth of net income; 8) Profit margin, calculated as net income divided by revenue; and 9) Corruption postings, measured as percentage of posts that discussed corruption in the total posts for a firm on "GuBa" ("Stock Bar" in English), a popular online investor-forum. Growth of sales minus growth of net income, and profit margin are winsorized at 5% and 95% for each year because of the large number of outliers. All the other firm-level corruption measures, except number of regulation breaches and corruption postings, are winsorized at 1% and 99% for each year. We exclude financial firms for six measures: absolute value of discretionary accruals, related-party sales, related-party loans, other receivables from parent firm, growth of sales minus growth of net income, and profit margin. We also report differences between 2011 (before anti-corruption campaign) and the average of 2013-2014 (after the start of anti-corruption campaign), as well as the associated t-statistics. %Diff. refers to the percentage change from before the anti-corruption campaign (2011).

	Corruption Measures							
Year	**Abs. (DACC)**	**Related Sales**	**Related Loans (%)**	**Other Receivable (%)**	**Regulation Breaches**	**Entertain Exp. (%)**	**Sales Growth - Income Growth**	**Profit Margin**
2005	0.064	0.067	2.243	0.952	0.059	0.263	1.001	-0.017
2006	0.061	0.062	1.519	0.642	0.056	0.281	0.302	0.036
2007	0.068	0.062	1.308	0.154	0.062	0.281	-0.102	0.091
2008	0.067	0.062	1.081	0.042	0.063	0.255	0.999	0.046
2009	0.067	0.055	0.872	0.027	0.111	0.258	0.335	0.069
2010	0.058	0.050	0.420	0.010	0.100	0.265	0.222	0.098
2011	0.055	0.042	0.156	0.012	0.106	0.254	0.377	0.095
2012	0.048	0.039	0.144	0.011	0.183	0.257	0.469	0.085
2013	0.048	0.039	0.155	0.008	0.194	0.244	0.448	0.082
2014	0.047	0.040	0.399	0.003	0.127	0.197	0.357	0.077
2013~2014 - 2011 Diff.	**-0.008**	-0.003	**0.121**	**-0.006**	**0.055**	**-0.033**	0.026	**-0.016**
t-stat	**(-5.76)**	(-0.93)	**(3.66)**	**(-4.02)**	**(4.58)**	**(-3.95)**	(0.61)	**(-5.95)**
% Diff.	-14.24%	-6.23%	78.10%	-51.97%	51.56%	-13.06%	6.79%	-16.38%

Table 10

Return Volatilities around Earnings Announcements for All Firms: 2005-2014

This table presents volatility measures around earnings announcements for all Chinese listed firms from 2005 to 2014. The sample includes annual earnings announcements of all firms listed on Shanghai and Shenzhen stock exchanges (A shares). All Chinese firms' fiscal years end in December so the fiscal year coincides with the calendar year. We first define a firm's stock return volatility in a window as the mean absolute daily abnormal return (in excess of market return) in this window. We then calculate the normalized volatility for an earnings announcement as the return volatility during the 4-day window [-1,+2] divided by the average of return volatilities during the [-56,-2] window (55 days before the announcement window) and the [+3,+57] window (55 days after the announcement window), then minus one. Day 0 refers to the earnings announcement day. Differenced volatility for an earnings announcement is the return volatility during the 4-day window [-1,+2] minus the average of return volatilities during the [-56,-2] window and the [+3,+57] window. We require at least 4 days of consecutive trading around an earnings announcement to calculate the volatility measures. We first calculate normalized volatility and differenced volatility for each of the Chinese listed firms, and then calculate the annual averages. We also report differences between 2011 (before anti-corruption campaign) and the average of 2013-2014 (after the start of anti-corruption campaign) and the associated t-statistics.

Year	Normalized Volatility	Differenced Volatility
2005	0.131	0.228
2006	0.045	0.068
2007	0.258	0.519
2008	0.170	0.315
2009	0.116	0.173
2010	0.269	0.360
2011	0.330	0.436
2012	0.101	0.117
2013	0.253	0.332
2014	0.037	0.075
2013~2014		
- 2011 Diff.	**-0.184**	**-0.231**
t-stat	**(-10.94)**	**(-7.77)**

Table 11

Abnormal Corruption Measures for All Chinese Firms in 2005-2014: Benchmarked to Hong Kong Firms

This table presents annual averages of abnormal corruption measures for all Chinese listed firms from 2005 to 2014. The sample includes all firms listed on Shanghai and Shenzhen stock exchanges (A shares). For each Chinese firm, we identify a matched Hong Kong listed firm by first selecting a subsample of Hong Kong listed firms satisfying the following conditions: 1) Hong Kong local firm instead of foreign or Mainland Chinese firm; 2) In the same industry as the Chinese firm; and 3) Market cap is within the range of 50% and 150% of the Chinese firm. We then choose from this subgroup a matched firm that has the closest book-to-market ratio to the Chinese firm. Abnormal corruption measures are calculated as the differences between the Chinese firms and matched Hong Kong firms. The firm-level corruption measures include: 1) Standardized difference of small profit and standardized difference of small loss, which measure earnings discontinuity; 2) Absolute value of discretionary accruals, scaled by total assets; 3) Number of regulation breaches in a year; 4) Growth of sales minus growth of net income; 5) Profit margin, calculated as net income divided by revenue; 6) Normalized volatility and differenced volatility around earnings announcement. Absolute value of discretionary accruals, growth of sales minus growth of net income, and profit margin are winsorized at 5% and 95% for each year because of the large number of outliers. All the other firm-level corruption measures, except number of regulation breaches, are winsorized at the 1% and 99% levels for each year. We exclude financial firms for three measures: absolute value of discretionary accruals, growth of sales minus growth of net income, and profit margin. We also report differences between 2011 (before anti-corruption campaign) and the average of 2013-2014 (after the start of anti-corruption campaign), as well as the associated t-statistics.

	Earnings Discontinuity						**Return Volatility around Earnings Announcement**	
Year	**Small Profit**	**Small Loss**	**Abs. (DACC)**	**Regulation Breaches**	**Sales Growth - Income Growth**	**Profit Margin**	**Normalized Volatility**	**Differenced Volatility**
2005	0.034	-0.039	-0.019	0.052	0.591	-0.027	0.080	0.103
2006	0.015	-0.032	-0.017	0.035	-0.108	0.022	0.180	0.556
2007	0.017	-0.025	-0.009	0.040	-0.162	0.012	0.249	0.575
2008	0.113	-0.099	-0.011	0.028	0.236	0.021	0.109	0.213
2009	0.036	-0.050	0.001	0.110	0.415	0.003	0.155	0.231
2010	0.047	-0.032	-0.014	0.090	0.202	0.010	0.379	0.526
2011	0.042	-0.048	-0.017	0.108	-0.089	0.037	0.260	0.287
2012	0.086	-0.082	-0.026	0.168	0.140	0.027	0.085	0.135
2013	0.046	-0.027	-0.005	0.191	0.283	0.017	0.089	-0.112
2014	0.063	-0.047	-0.015	0.128	0.230	0.022	-0.081	-0.322
2013~2014 - 2011 Diff.	0.013	0.011	**0.007**	**0.051**	**0.347**	**-0.018**	**-0.242**	**-0.487**
t-stat	(0.87)	(0.97)	**(3.49)**	**(4.17)**	**(6.72)**	**(-2.71)**	**(-9.54)**	**(-8.80)**

Appendix

Section A.1. Content of Eight-point Regulation

The content of Eight-point Regulation includes the following [China Daily (2012)].

1. *Leaders must maintain close contact with the grassroots. They must understand the real situation facing society through in-depth visits at the grassroots level. Greater attention should be focused on places where social problems are more acute, and inspection tours must be carried out more thoroughly. Inspection tours which are a mere formality should be strictly prohibited. Leaders should work and listen to the public and lower level officials; the most practical problems facing ordinary people must be tackled. For official visits, there should be no welcome banner, no red carpet, no floral arrangement or grand receptions for officials.*
2. *Meetings and major events should be strictly regulated, and their efficiency improved. Politburo members are not allowed to attend ribbon-cutting or cornerstone-laying ceremonies, or celebrations and seminars, unless they get approval from the Central Committee. Official meetings should be shortened, be specific and to-the-point, and be free of empty-talk and blather.*
3. *The issuing of official documents should be reduced.*
4. *Officials' visits to foreign countries should only be arranged when absolutely necessary, with fewer accompanying members; on most occasions, there is no need to mobilize a reception by Chinese expatriates, institutions and students at the airport.*
5. *There should be fewer traffic controls when leaders travel by car to avoid unnecessary inconvenience to the public.*
6. *The media should seek to reduce the number of news reports related to members of the Politburo, their work and their activities. The media should also seek to reduce the amount of time spent on these news pieces and minimize their scope. Such stories should only be reported depending on work needs, news value, and potential social impact.*
7. *Leaders should not publish any works by themselves or issue any congratulatory letters in their own name unless an arrangement has been made with the central authorities. Official documents without much meaningful content and without much actual importance should be withheld. Publications dedicated to senior officials' work and activities are also restricted.*
8. *Leaders must practice thrift and strictly follow relevant regulations on accommodation and cars.*

Section A.2. List of 34 Key Words for News Search

Below is the list of 34 key words used for news searches described in Section 2.1 of the paper. English translation is provided next to the original Chinese key words. Note that the structure of Chinese language differs from English, so some key words in English may sound redundant but are not so in Chinese. For example, "investigated" (key word #4) is a substring of "investigated by party organizations" (key word #1), but the corresponding Chinese key word 接受调查 is not a substring of 接受组织调查.

1	接受组织调查	Investigated by party organizations
2	接受检察部门调查	Investigated by prosecuting department
3	接受有关部门调查	Investigation by corresponding department
4	接受调查	Investigated
5	公安机关调查	Investigated by police department
6	纪检机关调查	Investigated by discipline inspection department
7	涉嫌受贿	Suspected of receiving bribes
8	涉嫌严重违纪	Suspected of severe disciplinary violations
9	涉嫌个人违纪问题	Suspected of personal disciplinary violations
10	涉嫌经济问题	Suspected of monetary issues
11	涉嫌违纪	Suspected of disciplinary violations
12	被检察机关批准执行逮捕	Arrested with the approval of prosecuting department
13	被检查机关带走接受调查	Taken away by investigation department to be investigated
14	被检察机关带走接受调查	Taken away by prosecuting department to be investigated
15	被警方控制	Under police control
16	被立案侦查	Being filed a case for investigation
17	被带走	Taken away
18	被拘	Detained
19	采取认定为不适当人选措施	Considered an inappropriate candidate
20	刑事拘留	Criminal detention
21	拘留审查	Detained for examination
22	拘留调查	Detained for investigation
23	双规	"Shuanggui" (a disciplinary measure taken by CPC that requires a party member to be investigated at a given time and a given place)
24	两规	Another name for "Shuanggui"
25	两指	"Liangzhi" (similar to "Shuanggui" but applied to non-Party members)
26	逮捕	Arrested
27	批捕	Approval of arrest
28	失去人身自由	Lose personal freedom
29	投案自首	Surrender oneself
30	未能取得联系	Unable to contact

31	逃至国外	Escape abroad
32	跑路	Escape
33	执行监视居住	Under residential surveillance
34	关于媒体报道	Regarding the media report

Section A.3. List of 7 Key Words to Identify "Guba" Posts that Discuss Corruption.

We manually read a sample of the "Guba" posts and find that posters normally use simple and casual language to discuss corruption rather than the formal language in the list of 34 key words in Section A.2. Therefore, we construct a list of 7 keywords based on our manual reading of the subsample of "Guba" posts that discuss corruption. we identify a "Guba" post as discussing corruption if its title contains one of seven keywords below.

1	腐败	Corrupt
2	腐化	Corrupt
3	贪污	Embezzlement
4	反腐	Anti-Corruption
5	受贿	Receiving Bribes
6	行贿	Bribing Others
7	中纪委	Central Commission for Discipline Inspection of the CPC

Section A.4. Additional Description of Corruption Measures

1. Standardized difference of small profit and small loss

   Standardized difference of small profit (small loss) equals the difference between the actual and expected number of firms in the small profit interval (small loss interval), divided by the difference's estimated standard deviation. We follow the literature [Beaver, McNichols and Nelson (2007)] and calculate the expected number of firms in an interval as the average of the two immediately adjacent intervals, and variance as $Np_i(1-p_i)+\left(\frac{1}{4}\right)N(p_{i-1}+p_{i+1})(2-p_{i-1}+p_{i+1})$ where N is the sum of the number of firms and p_i is the probability that a firm falls in interval i.

2. Discretionary accruals

   We follow the literature and construct discretionary accruals using annual accounting variables. Specifically, we first define total accrual as the difference between net income (NI) and cash flows from operating activities (CFO), divided by total assets (AT). Next, we use the modified Jones' (1991) model for each industry-year.

$$\frac{Accruals_{i,t}}{AT_{i,t}} = a_1\frac{1}{AT_{i,t}} + a_2\frac{\Delta Rev_{i,t}}{AT_{i,t}} + a_3\frac{PPE_{i,t}}{AT_{i,t}} + \varepsilon_{i,t}$$

   where ΔREV is change in revenue, and PPE is the gross property, plant, and equipment. Discretionary accruals (DACC) is residual from the regression. Since discretionary accruals reverse over time, we follow the literature and use the absolute value of discretionary accruals as a measure of accounting manipulation.

3. Related-party sales

   Related-party sales for a firm are obtained from CSMAR's related party transaction database at the transaction level in the annual report, and then aggregated and scaled by revenue (REV).

4. Related-party loans

   We obtain related-party loans from WIND database (available from annual report) and scale by total asset (AT).

5. Other receivables from parent

   We obtain data on other receivables from the parent firm WIND database (available from annual report) and scale by total asset (AT).

6. Regulation Breaches

Below is a complete list of the categories of regulation breaches, with English translation. We exclude the type of "non-material accounting errors" (P2515) because they are associated with common accounting mistakes which are unlikely to be asscicated with corruption.

P2501=虚构利润 Fake profit
P2502=虚列资产 Fake assets
P2503=虚假记载(误导性陈述) Fake record (misleading description)
P2504=推迟披露 Delayed disclosure
P2505=重大遗漏 Important missing items
P2506=披露不实(其它) False disclosure (other)
P2507=欺诈上市 Cheating for IPO
P2508=出资违规 Illegal fund investment
P2509=擅自改变资金用途 Change in uses of funds without permission.
P2510=占用公司资产 Embezzle corporate assets.
P2511=内幕交易 Trading on inside information.
P2512=违规买卖股票 Illegal stock trading.
P2513=操纵股价 Manipulating stock prices.
P2514=违规担保 Illegal guarantee
P2515=一般会计处理不当 Non-material accounting errors
P2599=其他 Other

7. Regulation Breaches

We collect the data of business entertainment expenditure from the footnotes of firms' financial statements using a Python program. The item could be reported under three sections: "management expenses" and "sales expenses" in the income statement, and "other cash payments for the expenses related to operating activities" in the cash flow statement. We follow the literature [Ou-Yang, Shu, and Wong (2015)] and construct the BEE measure as follows. First, if BEE is disclosed under both sections of "management expenses" and "sales expenses" in the income statement, we take their sum as BEE. Second, if BEE is only disclosed in either one of expenses accounts or "other cash payments" account, we take the reported BEE as the total BEE. Third, if BEE is disclosed only in the "other cash payments" section in the cash flow statement, and one of the expense accounts in the income statement, we take the larger amount as BEE.

Section A.5. Robustness Tests with the Alternative Sample of Event Firms

As discussed in Section 3, our approach of identifying matched firms is unable to find matched firms for five event firms because no other firms in the same industry have close enough market capitalization. As a result, we relax the size requirement and identify matched firms as those having the closest market capitalization among firms in the same industry and with the same SOE status. We conduct robustness tests by excluding these five event firms, and present the tables corresponding to all the event analyses in the paper as below.

Table A1
Corruption Measures of Event Firms before Corruption Investigations
This table corresponds to Table 2 in the paper.

	Years with respect to Event Year		
	t-2	t-1	t
Absolute Value of Discretionary Accruals			
Event Firm	0.043	0.041	0.049
Matched Firm	0.050	0.039	0.046
Diff.	-0.007	0.002	0.004
t-stat	-1.34	0.44	0.43
Related-Party Sales			
Event Firm	0.091	0.101	0.076
Matched Firm	0.058	0.060	0.057
Diff.	**0.033**	**0.041**	0.019
t-stat	**1.87**	**2.32**	0.80
Related-Party Loans			
Event Firm	0.003	0.006	0.006
Matched Firm	0.002	0.002	0.006
Diff.	0.001	0.003	0.000
t-stat	1.09	1.60	-0.09
Other Receivables from Parent (%)			
Event Firm	0.007	0.009	0.005
Matched Firm	0.007	0.004	0.003
Diff.	0.000	0.005	0.002
t-stat	-0.01	1.01	0.75
# Regulation Breaches			
Event Firm	0.148	0.131	0.184
Matched Firm	0.141	0.110	0.079
Diff.	0.007	0.021	**0.105**
t-stat	0.13	0.54	**1.65**
Business Entertainment Expenditure (%)			
Event Firm	0.189	0.169	0.147
Matched Firm	0.209	0.175	0.133
Diff.	-0.019	-0.007	0.014
t-stat	-0.60	-0.15	0.37

	Years with respect to Event Year		
	t-2	t-1	t
Sales Growth - Income Growth			
Event Firm	0.505	0.518	0.921
Matched Firm	0.152	0.127	0.395
Diff.	**0.354**	**0.391**	**0.527**
t-stat	**2.62**	**2.37**	**1.83**
Profit Margin			
Event Firm	0.073	0.059	0.038
Matched Firm	0.085	0.082	0.069
Diff.	-0.012	**-0.022**	**-0.032**
t-stat	-1.15	**-2.20**	**-2.34**
Corruption Postings			
Event Firm	0.043	0.082	0.132
Matched Firm	0.041	0.057	0.074
Diff.	0.001	**0.025**	**0.058**
t-stat	0.17	**2.82**	**3.31**

Table A2

Corruption Measures of Event Firms before Corruption Investigations: Subsample Analysis

This table corresponds to Table 3 in the paper.

	Corruption Measures: Event Firm – Matched Firm					
	SOEs			**Non-SOEs**		
Measure	t-2	t-1	t	t-2	t-1	t
Abs. Discretionary Accruals	-0.006	0.003	0.001	-0.011	-0.016	0.019
	-1.17	0.54	0.07	-0.70	-0.54	1.17
Related-Party Sales	**0.042**	**0.051**	0.025	-0.043	-0.028	-0.012
	2.25	**2.62**	0.93	-0.99	-0.72	-0.27
Related-Party Loans	0.002	0.003	0.000	0.000	0.005	-0.003
	1.08	1.36	0.07	0.91	1.03	-0.60
Other Rec. from Parent (%)	0.000	0.007	0.003	0.000	-0.014	0.000
	-0.01	1.62	0.74	0.00	-0.77	1.00
# Regulation Breaches	0.016	0.032	0.094	-0.063	-0.056	0.167
	0.27	0.75	1.29	-0.44	-0.57	1.48
Bus. & Ent. Expenditure (%)	-0.026	-0.011	-0.005	0.015	0.016	0.103
	-0.71	-0.21	-0.21	0.28	0.16	0.54
Sales Growth - Income Growth	**0.343**	**0.374**	**0.632**	**0.436**	0.521	-0.010
	2.29	**2.13**	**2.03**	**2.03**	1.09	-0.01
Profit Margin	-0.014	**-0.023**	**-0.034**	0.003	-0.018	-0.021
	-1.28	**-2.00**	**-2.19**	0.10	-1.28	-0.80
Corruption Postings	0.002	**0.025**	**0.059**	0.000	0.027	**0.054**
	0.17	**2.52**	**2.92**	0.02	1.47	**1.76**

Table A3
Probit Regressions of Investigation on Corruption Measures

This table corresponds to Table 4 in the paper.

	Dependent Variable: Dummy of Corruption Investigation						
Independent Variables (t-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Abs. (Discretionary Accrual)	0.278					1.194	0.391
	(0.13)					(0.44)	(0.18)
Related-Party Sales		**0.966***				**1.154***	**0.959***
		(1.88)				**(1.80)**	**(1.81)**
Related-Party Loans		**9.815****				**9.823***	**10.590****
		(2.02)				**(1.86)**	**(2.14)**
Other Receivables from Parent		**1.182***				**1.325***	**1.360****
		(1.92)				**(1.73)**	**(1.99)**
# Regulation Breaches			0.035			-0.066	0.053
			(0.15)			(-0.26)	(0.24)
Bus. Ent. Expenditure			-0.022			-0.025	
			(-0.44)			(-0.45)	
Sales Growth - Income Growth				**0.256****		**0.321****	**0.262****
				(2.53)		**(2.35)**	**(2.45)**
Profit Margin				-0.357		0.018	-0.684
				(-0.39)		(0.01)	(-0.73)
Corruption Postings					**1.709***	1.264	**1.684***
					(1.92)	(1.06)	**(1.80)**
Ln(ME)	0.136	**0.152***	0.115	**0.156***	0.087	**0.206***	**0.162***
	(1.63)	**(1.80)**	(1.20)	**(1.85)**	(1.23)	**(1.76)**	**(1.82)**
SOE Dummy	-0.084	-0.166	0.098	-0.141	-0.120	-0.225	-0.324
	(-0.34)	(-0.69)	(0.36)	(-0.57)	(-0.52)	(-0.73)	(-1.27)
Provincial Corruption: Medium	0.147	0.216	0.107	0.178	0.120	0.139	0.231
	(0.77)	(1.11)	(0.46)	(0.91)	(0.64)	(0.56)	(1.15)
Provincial Corruption: High	**0.369***	**0.458****	0.376	**0.392***	0.296	**0.469***	**0.398***
	(1.75)	**(2.13)**	(1.55)	**(1.84)**	(1.41)	**(1.80)**	**(1.78)**
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Nobs	273	276	194	273	290	187	273

Table A4
Probit Regressions of Investigation on Political Connection Measures

This table corresponds to Table 5 in the paper.

Dependent Variable: Dummy of Corruption Investigation				
Panel A: Regressions on Political Connection Measures				
Independent Variables (t-1)	(1)	(2)	(3)	(4)
Government Connection	**0.725*** (4.22)**		**0.712*** (4.11)**	**0.747*** (3.88)**
University Affiliation		**-0.730*** (-2.92)**	**-0.705*** (-2.77)**	**-1.091*** (-3.73)**
Abs. (Discretionary Accrual)				-0.410 (-0.19)
Related-Party Sales				0.715 (1.29)
Related-Party Loans				**13.180** (2.26)**
Other Receivables from Parent				**1.387* (1.84)**
# Regulation Breaches				0.082 (0.37)
Sales Growth - Income Growth				**0.224** (1.97)**
Profit Margin				-1.195 (-1.22)
Corruption Postings				**2.359** (2.40)**
Controls	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes
# Obs	290	290	290	273

Panel B: Regressions on the Alternative Measures of University Affiliations				
Independent Variables (t-1)	(1)	(2)	(3)	(4)
University Affiliation: # Connected Managers	**-0.321** (-2.34)**	**-0.476*** (-3.12)**		
University Affiliation with Past Leaders			**1.224*** (2.88)**	**1.433** (2.53)**
Government Connection		**0.785*** (4.10)**		**0.753*** (3.91)**
Corruption Measures	No	Yes	No	Yes
Controls	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes
# Obs	290	273	290	273

Section A.6. Probit Regressions of Investigation Without Controlling for Provincial Corruption Index.

Table A5
Probit Regressions of Investigation on Corruption Measures

This table corresponds to Table 4 in the paper except that the regressions do not control for provincial corruption index.

	Dependent Variable: Dummy of Corruption Investigation						
Independent Variables (t-1)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Abs. (Discretionary Accrual)	0.605					1.231	0.717
	(0.30)					(0.46)	(0.34)
Related-Party Sales		**1.039****				**1.243****	**1.018***
		(2.06)				**(1.98)**	**(1.95)**
Related-Party Loans		**8.592***				8.564	**9.635***
		(1.77)				(1.63)	**(1.96)**
Other Receivables from Parent		0.617				1.171	0.657
		(1.32)				(1.57)	(1.27)
# Regulation Breaches			0.050			-0.035	0.080
			(0.22)			(-0.14)	(0.37)
Bus. Ent. Expenditure			-0.026			-0.028	
			(-0.51)			(-0.52)	
Sales Growth - Income Growth				**0.253****		**0.305****	**0.263****
				(2.52)		**(2.26)**	**(2.49)**
Profit Margin				-0.321		-0.131	-0.504
				(-0.36)		(-0.11)	(-0.55)
Corruption Postings					**2.104****	1.638	**2.078****
					(2.49)	(1.40)	**(2.35)**
Ln(ME)	**0.131***	**0.133***	0.097	**0.149****	0.077	0.175	**0.128***
	(1.85)	**(1.87)**	(1.06)	**(2.08)**	(1.21)	(1.58)	**(1.68)**
SOE Dummy	-0.111	-0.190	0.071	-0.164	-0.165	-0.276	-0.345
	(-0.47)	(-0.82)	(0.27)	(-0.69)	(-0.74)	(-0.95)	(-1.41)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# Obs	283	286	197	283	300	190	283

Table A6
Probit Regressions of Investigation on Political Connection Measures

This table corresponds to Table 5 in the paper except that the regressions do not control for provincial corruption index.

Dependent Variable: Dummy of Corruption Investigation				
Panel A: Regressions on Political Connection Measures				
Independent Variables (t-1)	(1)	(2)	(3)	(4)
Government Connection	**0.747*** (4.44)**		**0.719*** (4.24)**	**0.768*** (4.08)**
University Affiliation		**-0.733*** (-3.09)**	**-0.678*** (-2.80)**	**-1.116*** (-3.94)**
Abs. (Discretionary Accrual)				-0.444 (-0.21)
Related-Party Sales				0.731 (1.34)
Related-Party Loans				**12.502** (2.13)**
Other Receivables from Parent				0.911 (1.51)
# Regulation Breaches				0.096 (0.43)
Sales Growth - Income Growth				**0.223** (1.98)**
Profit Margin				-1.101 (-1.16)
Corruption Postings				**2.880*** (3.05)**
Controls	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes
# Obs	300	300	300	283

Panel B: Regressions on Political Connection Measures: Alternative Measures of University Affiliation				
Independent Variables (t-1)	(1)	(2)	(3)	(4)
University Affiliation: # Connected Managers	**-0.351*** (-2.71)**	**-0.504*** (-3.45)**		
University Affiliation with Past Leaders			**1.205*** (2.92)**	**1.479** (2.56)**
Government Connection		**0.809*** (4.31)**		**0.797*** (4.22)**
Corruption Measures	No	Yes	No	Yes
Controls	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes
# Obs	300	283	300	283

Table A7
Probit Regressions of Investigation on University Affiliation: Including the Central Party School of CPC

This table presents the distribution of university affiliations with national leaders before corruption investigation events for event firms and matched firms. Panel A presents university affiliations with the seven members of the current Politburo Standing Committee (PSC) of the CPC Central Committee. Panel B presents the university affiliations with the five members of previous PSC who went to different schools from the current PSC members. Note that one firm can be affiliated with multiple universities.

Panel A: University Affiliations with Current Leaders		
	# Firms with University Affiliation	
School Name	**Event Firms**	**Mached Firms**
Tsinghua University	6	18
Peking University	5	10
Kim Il-sung University	0	0
Harbin Engineering University	0	0
Northwest University (China)	0	0
Xiamen University	2	4
Total # Connected Firms	12	27
% Connected Firms	8.0%	18.0%
Panel B: University Affiliations with Past Leaders		
	# Firms with University Affiliation	
School Name	**Event Firms**	**Mached Firms**
China University of Geosciences	5	0
Hebei University of Technology	0	1
Harbin Institute of Technology	1	0
Beijing University of Chemical Technology	0	1
China University of Petroleum	8	0
Total # Connected Firms	14	2
% Connected Firms	9.3%	1.3%

Table A8
Probit Regressions of Investigation on University Affiliation with Past Leaders: Alternative Measures

This table presents the probit regression of investigation probability on the alternative measures of university affiliation with past leaders. The regressions are similar to those in the Table 5 Panel B of the paper except for the alternative university affiliation measures. The two alternative university affiliation measures are: 1) University Affiliation with Past Leaders: # Managers, which counts a firm's number of C-Suite managers who went to the same University as one of the five members of the *previous* Politburo Standing Committee of the CPC central Committee. 2) University Affiliation with Past Leaders: Exclude Zhou, which is similar to the original measure except that we exclude Zhou, Yongkang, a past leader which was indicted during the anti-corruption campaign.

Dependent Variable: Dummy of Corruption Investigation				
Independent Variables (t-1)	(1)	(2)	(3)	(4)
University Affiliation with Past Leaders: # Managers	**1.144*** (2.78)**	**1.378** (2.36)**		
University Affiliation with Past Leaders: Exclude Zhou			0.807 (1.61)	0.435 (0.63)
Government Connection		**0.781*** (4.10)**		**0.768*** (4.11)**
Corruption Measures	No	Yes	No	Yes
Controls	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes
# Obs	300	283	300	283

Section A.8. Alternative Construction of the University Affiliation Measure: Without Dropping the Party School of the Central Committee of CPC

The university affiliation measure in the paper excludes the Party School of the Central Committee of CPC, which is the university attended by Liu, Yunshan, a current PSC member. The Party School of the Central Committee differs from Chinese universities in that it is a unit under the Central Committee of CPC specializing in training (high-rank) government and party officials. The filter of dropping the Party School affects only university affiliation with current leadership, because none of the previous PSC members received a degree from the Party School.

We nevertheless examine the alternative construction of the university affiliation measure without dropping the Party School. When the Party School is included, the number of affiliated firms increases from 12 to 26 for even firms, and from 27 to 30 for matched firms. We then repeat the regression analysis using the university affiliation measure that includes the Party School, and report the results in Table A9 below. Model (1) shows that the coefficient on the university affiliation measure is negative but becomes insignificant. It is worth noting that since the Party School focuses on training high-rank government and party officials, firm managers who went to the Party School were generally high-rank officials (with general government connection). Since our analysis in the paper shows that general government connection is positively related to the probability of being investigated, in Model (1) the university affiliation effect is blurred by the opposite effect of government connection.

In Model (2) which includes the measure of general government connection, the coefficient on the university affiliation becomes significantly negative. This result is consistent with the corresponding main results in the paper, suggesting that university affiliation is associated with a reduced probability of being investigated. Models (3) and (4) repeats the regression analyses but using a firm's number of affiliated managers instead of a dummy variable, and the results remain similar.

Table A9
Probit Regressions of Investigation on University Affiliation: Including the Party School of CPC

This table repeats the regressions of corruption investigation on the university affiliation measures, except that the university affiliation measures include the Party School of the Central Committee of CPC.

Dependent Variable: Dummy of Corruption Investigation				
Independent Variables (t-1)	(1)	(2)	(3)	(4)
University Affiliation	-0.190	**-0.657*** **		
	(-0.99)	**(-2.83)**		
University Affiliation: # Connected Managers			-0.137	**-0.304*** **
			(-1.38)	**(-2.72)**
Government Connection		**0.871*** **		**0.855*** **
		(4.59)		**(4.52)**
Corruption Measures	No	Yes	No	Yes
Controls	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes
# Obs	300	283	300	283

Section A.9. Analysis of Workplace Connection and Birthplace Connection with Current Leadership

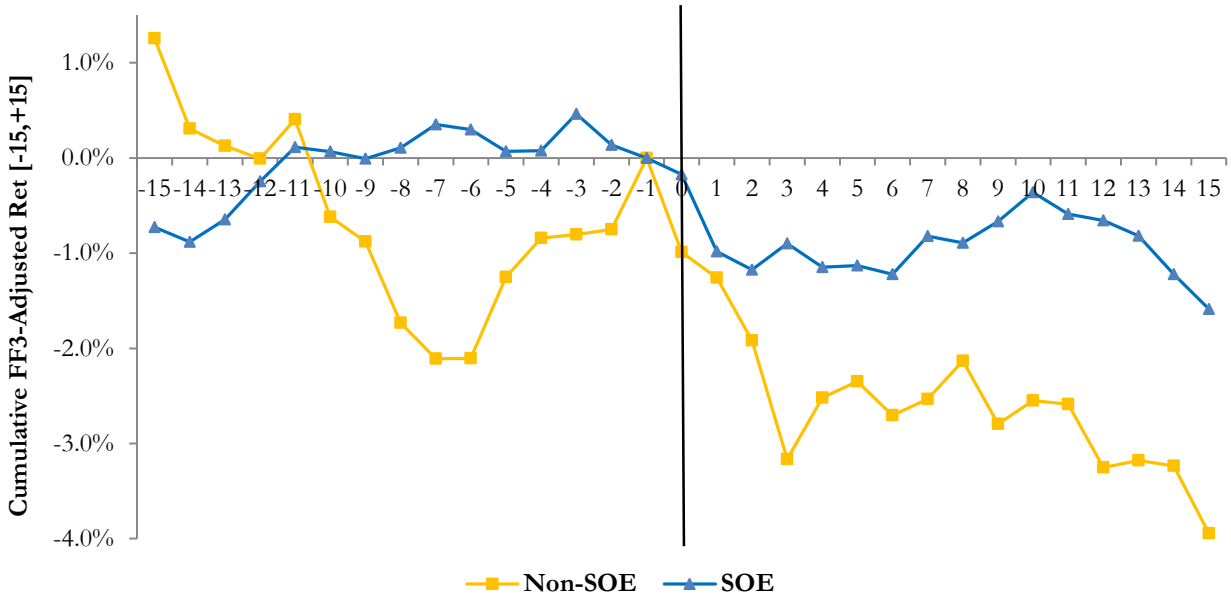
Table A10
Probit Regressions of Investigation on Political Connection Measures: Workplace Connection and Birthplace Connection

This table presents probit regressions of corruption investigation on two alternative political connection measures: 1) Workplace connection, which is a dummy variable that equals to one if the company is located in a province where at least one of the seven members of the Politburo Standing Committee (PSC) of the CPC Central Committee had worked; 2) Birthplace connection, which is a dummy variable that equals to one if the company is located in the hometown of one of the seven members of the Politburo Standing Committee of the CPC Central Committee. The setting of the regressions and the other variables are the same as Table 5 of the paper.

Dependent Variable: Dummy of Corruption Investigation				
Independent Variables (t-1)	(1)	(2)	(3)	(4)
Workplace Connection	-0.0511		-0.164	-0.003
	(-0.32)		(-0.97)	(-0.02)
Birthplace Connection		-0.138	-0.209	-0.179
		(-0.68)	(-0.98)	(-0.77)
Government Connection			**0.732*** **	**0.763*** **
			(4.24)	**(3.96)**
University Affiliation			**-0.674*** **	**-1.133*** **
			(-2.77)	**(-3.97)**
Corruption Measures	No	No	No	Yes
Controls	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes
# Obs	300	300	300	283

Section A.10. Price Response to Investigation Events: State-Owned Enterprises (SOEs) and Non-SOEs.

Figure A1
Cumulative Abnormal Returns of SOEs and non-SOEs in the [-15, +15] window
This figure is similar to Panel A of Figure 4 in the paper except that we divide the event firms into state-owned enterprises (SOEs) and non-SOEs. There are 130 SOEs and 20 SOEs in the sample.

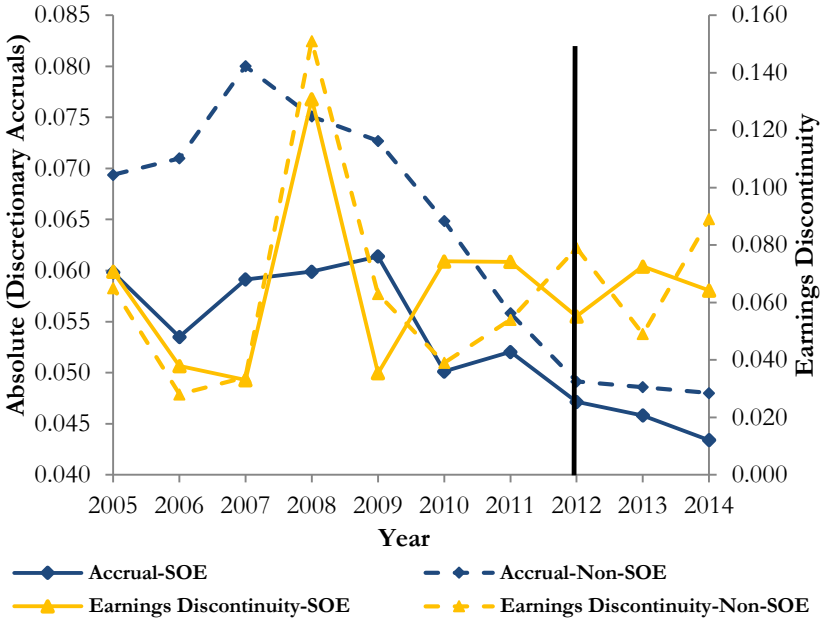


Section A.11. Evolvement of Corruption Measures for All Chinese Listed Firms: State-Owned Enterprises (SOEs) and Non-SOEs

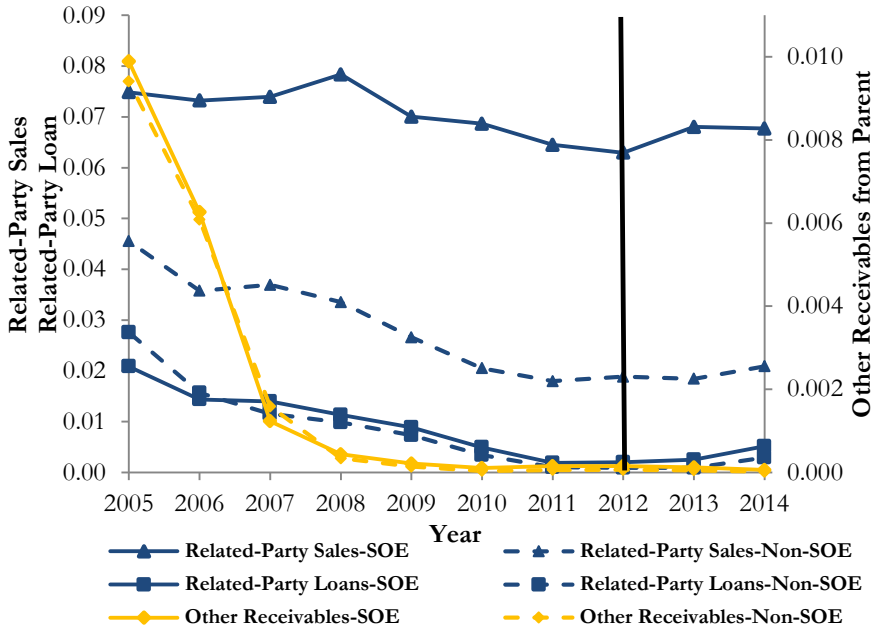
Figure A2
Evolvement of Average Corruption Measures: SOE vs. Non-SOE

This figure is similar to Figure 6 in the paper except that we divide all Chinese listed firms into subgropus of state-owned enterprises (SOEs) and non-SOEs.

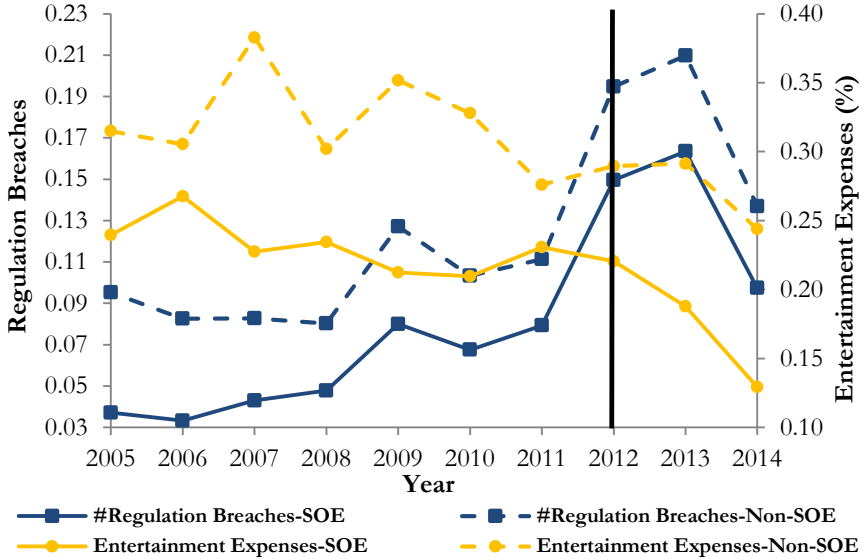
Panel A: Accounting Manipulation



Panel B: Related-Party Transactions



Panel C: Entertainment Expenses & Regulation Breaches



Panel D: Profitability