

## Is the Chinese Corporate Anti-Corruption Campaign Authentic?

JOHN GRIFFIN

CLARK LIU

TAO SHU\*

August 2018

---

\* We are very grateful for helpful comments from Vikas Agarwal, Lin Chen, Mark Chen, Yongheng Deng, Gerald Gay, Jie (Jack) He, Sara Holland, Andrew Karolyi, Omesh Kini, Jun Hoon Lee, David Lesmond, Harold Mulherin, Jeffry Netter, Xuhui Pan, Yihui Pan, Bradley Paye, Annette Poulsen, Clemens Sialm, Baolian Wang, Yongxiang Wang, Bernard Yeung, Xiaoyun Yu, Feng Zhang, and conference participants at 2017 AFE Meeting, 2017 ABFER Meeting, the Fifth Symposium on Emerging Financial Markets: China and Beyond, 2016 China International Conference of Finance, 2016 MIT Asian Conference in Accounting, and 2016 China Financial Research Conference, and seminar participants at Arizona State University, Tulane University, University of Georgia, Georgia State University, and University of Utah. We thank many research assistants including Haorui Bai, Hunter Bezner, Tianyuan Liu, Kush Patel, and Wenqing Zhao for their research support. Griffin is at the McCombs School of Business, University of Texas, Austin. Email: [john.griffin@utexas.edu](mailto:john.griffin@utexas.edu). Liu is at the PBC School of Finance, Tsinghua University. Email: [liuyue@pbcfsf.tsinghua.edu.cn](mailto:liuyue@pbcfsf.tsinghua.edu.cn). Shu is at the Terry College of Business, University of Georgia. Email: [taoshu@terry.uga.edu](mailto:taoshu@terry.uga.edu).

## **Is the Chinese Corporate Anti-Corruption Campaign Authentic?**

August 2018

This paper examines whether the massive Chinese anti-corruption campaign is ensnaring corrupt firms, contains a political component, and is reducing corporate corruption. Consistent with the campaign's stated objectives, Chinese firms with characteristics commonly associated with measures of poor governance, self-dealing, and inefficiencies are more likely to have executives investigated. However, affiliations with prominent investigated political leaders increase investigation likelihood and executives with connections to top current central leadership are less likely to be investigated, possibly indicating political favoritism. Over time, except for reported entertainment expenditures, there has been little overall decreases in measures of potential corporate corruption.

Corporate managers use political connections to funnel resources to their firms, but these distortions often lead to inefficient decisions and underperformance.<sup>1</sup> Nevertheless, China has been rather anomalous in being the world's second largest economy and growth engine, while having a corruption level on par with most developing markets.<sup>2</sup> Amidst stated concerns about lower future growth, the new top leadership in China embarked on an anti-corruption campaign to widely reduce political, military, and business corruption in December 2012. The campaign has already prosecuted or disciplined more than 1.3 million people, including many executives in the corporate world.<sup>3</sup> We examine three important questions related to the corporate portion of the campaign, with emphasis on the first two: Is the campaign exposing executives from more corrupt firms? Does the prosecution of executives contain signs of political favoritism? Is the campaign effective at reducing corporate corruption?

As the largest anti-corruption campaign in modern history and the most important event in China today, the anti-corruption campaign has the potential to bring fundamental changes to China's corporate world. The campaign provides a unique laboratory to evaluate an effort to reduce corruption because the campaign is both widespread and in a corporate setting with substantial room for improvement.

Given the close connection between political and corporate actors, and that it has been shown that political corruption is linked to poor corporate decision-making and self-dealing, a campaign focused on political corruption should punish executives from more corrupt firms. There is substantial controversy surrounding the genuineness of the campaign and if it is simply a ruse to remove political

---

<sup>1</sup> See research by Fisman (2001) and Faccio (2006) which document the magnitude of these connections, and the negative externalities are examined by Fan, Wong, and Zhang (2007), Aggarwal, Meschke, Wang (2012), Duchin and Sosyura (2012), among others.

<sup>2</sup> China's Corruption Perception Index score of 40 in 2016 (and rank of 79 of 176) was half of the score of most Northern European countries (from 75 to 90). Allen, Qian, and Qian (2005) provide a comprehensive analysis of the Chinese business environment and show it lacks a strong legal system and effective corporate governance mechanisms.

<sup>3</sup> Announced by the Communist Party of China's Central Commission for Discipline Inspection (CCDI) in October 2017.

opponents [Economist (2014)]. Others argue that the campaign is not a short-term political one as the Party had used in the past, but instead genuinely focuses on those actually engaged in corruption [Li and McElveen(2014), Magnus (2015)]. While it is difficult to disentangle these possibilities, research is needed to establish working facts regarding the nature of this campaign that is of academic and practical importance to the world's second-largest economy and many developing countries which look to emulate Chinese policies.

We focus on the corporate aspect of the campaign because of the available data to examine firms' corruption-related characteristics as well as connections. By searching a broad set of sources, including databases of all managerial turnovers of Chinese listed firms, news articles from over 300 Chinese financial newspapers, over 800,000 corporate announcements, and disclosures by the Chinese Communist Party, we carefully construct a sample of 150 Chinese-listed firms where the CEOs or other top executives were investigated during the anti-corruption campaign (from December 2012 to December 2015). Of these, 130 (or 87%) are state-owned-enterprises (SOEs). The sample firms account for 18.1 percent in terms of market capitalization (RMB 5.73 trillion) as of December 2014. The major charges against the executives (not mutually exclusive) are receiving bribes (82), illegally benefiting family members (29), embezzling funds (26), bribing others (21), and unspecified offenses (31).

We first examine whether the campaign is capturing executives from firms with signs of distorted managerial incentives, potential self-dealing, and other dubious behavior. Twelve measures of potential corruption are grouped into five categories: corporate governance and managerial incentives, related-party transactions indicating illegal or unethical behavior, regulation breaches and entertainment expenditures, inefficiencies in operation and investment, and corruption-related postings on a popular Chinese online investor forum. Sample firms with prosecuted executives have higher measures of corruption than their matched firms that have no prosecutions. In probit

regressions, we find that (poor) monitoring by minority shareholders, CEO compensation, a near-retirement dummy, related-party sales, related-party loans, operational inefficiency, investment inefficiency, and corruption postings are all significantly related to the probability of an executive being investigated for corruption. Interestingly, business entertainment expenditures is not related to investigation probability, perhaps indicating that the campaign is more complex than the perceived notion of targeting firms with excessive consumption expenditures.

These results not only reveal that the campaign captures corrupt firms, but also have important implications for China's corporate world. For example, the finding on the near-retirement dummy confirms the wide-spread anecdote of the "59 Years Old Phenomenon" where China's strict retirement policy (at the age of 60) can trigger distorted incentives of managers. The finding on corruption postings indicates the importance and informativeness of on-line outlets of grass-root Chinese investors given the dominance of government media in China.

We then turn to an examination of political connections. Managers with local government connections are more likely to be investigated but not managers with central government connections. We then examine specific connections between firm executives and politicians. Managers' university or oil-industry affiliations with Zhou, Yongkang, the highest ranked investigated leader from the previous administration, are associated with a higher probability of corporate investigation.<sup>4</sup> In contrast, university connections with the top seven leaders of the 18<sup>th</sup> Politburo Standing Committee (PSC) through Peking University and Tsinghua University predict a lower probability of investigation.<sup>5</sup> This result is consistent with a "protection effect" where political connections shelter firms from scrutiny. It is possible that executives from top universities such as Peking and Tsinghua simply have better job prospects and self-discipline and hence are less likely to cheat. However, we see no reduced

---

<sup>4</sup> It is widely recognized that oil system is one of Zhou's power bases (more details in Section 4.2).

<sup>5</sup> The Politburo Standing Committee (PSC) of CPC's Central Committee is the most powerful decision-making body in China. The members of the 18<sup>th</sup> PSC were elected in November 2012 and their terms ended in October 2017.

probability of investigation for other top universities which are not associated with the PSC members. Additionally, connections with a broader set of non-investigated national leaders reduce investigation probabilities.

Our results so far suggest that the influences of corruption and political factors both exist in the corporate investigations. Nevertheless, like with most analyses, one cannot rule out the possibility that the campaign is entirely politically motivated and that the corruption measures correlate highly with the wrong political camp. This possibility is substantially reduced as we find that even after controlling for an extensive set of political measures, both corruption measures and political connections explain similar portions of the variation in the probability of investigation. For example, in the probit regressions of corruption investigations, there is a 14 percentage-point increase in pseudo  $R^2$  when adding the corruption measures and a 19 percentage-point increase for the political variables. Additionally, the corruption measures remain important after excluding the corporate investigations associated with identified political investigations. Therefore, the campaign seems to both have a strong political component while also capturing corrupt firms that cannot be identified through their political connections. Our tests are not causal; and like with most empirical exercises, there are omitted variables which can affect both corruption measures and investigations.

To the extent that the campaign removes bad corporate managers and causes others to stop engaging in dubious activities for fear of prosecution, the campaign could lead to improved governance, efficiency, and transparency in Chinese firms. In contrast, if managers believe the campaign is mostly politically motivated, then the campaign may have little effect on managerial behaviors and measures of self-dealing. We examine our firm-level corruption measures for all Chinese listed firms over time. There is a large and reliable decrease in 2013-2015 compared to 2011 in business entertainment expenditures, a direct target of the campaign. Other measures demonstrate only mixed results. It is possible that the other measures are poor proxies for questionable firm behavior, but

these measures have strong intuitive underpinnings, empirical support from prior literature, and, as previously shown, are useful for predicting corruption investigations.

We also find little evidence that the anti-corruption campaign improves the disclosure and information environment of Chinese financial markets or encourages foreign direct investment in China. Given that our measures are affected by macroeconomic conditions and that there is no anti-corruption campaign in Hong Kong, we match Chinese firms to a sample of Hong Kong firms and conduct a difference-in-difference analysis that again shows little improvement for Chinese firms.

Overall, while the anti-corruption campaign effectively cuts entertainment expenditures, we find little evidence that there has been a broad decrease in corporate corruption indicators and corporate culture. It is both interesting and puzzling that a campaign ensnaring many executives from firms with weaker governance, more self-dealing, and more inefficiencies is not leading to broader improvements. If corrupt executives believe that the campaign is simply politically motivated, then they might focus more on shoring up political connections and continue in rent-extraction in all but the most conspicuous ways.<sup>6</sup>

Our findings provide an important observation as to the debate about the relative effectiveness of fighting corruption through centralized government initiatives [Olken (2007)] or broader and more micro-level changes such as corporate governance, legal reform [Wei (2001), Svensson (2005), Magnus (2015)], and news-based and grassroots campaigns [Reinikka and Svensson (2004), Bjorkman and Svensson (2009)].

There has been a growing literature exploiting the anti-corruption campaign to study the relation between corruption and various aspects of economy and financial markets such as municipal

---

<sup>6</sup> This interpretation might be consistent with luxury liquor prices. Moutai, China's national liquor served at luxury banquets, price plummeted after the start of campaign, but gradually recovered, especially in 2017 with the expectation that the price will rise when the campaign ends. (<http://www.scmp.com/news/china/policies-politics/article/2095446/targeted-crackdown-moutai-liquor-once-again-toast-town>)

bond spreads [Ang, Bai, and Zhou (2016)], bank lending [Li, Wang, and Zhou (2018)], efficient resources allocation [Giannetti, Liao, You, and Yu (2018)], and negative externalities of corruption [Lin, Morck, Yeung, and Zhao (2018)]. Consistent with our findings, Ke, Liu, and Tang (2017) document that the campaign has reduced firms' consumption of luxury goods but such reduction does not increase value of the firms, indicating a lack of overall decrease in corruption.<sup>7</sup> While most studies focus on a specific consequence of the campaign, we differ by providing a broad view of the corporate aspect of the campaign through a comprehensive examination of the relations of prosecutions and corruption and political measures. These findings help us to better understand the campaign, and indicate areas for additional research to further understand corporate corruption and the political economy in China.

## **1. The Anti-Corruption Campaign Background**

Corruption is generally thought to be a problem in the political, military, and business spheres in China.<sup>8</sup> Pei (2007) estimates the direct costs of corruption at three percent of Chinese GDP per year.

Studies document problems for the Chinese economy such as lower capital allocational efficiency [Bai, Hsieh, and Song (2016)], increasing debt and investments not accompanied by growth [Song and Xiong (2017)], financial fraud [Chen, Firth, Gao, and Rui (2006)], and tunneling [Jiang, Lee, and Yue (2010)]. Political connections have also been shown to have broad influence on Chinese firms in areas such as bank financing [Li, Meng, Wang, and Zhou (2008), Chen, Liu, and Su (2013)], earnings

---

<sup>7</sup> Recent work by Goh, Ru, and Zou (2018) studies political investigations in the anti-corruption campaign, and finds that politicians connected to top leaders are less likely to be investigated and receive less punishment conditional on indictment. These findings on political investigations are consistent with our findings on corporate investigations.

<sup>8</sup> The knabbing of top U.S. firms for bribery in China by U.S. regulators also provides glimpses into the extent of the bribery problem using U.S. standards. For example, Avon, the cosmetics company, admitted guilt and paid \$135 million in 2014 to settle U.S. Department of Justice charges for bribing Chinese government officials (<http://fortune.com/2014/12/17/avon-bribery-probe-settlement/>). J.P. Morgan paid \$264 million in 2016 to settle a probe by U.S. officials into its practice of improperly influencing top Chinese officials by hiring their children. (<https://www.ft.com/content/fc32b64e-ac87-11e6-ba7d-76378e4fef24>).



management [Fan, Guan, Li, and Yang (2014)], expropriation of minority shareholders [Cheung, Rau, and Stouraitis (2010), Chen, Li, Su, and Sun (2011)], and the influence of political connections can be seen in the firms' stock returns [Calomiris, Fisman, and Wang (2010), Liu, Shu, and Wei (2017)].

Yet, due to secrecy, excessive focus on rent-seeking, and distortionary incentives, the indirect costs are likely much greater than the direct costs [Shleifer and Vishny (1993)]. Corruption is a larger impediment for small and medium-sized firms [Beck, Demirguc-Kunt, and Maksimovic (2005)], and also stifles foreign direct investment [Wei (2000)]. Laws in the U.S. and U.K. seek to curtail bribery abroad but may disproportionately disadvantage global firms [Karpoff, Lee, and Martin (2017) and Zeume (2016)]. Pointing to successful cases of anti-corruption reform in Hong Kong and Singapore, developing economies often launch anti-corruption campaigns.

Soon after Xi Jinping became the leader of China on November 15, 2012, he emphasized the determination to crack down on corruption, targeting both “tigers and flies”. On December 4, 2012, the Communist Party of China (CPC) announced the “Eight-Point Regulation” which provides clear guidance for the party and government officials to eliminate corruption (content provided in Section A.1 of the Internet Appendix). 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 previous Chinese leaders had repeatedly criticized the severe corruption problems and made anti-corruption efforts, top government officials were rarely touched. In contrast, Xi, the son of a top communist veteran, put anti-corruption at the center of his platform. The intensive and extensive anti-corruption campaign has been “more prolonged and far-reaching than anyone anticipated” [The Guardian (2015)]. The campaign has punished over 1.3 million people [Reuters (2017)], including six national leaders and hundreds of high-ranking government officials and military

officers.<sup>9</sup> The campaign has also investigated corrupt managers in China's corporate world, such as Lin Song, former Chairman of the state-owned enterprise (SOE) China Resources and one of *Fortune's* "50 Most Influential Business Leaders".

Corruption campaigns are typically conducted by less transparent legal and financial institutions and are often thought to mask the cleansing of political oppositions [Bardhan (1997), Svensson (2005)].<sup>10</sup> Additionally, one wonders if the anti-corruption campaign is driving positive changes in the Chinese corporate world and corporate culture. Academic research is needed to further understand these important questions.

## **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 all Chinese listed firms to study the impact of the anti-corruption campaign on the Chinese corporate world.

As of December 2015, there are 2,909 listed stocks in Shanghai and Shenzhen stock exchanges, with a total free-float market capitalization of RMB 41.8 trillion (USD 6.4 trillion). The sample firms include the listed firms in China whose top managers were investigated during the anti-corruption campaign for corrupt behavior. We require a sample firm to be listed on either the Shanghai Stock Exchange or the Shenzhen Stock Exchange, and for either the CEO or other top executives to have

---

<sup>9</sup> See the article at <https://www.reuters.com/article/us-china-corruption/chinese-watchdog-says-1-34-million-officials-punished-for-graft-since-2013-idUSKBN1CD04B>. The six investigated national leaders are Bo Xilai, Guo Boxiong, Ling Jihua, Su Rong, Xu Caihou, and Zhou Yongkang. Bo was investigated in 2012 (before the campaign) but prosecuted during the campaign in 2013. He is listed on the CCDI website, the official source publicizing information of the anti-corruption campaign, and is generally regarded as one of the tigers cracked down by the campaign.

<sup>10</sup> For example, Bardhan (1997) states that "...as happened many times in the recent history of Africa or China, anti-corruption campaigns are usually ad hoc, and targeted at political enemies or at best at small fry, exempting the big fish, or the important cronies and accomplices of the political rulers."

been investigated for corrupt behavior during the campaign from December 4, 2012 to December 31, 2015.<sup>11</sup>

We identify investigated firms using three approaches. First, we obtain information of CEOs of listed companies from the China Stock Market & Accounting Research (CSMAR) database and identify a total of 2,862 CEO turnovers during December 4, 2012 to December 31, 2015. We manually search these CEOs' internet biographies and the news for the reasons of each turnover and identify the events involving corrupt behavior.

Next, to collect corruption cases of non-CEO top executives, we obtain the list publicized by the Commission of Discipline Inspection of CPC's Central Committee which discloses investigated high-level party members, including executives of large SOEs.<sup>12</sup> We manually read through the list and identify the investigations of 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. 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 corruption-related keywords that are commonly used to describe corrupt behavior and investigations (provided in Section A.2 of the Internet Appendix). Due to the large number of news articles, we first obtain the list of 35,353 director turnovers during our sample period from CSMAR, and narrow down the sample to the 40,000 news articles that mention names of at least one of these directors. We then search corporate announcements and these news articles and identify

---

<sup>11</sup> Eligible titles include CEO, Chairman of the board, director on the board, firm controller, Vice President, and CEO/Chairman or Vice President of the parent company. See Table 1 for distribution of manager types. The anti-corruption campaign is still continuing, and December 31, 2015 is when our sample construction ends.

<sup>12</sup> The disclosures can be found at <http://www.ccdi.gov.cn/scdc/>.

1,049 corporate announcements and 2,236 news articles containing the key words. We manually read them through to identify an additional sample of corruption cases.

We further investigate the details of managers' corrupt behavior from the above three sources, and use a conservative approach to exclude a small number of events where: 1) the manager's corrupt behavior took place before joining the company; 2) the manager's corrupt behavior is unrelated to the firm;<sup>13</sup> 3) the manager is found clean after the investigation (one event); or 4) the firm experiences a reverse merger or major asset restructuring within one year prior to the corruption investigation, in which case the top manager might not have full control of the firm (two events).

When a firm experiences several investigations involving multiple executives, we keep only one event per firm by choosing the most important manager or the earliest event if the investigated managers are of similar importance. 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 becomes available. We also include in our sample the cases where the parent company's top managers engage in corrupt behavior, as Chinese parent companies have very tight control of their 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 behavior. The size of this sample as of December 31, 2014 is 5.73 trillion RMB (USD 936 billion) in market capitalization. They account for 5.6% of China's listed firms, and 18.1% of market capitalization.

## **2.2 Summary statistics**

Panel A of Figure 1 plots the distribution of sample firms by year, where firms are divided into SOEs and non-SOEs. A firm is classified as SOE if its controlling shareholder is affiliated with the

---

<sup>13</sup> For example, a vice president of a listed firm represented a blockholder and his corrupt behavior occurred in the blockholder firm instead of the listed firm.

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 is directly obtained from the CSMAR database, and we manually check and correct misclassifications. Panel A of Table 1 shows that the anti-corruption campaign has accelerated since its start in December 2012, as the number of firms investigated increased from just one in 2012 (December) to 28 in 2013, 50 in 2014, and 71 in 2015. Additionally, 86.7% of the investigated firms are SOEs, which is consistent with SOE managers having greater conflicts of interest and resources compared to non-SOEs and reflects the fact that SOEs are direct targets of the campaign.<sup>14</sup> Panel B of Figure 1 plots the positions of corrupt managers by year, and Panel A of Table 1 reports the numbers. Out of the 150 sample firms, 67 have corrupt CEOs, 25 have corrupt non-CEO executives, and 58 have corrupt top managers (CEOs or Vice Chairmans) from the parent company.

Panel C of Figure 1 plots the distribution of corrupt behavior (not mutually exclusive) for SOEs and non-SOEs and Panel B of Table 1 presents the numbers. There is a stark contrast between SOEs and non-SOEs in terms of corrupt behavior. Specifically, out of the 130 SOEs, the most common corrupt behaviors are receiving bribes (82), embezzling company funds (25), and illegally benefiting family members or relatives (29). 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 corrupt behavior by managers. For the 20 non-SOEs in our sample, we are able to identify specific corrupt behaviors for 18 of them, where 17 non-SOE managers bribe other parties, and the other firm's manager is investigated for embezzling company funds. These results shed light on the vastly different incentives and forms of corruption

---

<sup>14</sup> For example, the Eight-Point Regulations applies to SOEs but not non-SOEs. Our sample composition is in line with Ke, Liu, and Tang (2017) who construct a sample of 62 investigated firms during the campaign and find that 92% of investigated firms are SOEs. According to Song and Xiong (2017), the size of state sector, while previously shrinking, has stabilized to around 30% of the industrial sector.

across ownership structures.

## **2.3 Measures of potential corruption**

Motivated by the existing literature, we examine a broad set of measures that capture five aspects of corruption: corporate governance and managerial incentives, related-party transactions, regulation breaches and entertainment expenditures, inefficiencies, and corruption-related postings from a popular online investor forum. The definitions of our corruption proxies are briefly listed below with more details in Section A.3 of the Internet Appendix.

### **2.3.1 Corporate governance and managerial incentives**

Poor corporate governance or distorted managerial incentives can lead to agency problems [Jensen and Meckling (1976)], and this relation has been documented in China [as reviewed by Jiang and Kim (2015), Fan, Wei, and Xu (2011)]. We examine four measures.

Our first measure is monitoring by minority shareholders. This is proposed by Chen, Chen, Schipper, Xu, and Xue (2012) who argue that because China is characterized by weak shareholder protection and controlling shareholders that exploit other shareholders, high and concentrated ownerships of minority shareholders are an important monitoring mechanism. We follow their approach and construct the measure as the total ownership of the second to fifth largest shareholders, multiplied by the Herfindahl index of their ownerships. Our findings also hold when we do not multiply share ownership by the Herfindahl index.

Our second measure is CEO compensation. Previous studies, such as Borokhovich, Brunarski, and Parrino (1997) and Coles, Daniel, and Naveen (2014), have shown that higher CEO compensation indicates poor corporate governance and entrenched CEOs. High CEO compensation could be the outcome of extraction of money from the firm by the CEO, and the Chinese government seems to believe this is the case as it started capping the salary of SOE managers in 2015. We construct the measure as the sum of salary, bonus, value of granted restricted stocks, options, and appreciation

rights, scaled by total assets.

Our third measure is CEO pay-for-performance sensitivity, a commonly used measure of managerial incentive. We follow the literature [Core and Guay (1999), Bergstresser and Philippon (2006)] to construct this measure using CEO's holdings of the company's stocks and options. Our fourth measure is a near-retirement dummy which equals one if CEO's age is greater than or equal to 59, and zero otherwise. China has a strict retirement policy that requires government officials, including employees of SOEs, to retire at the age of 60 with the exception of top national leaders. There have been many news articles about distorted incentives and corrupt behavior for government officials and SOE managers approaching retirement, a phenomenon generally referred to as the "59 Years Old Phenomenon".<sup>15</sup>

### **2.3.2 Related party transactions**

The existing literature suggests that related-party transactions can be associated with unethical or illegal behavior by 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 "tunneling" behavior in Chinese firms, where controlling shareholders take advantage of the firm and other shareholders through large amounts of borrowing from the company at very low or no cost. 3) Other receivables from parent company (scaled by total assets), as Jiang, Lee, and Yue (2010) suggest that this also reflects tunneling behavior through trade credit.

---

<sup>15</sup> For example, the 2014 China Legal Development Yearbook issued by the Chinese Academy of Social Science shows that the "59 Years Old Phenomenon" is pronounced in China's corruption cases (<http://www.chinanews.com/fz/2014/02-24/5873850.shtml>). We also repeat the analysis using 57 or 58 to construct the dummy variable and the results are similar. If the investigated manager for an event firm is not the CEO but another top manager, we use the investigated manager's age rather than CEO age to construct the dummy.

### 2.3.3 Regulation breaches and business entertainment expenditures

The third group of measures includes regulation breaches and entertainment expenditures, both 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 by firm-year. In counting the number of breaches, we exclude those described as "non-material accounting errors", because they are associated with common accounting mistakes that are unlikely to be associated with corruption (a complete list of regulation breach categories provided in Section A.3 of the Internet Appendix).<sup>16</sup> The second measure, business entertainment expenditures (BEE), is widely considered by news media and academic studies to be associated with corruption because it is often used by firms as perks to employees and especially executives, or to establish relations with other parties to gain business [e.g., Cai, Fang, and Xu (2011)].

### 2.3.4 Inefficiencies

Corrupt behavior by top managers, especially embezzling funds and receiving bribes, can increase the firm's costs or misallocate the firm's resources. We therefore examine two measures of inefficiency. Our first measure is operational inefficiency, calculated as the difference between sales growth and net income growth. News articles about investigated firms often mention that corruption caused these firms to have a much slower growth of profit than their growth of revenue.

Our second measure is investment inefficiency proposed by Biddle, Hilary, and Verdi (2009). This measure is at the firm level and based on the neo-classical framework where the marginal Q ratio should be the only determinant of capital investment. The departure from this optimal level is considered abnormal, possibly indicative of friction-induced inefficient investment. News articles about our event firms also mention abnormal investment behavior associated with instances of

---

<sup>16</sup> To avoid any look-ahead bias, we define the year of a regulation breach as the year when the breach is disclosed. On average there is a time lapse of 0.7 year between disclosure and the last incident of a regulation breach.



corruption. We estimate cross-sectional firm-level regressions of corporate investment on sales growth within industry-years, and calculate the measure as the absolute value of the residual.

### **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. We download all the posts discussing listed companies in GuBa and identify a post as corruption-related if its title contains a corruption-related keyword (as described in Section A.3 of the Internet Appendix). Corruption postings for a firm-year are scaled by the total number of posts for the firm-year.

## **3. Is the Corporate Anti-Corruption Campaign Capturing More Corrupt Firms?**

We first examine if the campaign is capturing more corrupt firms. If the campaign is a sincere effort to reduce corruption, then we expect that event firms will have a greater degree of corruption than peer firms.

### **3.1 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.<sup>17</sup>

Figure 2 plots firm-level corruption measures 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 drivers of investigations, we focus on the corruption measures in years  $t-1$  and  $t-2$  but also report

---

<sup>17</sup> 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 the event firm analyses by excluding these five event firms, and the results are unchanged (reported in Section A.4 of the Internet Appendix).

those in year  $t$  which is partially before the investigation. The numbers and statistical tests behind the differences of event and matched firms in Figure 2 are shown in Table 2. The relatively small sample size allows for the hand-collection of many of the political measures, but may make it difficult to observe statistical significance due to a potential lack of power. Despite these limitations, many of the measures are significant. Eleven of the twelve corruption measures indicate a greater degree of corruption in event firms than in matched firms in year  $t-1$ , and seven of them are statistically significant. Specifically, Table 2 shows that in years  $t-1$ , when compared to matched firms, event firms have statistically significantly less monitoring by minority shareholders, higher CEO compensation, lower pay-for-performance sensitivity, more near-retirement managers, higher related-party sales, and more operational inefficiency. Additionally, corruption postings are significantly higher for event firms, indicating that investors more often discuss corruption issues about event firms than peer firms. Among the remaining measures in year  $t-1$ , related party loans, other receivables, and investment inefficiency are in the correct direction but marginally insignificant.

Regulatory breaches and business entertainment expenditures show no noticeable differences between investigated and matched firms in year  $t-1$ . The fact that business entertainment expenditures are no higher for event firms is puzzling because the common perception is that entertainment expenditures are a main focus of the campaign. It is possible that entertainment expenditures are so pervasive in the Chinese corporate world that it is a noisy signal of differential corruption across firms. This result, together with our finding that other measures predict corruption investigation, could indicate that the campaign is targeting various aspects of corruption beyond entertainment expenditure. Event firms' regulation breaches are higher in year  $t$  than matched firms but the difference is marginally insignificant. Overall, the results in Figure 2 and Table 2 show that event firms are more corrupt than peer firms along many of the corruption measures.

### **3.2 Probit regressions of investigation on corruption measures**

We estimate probit regressions to jointly test for a relationship between our various corruption measures and the occurrence of an investigation after controlling for various firm-level characteristics. 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 otherwise. The independent variables are corruption measures of the year prior to corruption investigation (year  $t-1$ ). We further control for firm size, SOE status, year fixed effects, industry fixed effects, and region fixed effects.<sup>18</sup>

Models (1) to (5) in Table 3 present regressions on the five groups of corruption measures, respectively. Consistent with the univariate analysis, the signs of coefficients of most corruption measures indicate that the degree of corruption positively predicts corruption investigation. The only exception is business entertainment expenditures (BEE) in model (3), where the coefficient is negative rather than positive, but the  $t$ -statistic is only  $-0.21$ .<sup>19</sup> Despite the small sample, the coefficients of monitoring by minority shareholders, CEO compensation, CEO near-retirement dummy, related-party sales, related-party loans, operational inefficiency, investment inefficiency, and corruption postings are statistically significant.<sup>20</sup>

Model (6) includes all corruption measures, and the sample size is reduced by over one-third because of missing BEE. The results are similar as previous models, except the CEO compensation, investment inefficiency, and corruption postings become insignificant with the signs of coefficients unchanged. However, other receivables from parents become significant. To address the concern of

---

<sup>18</sup> China is divided into seven regions including North, Northeast, East, Central, South, Southwest, and Northwest. For robustness, we repeat the regression analyses using alternative fixed effects such as year fixed effects and industry-region fixed effects, or industry fixed effects and year-region fixed effects. These results are in Section A.5 of the Internet Appendix.

<sup>19</sup> Chinese firms disclose business entertainment expenditures on a voluntary basis, which could introduce noise as high BEE firms might choose not to disclose. For robustness, we repeat the regression analysis using an alternative measure of BEE that includes travel expenses in Table IA.10 of the Internet Appendix. The coefficient on this alternative BEE measure turns positive but remains insignificant, with  $t$ -stat equal  $0.66$  in the full model.

<sup>20</sup> For CEO compensation, we also examine the alternative measures of CEO compensation scaled by operating profit, CEO compensation of matched non-SOEs, or employee compensation. Table IA.11 of the Internet Appendix report probit regressions of investigation on these alternative measures, and their coefficients remain significantly positive.

reduced sample size, we repeat the regression in Model (7) without including BEE, and these measures become significant with the exception of investment inefficiency which is now marginally insignificant (t-stat 1.63). Regarding economic significance, other receivables from parents have the largest impact, where one standard deviation increase is associated with an 11.0 percentage points increase in the probability of investigation. The marginal effects for a one standard-deviation increase in the other measures are also large, such as the near-retirement dummy (9.3 percentage points), monitoring by minority shareholders (8.8 percentage points), corruption postings (7.7 percentage points), operational inefficiency (7.4 percentage points), related-party loans (6.8 percentage points), related party sales (6.4 percentage points), and CEO compensation (6.2 percentage points).

Since the anti-corruption campaign directly targets corrupt behaviors of members of the Chinese Communist Party and most SOE managers are Party members, we conduct the regression analysis only for SOE firms. Table 4 presents regression results corresponding to Table 3 but using only SOE firms. The results are similar to those in Table 3 in terms of both magnitude and statistical significance. Interestingly, entertainment expenditures is again insignificant like in the full sample.

It is interesting that firms with little monitoring by minority shareholders may have more corruption. Additionally, the “59 years-old phenomenon” widely discussed by the media, where the strict retirement policy at age 60 may trigger distorted incentives of managers, is supported by our result on the near-retirement dummy. The result of corruption postings indicates that the on-line outlets of grass-root Chinese investors can provide useful information in a setting of dominant government media.

Overall, our results indicate that investigated firms are generally more corrupt along many dimensions than their peers. We will further discuss possible interpretations of this finding below after examining the political dimension.

#### 4. Are political factors related to corporate investigations?

Political factors could influence corporate investigations through two main channels. Connections with non-investigated politicians can serve as protection to the firms and decrease the probability of investigation (a “protection effect”). However, political connections can increase the probability of corporate investigation (a “spillover effect”) where a political connection draws a firm into an investigation. The investigations that occur due to political connections could be because the firm is caught in the middle of a campaign to weaken or eliminate a political enemy, or because the campaign has caught a corrupt politician associated with a firm. We examine 14 measures of political connectedness that provide a thorough examination of how political factors impact the corporate campaign, but nevertheless will not capture all political influences. We discuss possible interpretations of our findings at the end of this section.

##### 4.1 General government connection

We first examine a measure of general government connection proposed by the existing literature [e.g., Fan, Wong, and Zhang (2007), Fisman and Wang (2015)]. The measure is a dummy variable equal to one if a C-Suite executive of the company previously served as a high-ranking official within the government.<sup>21</sup> We find that 43.3 percent of the event firms have general government connections, over twice that of matched firms (18.7 percent). More formally, we estimate similar probit regressions as in Table 3 but with government connection measures. In Model (1) of Table 5, the coefficient of government connection is significantly positive, suggesting that, consistent with the

---

<sup>21</sup> Chinese firms have different organization structure from U.S. firms, and we define “C-Suite executives” to be CEO, CFO, board chairman, and vice-chairman. If the managers investigated are top managers of parent company, we construct the political connection measures using the managers of the parent firm. The Chinese political system has five ranks: 1) Nation (“Guo Ji”, 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.

spillover effect, firms with closer relations to government are more likely to be investigated.

We further examine whether the managers' government working experience was with the central or local government. Central government connections could provide protection for firms because the anti-corruption campaign was launched and has been carried out largely by the central government (CPC central leadership). In Model (2) of Table 5, the coefficient of local government connection remains significantly positive but that of central government connection is insignificant, possibly indicating that the protection effect counteracts the spillover effect at the national level.

#### **4.2 Specific connections with non-investigated and investigated officials**

To more directly analyze the spillover and protection effects, we separately examine connections with non-investigated officials and those with investigated officials, using samples of the very top leaders, national leaders, and general government officials.

We first look at loyalties using school-ties [Cohen, Frazzini, and Malloy (2010)] with the universities attended by the seven members of the 18<sup>th</sup> Politburo Standing Committee (PSC) of CPC's Central Committee, the most powerful decision-making body in China. The members of the 18th PSC were elected in November 2012, and their terms ended in October 2017. We identify cases where a C-Suite executive of the company graduated from the same university as a PSC member. For both event firms and matched firms, we manually read their managers' biographies (most from CSMAR and some from online searches) and collect the university data.<sup>22</sup> The universities attended by the top seven leaders include the two most prestigious universities in China, Tsinghua University (school of Xi, Jinping) and Peking University (PKU, school of the Prime Minister Li, Keqiang), as well as Xiamen University.

For a comparison, we also look at school ties with Zhou, Yongkang, the highest-ranked

---

<sup>22</sup> We also considered a school-tie measure capturing whether leaders and managers overlap at a university. However, possibly because of mandatory retirement requirements, there is little intersection between firm managers and national leaders at universities. Managers of SOEs are required to retire at 60, whereas the average age for PSC members is 67.

politician investigated during the campaign. Zhou was once the country's third most powerful leader and a member of the 17<sup>th</sup> PSC. According to Chinese officials, Zhou plotted to usurp the party's leadership and seize state power.<sup>23</sup> In 2013 the Party began an investigation into Zhou and arrested a number of Zhou's high-ranked former subordinates. After a corruption probe Zhou received lifetime incarceration. He attended China Petroleum University and had strong ties with the oil industry.

Figure 3 plots the school ties for investigated firms and matched firms. Each line connecting firms with a university represents a C-Suite executive from one of the firms that graduated from the university. Red (blue) lines are for investigated (non-investigated) firms.<sup>24</sup> Interestingly, firm with executives ties to China Petroleum University are much more likely to be prosecuted. In a stark contrast, firms with executive ties to Tsinghua or Peking University appear much less likely to be investigated.

To examine this relation more formally, Model (3) of Table 5 presents the probit regression of investigation on university affiliation, which is measured for a company as the number of connections where a C-Suite executive of the company graduated from the same university as a PSC member. We also examine birthplace connections with the top seven leaders using a dummy variable that equals 1 if the company's headquarter is located in the home province of a PSC member, and 0 otherwise. The coefficient of university affiliation is significantly negative (t-stat -4.14) and that of birthplace connection is small and insignificant. These results are consistent with Figure 3 that university affiliation with the existing leadership is negatively related to corporate investigation,

---

<sup>23</sup> See the news article from *South China Morning Post* (<http://www.scmp.com/news/china/policies-politics/article/2116176/coup-plotters-foiled-xi-jinping-fended-threat-save>). The report also says that Wang Qishan, China's top graft-buster, said that the central authorities managed to punish Zhou so as to eradicate a number of conspirators and ambitious schemers within the party. For another example, see the news article from *Los Angeles Times* (<http://articles.latimes.com/2013/dec/16/world/la-fg-wn-china-corruption-zhou-yongkang-20131216>).

<sup>24</sup> The figure does not include three universities attended by the top seven leaders but not corporate managers (Kim Il-sung University, Harbin Engineering University, and Northwest University). The university affiliation analysis excludes the Party School of the Central Committee of CPC, attended by a current PSC member. Rather than a normal school, the Party School is a unit of the Central Committee of CPC training (high-rank) officials. For robustness, we repeat the analysis of university affiliation including the Party School and the results remain similar (Table IA.12 of the Internet Appendix).

consistent with the protection effect.

While the result on university affiliation is consistent with a protection effect or political favoritism from current leadership, an alternative explanation is that managers who graduated from the schools, especially Tsinghua and Peking could be less corrupt than their peers. Tsinghua and Peking are the top two universities in China, so their graduates could be more self-disciplined or operate with greater career potentials in mind. To examine this alternative explanation, we repeat the regression analysis using university affiliations with two alternative pairs of universities: The top 3<sup>rd</sup> and 4<sup>th</sup> universities (University of Science and Technology of China and Fudan University), and the top 5<sup>th</sup> and 6<sup>th</sup> universities (Shanghai Jiao Tong University and Zhejiang University) based on the U.S. News & World Report's rankings. While these universities are also prestigious in China, they are not attended by any of the top 7 leaders like Tsinghua and Peking. The results in Table IA.13 shows that in the regressions of corporate investigations, the coefficients of both alternative university affiliation measures are insignificantly positive while the coefficient of affiliation with Tsinghua and Peking is significantly negative (t-stat -3.16). We combine the 3<sup>rd</sup> to the 6<sup>th</sup> Universities into one group, and the result indicates that affiliations with these Universities are associated with an insignificantly higher probability of investigation (t-stat 0.48). These results suggest that our finding of university affiliation is driven by protection effect rather than self-discipline.

Model (4) of Table 5 presents the regression including a dummy variable which equals one if the firm is connected to the investigated former leader Zhou, Yongkang. We classify firms located in Sichuan province or in the oil industry as connected to Zhou because it is widely recognized that Zhou's power bases are "Sichuan Gang" and "Oil Gang".<sup>25</sup> The result shows that a connection with Zhou is significantly positively related to the probability of investigation, which is consistent with the

---

<sup>25</sup> The figure [https://en.wikipedia.org/wiki/Zhou\\_Yongkang#/media/File:Relative\\_map\\_of\\_Zhou\\_Yongkang.png](https://en.wikipedia.org/wiki/Zhou_Yongkang#/media/File:Relative_map_of_Zhou_Yongkang.png) illustrates the four circles of Zhou, including family members, public security service, Sichuan circle, and oil system.



spillover effect.

Next, we extend the analysis to 105 national leaders identified using the official website of the government of China (described in Section A.7 of the Internet Appendix), among them six are investigated during the campaign and the other 99 are not investigated (this sample does not include the top 7 leaders whose university and birthplace affiliations are examined above). Model (5) of Table 5 presents a regression using the measures of university affiliation and birthplace connection with both investigated and non-investigated national leaders.<sup>26</sup> University affiliation with investigated leaders is significantly positively related to the probability of investigation (t-stat 1.96), while that with non-investigated leaders is significantly negatively related to investigation (t-stat -2.41). Birthplace connection with investigated leaders is insignificantly positive (t-stat 0.77) while that with non-investigated leaders is significantly negative (t-stat -2.06). Furthermore, we obtain a list of 1,021 general government officials investigated from December 2012 to December 2015 published by the CPC's Central Discipline Committee. We focus on birthplace connection because university information is missing for the majority of these politicians. Regression results using this measure are shown in Model (6), and the coefficient of the birthplace connection with these politicians is insignificant (t-stat -1.04).

Overall, the results on connections with investigated and non-investigated politicians provide evidence of both spillover and protection effects on corporate investigations, which we will further discuss at the end of this section.

### 4.3 Provincial political investigations

We further examine whether political investigations in a province spills over to local corporations. We construct two measures of political investigation at the province level following Ang, Bai, and Zhou (2016). “Graft-Tigers” is the average rank of officials investigated in a province, which

---

<sup>26</sup> When we construct birthplace connections for national leaders and later the 1,021 investigated officials, we construct the measure as the number of politicians having the same home province as the company's headquarters.

captures intensity of political investigation. “Graft-Flies” is the total number of officials investigated in a province, which captures the scope of political investigation. Ang, Bai, and Zhou find that yields of China’s municipal bonds increase as a result of local political investigation as captured by the “Graft-Tigers” measure. For our analysis, we construct the measures “Province Graft-Tigers” and “Province Graft-Flies” similarly to Ang, Bai, and Zhou but instead use investigated provincial politicians in the six months prior to a corporate investigation. Because provinces with more fractures and counties tend to have a larger official base, we scale “Province Graft-Flies” by the number of counties in the province. These are included in Model (7) of Table 5, where the coefficient for “Province Graft-Tigers” is positive and significant at the 0.10 level (t-stat 1.80), and that of “Province Graft-Flies” is insignificant (t-stat -0.86). This result provides some mixed evidence that intensity of local political investigations positively predicts corporate investigation.

We also construct a variable to measure the timing of local political investigations based on the inspections by the CPC’s central leading group. During the campaign, the group sends inspection teams to provinces, SOEs, and government units, and the inspections each takes about three months. The measure is a dummy equal to one if a team carried out the investigation in the investigated firm’s province in the six-month period prior to the investigation. This measure is included in Model (8), where the coefficient of the investigation team dummy is significantly positive (t-stat 1.99), consistent with local political investigations having a positive impact on corporate investigations.

We include all the political measures in Model (9) of Table 5, where five of them remain significant. The sample size is smaller because the two provincial measures require the previous six-month data and exclude investigation events in early 2013. Model (10) repeats the regression without including the two provincial measures, where the results remain similar but t-statistics of the coefficients generally increase. In particular, local government connections and affiliations with Zhou, Yongkang increase the probability of investigations, whereas university affiliations with the top seven

leaders and birthplace connections with non-investigated national leaders decrease the probability of investigation. Regarding economic significance, university affiliation with top seven leaders has the largest impact, where one standard deviation increase is associated with a 19.8 percentage points decrease in the probability of investigation. The marginal effects for a one standard deviation increase in the other measures are also large, such as the association with Zhou Yongkang (13.8 percentage points), local government connection (9.3 percentage points), birthplace connection with non-investigated national leaders (-8.6 percentage points) or with investigated national leaders (4.4 percentage points), province graft-tigers (6.0 percentage points), and investigation team in the province (4.6 percentage points).

For robustness, we also repeat the regression analysis for SOEs. The results (in Table IA.14) are similar to those using the full sample in Table 5. The findings suggest that political factors seem to strongly influence the corporate anti-corruption campaign, and evidence supports both a protection and a spillover effect.

#### **4.4 Are corporate investigations entirely driven by political investigations?**

Because we find evidence that political factors impact corporate investigations, a natural question is whether the corporate anti-corruption campaign is entirely driven by political factors. Table 3 includes different sets of political measures in regressions, but surprisingly, the coefficients of the corruption measures remain similar both in magnitude and in statistical significance for all model variations. For example, in Model (10) of Table 5 where all political measures are included, most of the eight corruption measures which are significant in the other models of Table 5 remain significant with the only exception being related-party sales.

We further examine pseudo  $R^2$ s of the probit models to compare the explanatory power of our corruption measures and political factors. The  $R^2$  is 3.8% with only control variables, 17.8% with corruption measures and controls, 22.6% with political measures and controls, and 38.7% with

corruption measures, political measures, and controls. There is a 14 percentage-point increase in  $R^2$  for the corruption measures beyond the control variables, and a 19 percentage-point increase for the political variables. These results indicate that both corruption measures and political proxies explain a sizeable portion of the cross-sectional variation in investigations.

To further investigate possible political motives of corporate investigations, we classify the news articles surrounding the investigation of event firms to identify a potential association with political investigations. We find direct evidence of an association with political investigation for 41 sample firms investigated (27.3% of sample), indirect evidence for 13 sample firms investigated (8.7% of sample), and no evidence for 96 sample firms investigated (64.0% of sample). Indirect evidence refers to cases where a corporate manager has a personal relationship with an investigated politician (e.g., attending the same private club), but there is no direct evidence that the manager's investigation is the consequence of the politician's investigation.

The news coverage about corporate investigation may be incomplete and could fail to capture some connections to a political investigation. To validate the news analysis, it is useful to recall that the anti-corruption campaign (e.g., Eight-Point Regulation) targets SOEs but not non-SOEs. Therefore, we expect investigations of non-SOEs to be mainly due to their involvement in ongoing political investigations. This is verified by the news analysis. Out of the 20 non-SOEs investigated, 15 have direct evidence of a political connection, three have indirect evidence, and only two cases (10%) have no evidence. This is a sharp contrast to investigated SOEs, where 26 out of 130 have direct evidence, 10 have indirect evidence, and 94 (72%) show no evidence of a connection. Thus, SOEs seem to be directly examined for corrupt behavior, rather than just being targeted because of connection to an ongoing political investigation.

Next, we repeat the regressions on corruption measures after excluding the event firms with direct or indirect evidence of association with a political investigation. Table IA.15 of the Internet

Appendix shows that the coefficients for the corruption measures remain similar for this smaller sample, indicating that the effects shown by our corruption measures are not driven solely by measured political investigations.

#### **4.5 Discussion and Interpretations**

There are strong linkages between corporate manager investigations and political investigations. How to interpret these findings? The most natural interpretation is that the campaign has a strong political component which ensnares corrupt firms. However, an alternative explanation is that a campaign solely focused on corruption would capture corrupt politicians and those corrupt politicians would then be connected to corrupt firms. So, could the campaign be purely focused on corruption? The analysis of Zhou, the previous leader is instructive. Since he was clearly part of a failed party struggle, the strong reaction against him seems at least partly motivated by politics. The fact that firms connected to him both through the University and the oil industry experienced a large increase in investigation probability indicates that the purging was broad. Additionally, the fact that connections with the current PSC is associated with a strong decrease in investigation probability indicates either a political protection effect, or that graduates of the very top Chinese Universities have better job prospects are less likely to engage in corruption. Inconsistent with the second interpretation, we do not observe decreases in the investigation probability for managers affiliated with other top universities. These finding suggests that investigators may avoid targeting managers from firms with a Tsinghua or Peking affiliation, as doing so could be considered an affront to the current leadership. Thus, the evidence points to a strong political component.

Is it possible that the campaign is mostly politically motivated and the corruption measures are highly significant because corrupt firms have unfavorable political ties that we do not observe? This possibility cannot be completely ruled out because there are likely other political connections that we are unable to capture, like those through friends or relatives. However, the 14 extensive measures

of political connection minimize this possibility, as does the fact that magnitude of variation explained by corruption measures is large and similar to that explained through political measures. Overall, we caution that our empirical measures are not causal and are difficult to pin to precise motives behind the measures. The findings show that the campaign is prosecuting corrupt firms, but also appears to contain a political spillover and protection effect dimension.

## **5. Is the Anti-Corruption Campaign Effective at Reducing Corporate Corruption in China?**

A key question about the anti-corruption campaign is whether or not it accomplishes its stated purpose of reducing corruption. To answer this question, we examine corruption measures for all Chinese listed firms.<sup>27</sup>

### **5.1 Corruption measures for all firms: Before and after the start of anti-corruption campaign**

Figure 4 plots the annual averages of corruption measures for all Chinese listed companies from 2005 to 2015, and we focus on the changes around 2012, the start of the anti-corruption campaign. Panels A to D show that improvement associated with the anti-corruption campaign seems to concentrate in business entertainment expenditures (BEE), the direct target of the campaign. Specifically, Panel C shows a dramatic decline in BEE, which provides formal support for the intense media coverage of China's efforts to eliminate luxury gifts and social events with the campaign. The results on other corruption measures are more mixed. Specifically, Panel A shows that CEO compensation declines slightly after the campaign and CEO pay-for-performance sensitivity increases after the campaign. In Panel B, the related-party transaction measures overall do not exhibit obvious changes. Panel C shows that investment inefficiency decreases after 2012 but operational inefficiency

---

<sup>27</sup> There are two types of shares in China's stock markets. A-shares are denominated in RMB and traded by only Chinese citizens. B-shares are denominated in either US dollars or Hong Kong dollars, and traded by foreign investors or domestic residents using foreign currency. We follow the literature and exclude the firms that issue only B-shares but not A-shares.

increases. Therefore, while the anti-corruption campaign successfully reduced business entertainment expenditures for Chinese firms, its effects on other dimensions of good governance are quite limited.

Corresponding to Figure 4, Panel A of Table 6 presents annual corruption measures during 2005-2015 and statistical tests of the differences between 2013~15 and 2011. There is a significant decrease in business entertainment expenditures after the start of the anti-corruption campaign. Pay-for-performance sensitivity increases significantly after the campaign, and other receivables also decrease, but several measures even demonstrate more corruption. In particular, related party loans and operational inefficiency significantly increase rather than decrease. Regulatory breaches also increase, which could be due to more violations or a sign of greater enforcement. Other measures such as CEO compensation, related party sales, and investment inefficiency do not experience significant changes. We also conduct robustness test of SOEs in Panel B of Table 6 because SOEs are direct targets of the campaign. Different from the full sample, SOEs experience a significant decline in CEO compensation, which is consistent the recent effort by Chinese government to cap the salary of SOE managers. The results on other measures are similar to those of the full sample.<sup>28</sup>

## **5.2 How does the campaign impact the investigated firms?**

We also analyze changes in corruption measures for event firms after an investigation is finished. For each event firm, we identify a matched firm using the propensity score matching approach (PSM) based on pre-event corruption measures and firm characteristics (details in Section A.10 of the Internet Appendix).<sup>29</sup> CEO compensation significantly decreases (improves) but related-party loans significantly increases (deteriorate), and other measures remain little changed. Overall,

---

<sup>28</sup> Table IA.16 of Internet Appendix further repeats the analysis for non-SOEs, and the results are similar to those of full sample and SOEs.

<sup>29</sup> This analysis restricts the sample to 69 firms as investigations in 2015 are dropped because of missing data for year t+1. Table IA.17 in the Internet Appendix reports corruption measures in years t-1 and t+1 for event firms and matched firms, where t is the year of corruption investigation. Because the focus is corrupt behavior, we exclude monitoring by minority shareholders and CEO near-retirement as they are factors that affect corruption rather corrupt behavior.

there do not seem to be dramatic improvements in the corruption measures for event firms relative to matched firms.

We further examine how the investigations affect the event firms' stock prices and corruption measures. To study market reaction to corruption investigations, we calculated cumulative abnormal returns (CARs) of event firms in the  $[-1,+1]$  and the  $[-1,+15]$  windows, where day 0 is the announcement day of investigation and report the results in Table 7.

Panel A of Table 7 shows a CAR  $[-1,+1]$  of around -1.5% (t-stats between -2.63 and -2.77), revealing a negative market response to investigations. CAR  $[-1,+15]$  remains negative but becomes insignificant (t-stat between -0.83 and -1.05). Since long-term returns can be noisy as they include various events during the long-term window, we focus on the short-term CARs that provide us with cleaner test. We nevertheless examine the long-term windows  $[-15,+125]$  and  $[-15,+250]$  and the CARs are insignificant, which suggests that the negative impact could be largely temporary.

Panel B further reports CARs for non-event firms that are related to event firms through customer-supply relation, locating in the same province, and connections among managers and directors.<sup>30</sup> Customers of event firms exhibit significantly negative CARs in the  $[-1,+1]$  window, whereas other related firms experience insignificant price responses.

### **5.3 The effect of anti-corruption campaign on corporate disclosure, financial markets, and foreign investments**

We first examine if the anti-corruption campaign positively impacts China's corporate culture from the perspective of accounting manipulation. Accounting manipulation is also directly associated with corruption and Fan, Guan, Li, and Yang (2014) find that when political networks are broken

---

<sup>30</sup> Customer-supplier relation is identified using voluntary disclosure by Chinese firms on the names of top five customers and suppliers. The firm related to an event firm through manager and director connection is the non-event firm whose C-Suite managers and directors have the highest total number of university affiliations and birthplace connections with those of the event firm. For supplier firms, we exclude an outlier which has a return of 77% due to a restructuring event.



earnings management decreases. Dass, Nanda, and Xiao (2014) and Huang (2016) also document a greater tendency to manage earnings for U.S. firms that are more corrupt.

Our first measure of accounting manipulation is discretionary accruals, which has previously been used to examine Chinese firms [e.g., Liu and Lu (2007)]. A higher value of absolute discretionary accruals indicates greater earnings manipulation. Our second measure is discontinuity in earnings distribution around zero [Hayn (1995), Burgstahler and Dichev (1997)]. A much higher number of firms with small positive earnings than that of firms with small negative earnings indicates earnings manipulation.<sup>31</sup>

Figure 5 plots earnings distributions for all Chinese listed firms before and after the start of the campaign. Panel A shows that there is a strong earnings discontinuity around zero for Chinese firms overall during 2005-2011, indicating massive earnings manipulation in China's corporate world before the campaign. In the meantime, Panel B shows that earnings discontinuity remains similar in the 2013-2015 period.<sup>32</sup> The change in absolute discretionary accruals is significantly negative but the drop started in 2012 which is largely before the anti-corruption campaign. The difference in earnings discontinuity is insignificantly positive. Overall, these results show that the anti-corruption campaign does not reduce accounting manipulation for Chinese firms.

We further examine whether the anti-corruption campaign reduces leakage of inside information and inside trading, both of which provide insight on the financial market environment. Our test design follows Griffin, Hirschey, and Kelly (2011) and examines abnormal stock return volatility on earnings-announcement days (Details of the construction described in Section A.3 of the Internet Appendix). Lower stock return volatility indicates fewer price movements upon

---

<sup>31</sup> Chinese regulation adds to the incentive for Chinese firms to avoid negative earnings, as 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 a negative signal to the market. The construction of these two measures are detailed in Section A.3 of the Internet Appendix.

<sup>32</sup> For statistical analyses, we present in Table IA.18 the annual statistics from 2005 to 2015 as well as the differences [2013~2015 – 2011].

announcement and therefore more information leakage or insider trading. Table IA.16 reports the volatility measures from 2005 to 2015, which shows that stock return volatility on announcement days decreases rather than increases after the anti-corruption campaign, and changes are statistically significant. This result suggests that the campaign may not improve the information environment of China's financial markets.<sup>33</sup>

Previous studies such as Wei (2000) and Habib and Zurawicki (2002) document that foreign direct investment (FDI) is affected by the host country's corruption. We therefore examine if the anti-corruption campaign positively affects FDI in China. If the anti-corruption campaign increases FDI by promoting competition and reducing frictions, then we expect the effect on FDI to be stronger in provinces with lower levels of marketization. We use the provincial-level marketization index developed by the China's National Economic Research Institute (Fan, Wang, and Zhu, 2011) based on official statistics and enterprise and household surveys.

We estimate a regression where the dependent variable is annual province-level FDIs, either in dollar value or scaled by GDP of the province. Consistent with our approach of calculating the difference [2013~2015 – 2011] for other measures in Table 6, we include the years 2011 and 2013-2015 for this analysis and construct a post-campaign dummy which equals one for the years 2013-2015. The main independent variable is the interaction of the province-level marketization index and the post-campaign dummy, and we further include their first-degree terms.<sup>34</sup> In Table IA.20 of the Internet Appendix, the coefficient of the marketization index is significantly positive, indicating higher FDI in the provinces of greater marketization. More importantly, the interaction of marketization index and post-campaign dummy is insignificant. This result therefore provides little evidence that the

---

<sup>33</sup> For robustness we repeat the analysis for SOEs and non-SOEs separately, and the results (Tables IA.19 of the Internet Appendix) also show little improvement in these measures for the two subsamples.

<sup>34</sup> We use the marketization index of 2009, which is the most recent year from the report of Fan, Wang, and Zhu (2011). Since FDI is one of the 23 components of the index, we reconstruct the index by purging the FDI component.

anti-corruption campaign has positively affected foreign direct investments in China.

#### **5.4 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. We attempt to address this issue using Hong Kong firms as the benchmark. Because the economies of Mainland China and Hong Kong are closely related, Hong Kong firms share similar economic conditions with Chinese firms but there is no anti-corruption campaign in Hong Kong during the same period.

We first screen Hong Kong listed firms to identify Hong Kong local firms instead of foreign or Mainland Chinese firms listed in Hong Kong, and require these firms to have December fiscal year ends like Chinese firms. We then use a propensity score matching procedure (PSM) to match Chinese listed firms with Hong Kong firms using available corruption measures as well as firm size, year and industry dummies. Due to data availability of Hong Kong firms, we are able to examine six of the measures for the benchmark analyses: 1) regulation breaches, 2) operational inefficiency, 3) investment inefficiency, 4) earnings discontinuity, 5) absolute value of discretionary accruals, 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 calculate the difference-in-difference measure before and after the anti-corruption campaign [2013~2015 - 2011]. The results in Table 8 are consistent with our previous findings of no obvious improvement after the anti-corruption campaign. Specifically, within both pairs of earnings discontinuity and return volatility measures, one sees improvement while the other sees deterioration, and these changes are statistically insignificant. The other four measures all experienced deterioration after 2012, and two of them are statistically

significant.<sup>35</sup> Nevertheless, benchmarking to Hong Kong firms alleviates rather than fully controls for economic conditions because even Hong Kong's economy differs from that of Mainland China in many ways.

Overall, the results show that despite the significant improvement in business and entertainment expenditures, there is only limited improvement across broader measures of corruption, accounting manipulation, information environment, and foreign investment.

## 6. Conclusion

The Chinese anti-corruption campaign is the largest anti-corruption campaign in modern history and provides an interesting laboratory to examine the motivation for and effectiveness of anti-corruption efforts. Further understanding this initiative has practical ramifications as many developing countries follow China's approach. Consistent with the campaign ensnaring corrupt firms, investigated firms have lower minority shareholder ownership, higher CEO compensation, more near-retirement CEOs, more related-party sales and related-party loans, more operational inefficiency, and more corruption postings than their matched-firm counterparts.

We further collect and investigate a wide variety of ties to government and current and former political leaders. Firms with connections to investigated political leaders such as Zhou, Yongkang exhibit considerably higher investigation probabilities. However, firms with ties to the top seven leaders exhibit lower investigation probabilities. The results highlight how political connections can potentially provide protection but also be costly after a change in leadership. Importantly, in probit

---

<sup>35</sup> We test the parallel trends assumption and examine the difference [2009~2010 – 2011]. This analysis excludes 2008 when China launched a huge stimulus of 8 trillion Yuan in response to the global financial crisis, which can cause changes in accounting variables of Chinese firms relative to Hong Kong firms in 2008. Table IA.21 of the Internet Appendix shows that only three out of the eight variables exhibit violations of the parallel trends assumption (small profit, operational inefficiency, and investment inefficiency). The five variables that satisfy the parallel trends assumption do not experience significant improvement after the campaign. We use clustered standard errors by industry for this analysis. When we use clustered standard errors by industry and by year (as in Table 6), the t-statistics are similar except the t-statistic for regulation breaches increases to an abnormally high 24.76.

regressions that include both political and corporate connections, both sets of variables explain a sizeable share of the variation in investigation probability and are of similar economic importance. Although our tests cannot disentangle precise motives behind the campaign, the findings suggest that the campaign contains a strong political dimension but also identifies executives at more corrupt firms.

We ask if the campaign improves the environment for corporations by examining if there is broad improvement in corporate governance and managerial incentives, self-dealing, earnings manipulation, informational environment of financial markets, or foreign direct investment. For Chinese firms as a whole, while there is a large decrease in highly visible business entertainment expenditures and a decrease in CEO pay for SOEs, the changes in less conspicuous but important indicators of self-dealing exhibit no improvement. Overall, our findings suggest that despite the measurable decreases in conspicuous measures, there has not been a broad improvement in corporate corruption indicators and corporate culture.

While more time may be necessary to assess this expanding campaign and its full impact, our findings suggest that the reform may not be squarely focused on its stated anti-corruption goal, and relatedly, may cause limited improvement in corporate culture and corporate corruption. The findings are generally consistent with a literature skeptical of centralized initiatives without broader reforms. Summaries by Bardhan (1997), Wei (2001), Svensson (2005) suggest that any anti-corruption reform may have minimal effectiveness without fundamentally improving the legal, regulatory, and informational landscapes.

## References

- Aggarwal, R. K., F. Meschke, and T. Y. Wang. 2012. Corporate political donations: investment or agency? *Business and Politics* 14: 1-40.
- Allen, F., J. Qian, and M. Qian. 2005. Law, finance, and economic growth in China. *Journal of Financial Economics* 77: 57-116.
- Ang, A., J. Bai, and H. Zhou. 2016. The great wall of debt: The cross section of Chinese local government credit spreads. Working Paper.
- Bai, C.E., C.T. Hsieh, and Z. Song. 2016. The long shadow of China's fiscal expansion. *Brookings Papers on Economic Activity* 129-165.
- Banyan. 2014. Tiger in the net. *The Economist*.
- Bardhan, P. 1997. Corruption and development: A review of issues. *Journal of Economic Literature* 35: 1320-1346.
- Beck, T., A. Demircug-Kunt, and V. Maksimovic. 2005. Financial and legal constraints to growth: does firm size matter? *The Journal of Finance* 60: 137-177.
- Bergstresser, D., and T. Philippon. 2006. CEO incentives and earnings management. *Journal of Financial Economics* 80: 511-529.
- Biddle, G. C., G. Hilary, and R. S. Verdi. 2009. How does financial reporting quality relate to investment efficiency? *Journal of Accounting and Economics* 48: 112-131.
- Bjorkman, M., and J. Svensson. 2009. Power to the people: Evidence from a randomized field experiment on community-based monitoring in Uganda. *The Quarterly Journal of Economics* 124: 735-769.
- Borokhovich, K., K. Brunarski, and R. Parrino. 1997. CEO contracting and antitakeover amendments. *Journal of Finance* 52: 1495-517.
- Branigan, T. 2015. Politburo, army, casinos: China's corruption crackdown spreads. *The Guardian*.
- Burgstahler, D., and I. Dichev. 1997. Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics* 24: 99-126.
- Cadell, C. 2017. Chinese watchdog says 1.34 million officials punished for graft since 2013. *Reuters*.
- Cai, H., H. Fang, and L. C. Xu. 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.
- Calomiris, C. W., R. Fisman, and Y. Wang. 2010. Profiting from government stakes in a command economy: Evidence from Chinese asset sales. *Journal of Financial Economics* 96: 399-412.
- Chen, C. J.P., Z. Li, X. Su, and Z. 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, Q., X. Chen, K. Schipper, Y. Xu, and J. Xue. 2012. The sensitivity of corporate cash holdings to corporate governance. *Review of Financial Studies* 25: 3610-3644.
- Chen, G., M. Firth, D. N. Gao, and O. M. Rui. 2006. Ownership structure, corporate governance, and fraud: Evidence from China. *Journal of Corporate Finance* 12: 424-448.

- Chen, Y., M. Liu, and J. Su. 2013. Greasing the wheels of bank lending: Evidence from private firms in China. *Journal of Banking and Finance* 37: 2533-2545.
- Cheung, Y. L., P. R. Rau, and A. Stouraitis. 2010. Helping hand or grabbing hand? Central vs. local government shareholders in Chinese listed firms. *Review of Finance* 14: 669-694.
- Cohen, L., A. Frazzini, and C. Malloy. 2010. Sell-side school ties. *The Journal of Finance* 65: 1409-1437.
- Coles, J. L., N. D. Daniel, and L. Naveen. 2014. Co-opted boards. *The Review of Financial Studies* 27: 1751-1796.
- Core, J., and W. Guay. 1999. The use of equity grants to manage optimal equity incentive levels. *Journal of Accounting and Economics* 28: 151-184.
- Dass, N., V. Nanda, and C. S. Xiao. 2014. Firms in corrupt environments and the value of corporate governance. Working Paper, Georgia Tech.
- Duchin, R., and D. Sosyura. 2012. The politics of government investment. *Journal of Financial Economics* 106: 24-48.
- Faccio, M. 2006. Politically connected firms. *The American Economic Review* 96: 369-386.
- Fan, J. P.H., F. Guan, Z. Li, and Y. G. Yang. 2014. Relationship networks and earnings informativeness: Evidence from corruption cases. *Journal of Business Finance and Accounting* 41: 831-866.
- Fan, G., X. Wang, and H. Zhu. 2011. NERI index of marketization of China's provinces: 2011 report (in Chinese). *Economics Science Press, Beijing*.
- Fan, J. P.H., K.C. J. Wei, and X. Xu. 2011. Corporate finance and governance in emerging markets: A selective review and an agenda for future research. *Journal of Corporate Finance* 17: 207-214.
- Fan, J. P.H., T. J. Wong, and T. 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, R. 2001. Estimating the value of political connections. *The American Economic Review* 91: 1095-1102.
- Fisman, R., and Y. Wang. 2015. The mortality cost of political connections. *Review of Economics Studies* 82: 1346-1382.
- Giannetti, M., G. Liao, J. You, and X. Yu. 2018. The externalities of corruption: evidence from the entrepreneurial firms in China. Working Paper.
- Goh, Jing Rong, H. Ru, and K. Zou. 2018. Force behind anti-corruption: Evidence from China. Working Paper, Nanyang Technological University.
- Griffin, J. M., N. H. Hirschey, and P. J. Kelly. 2011. How important is the financial media in global markets? *Review of Financial Studies* 24: 3941-3992.
- Habib, M., and L. Zurawicki. 2002. Corruption and foreign direct investment. *Journal of International Business Studies* 33: 291-307.
- Hayn, C. 1995. The information content of losses. *Journal of Accounting and Economics* 20: 125-153.
- Hong, H., and I. Liskovich. 2017. Crime, punishment and the value of corporate social responsibility. Working Paper.

- Houston, J. F., C. Lin, and Y. Ma. 2011. Media ownership, concentration and corruption in bank lending. *Journal of Financial Economics* 100: 326-350.
- Huang, M. 2016. Financial reporting quality in corrupt firms: Evidence from the foreign corrupt practices act. Working Paper, University of Rochester.
- Jensen, M. C., and W. H. Meckling. 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* 3: 305-360.
- Jian, M., and T. J. Wong. 2010. Propping through related party transactions. *Review of Accounting Studies* 15: 70-105.
- Jiang, F., and K. A. Kim. 2015. Corporate governance in China: A modern perspective. *Journal of Corporate Finance* 32: 190-216.
- Jiang, G., C. M. C. Lee, and H. Yue. 2010. Tunneling through intercorporate loans: The China experience. *Journal of Financial Economics* 98: 1-20.
- Karpoff, J. M., D. S. Lee, and G. S. Martin. 2017. Foreign bribery: incentives and enforcement. Working Paper.
- Ke, B., N. Liu, and S. Tang. 2017. The effect of anti-corruption campaign on shareholder value in a weak institutional environment: Evidence from China. Working Paper.
- Li, B., Z. Wang, and H. Zhou. 2018. China's anti-corruption campaign and credit reallocation from SOEs to non-SOEs. Working Paper.
- Li, C., and R. McElveen. 2014. Debunking misconceptions about Xi Jinping's anti-corruption campaign. *Brookings*.
- Li, H., L. Meng, Q. Wang, and L.A. Zhou. 2008. Political connections, financing and firm performance: Evidence from Chinese private firms. *Journal of Developing Economics* 87: 283-299.
- Lin, C., R. Morck, B. Yeung, and X. Zhao. 2017. Anti-corruption reforms and shareholder valuations: Event study evidence from China. Working Paper.
- Liu, Q., and Z. J. Lu. 2007. Corporate governance and earnings management in the Chinese listed companies: A tunneling perspective. *Journal of Corporate Finance* 13: 881-906.
- Liu, L. X., H. Shu, and K.C. J. Wei. 2017. The impacts of political uncertainty on asset prices: Evidence from the Bo scandal in China. *Journal of Financial Economics* 125: 286-310.
- Magnus, G. 2015. Xi's anti-corruption campaign key to China's prospects.
- Nguyen, T. T., and M. A. van Dijk. 2012. Corruption, growth, and governance: Private vs. state-owned firms in Vietnam? *Journal of Banking & Finance* 36: 2935-2948.
- Olken B. A. 2007. Monitoring corruption: Evidence from a field experiment in Indonesia. *Journal of Political Economy* 115: 200-249.
- Pei, M. 2007. Corruption threatens China's future. *Policy Brief* 55.
- Reinikka, R., and J. Svensson. 2004. Local capture: Evidence from a central government transfer program in Uganda. *Quarterly Journal of Economics* 119: 679-705.
- Shleifer, A., and R. W. Vishny. 1993. Corruption. *Quarterly Journal of Economics* 108: 599-617.
- Song, Z., and W. Xiong. 2017. Risks in China's Financial System. Working Paper.

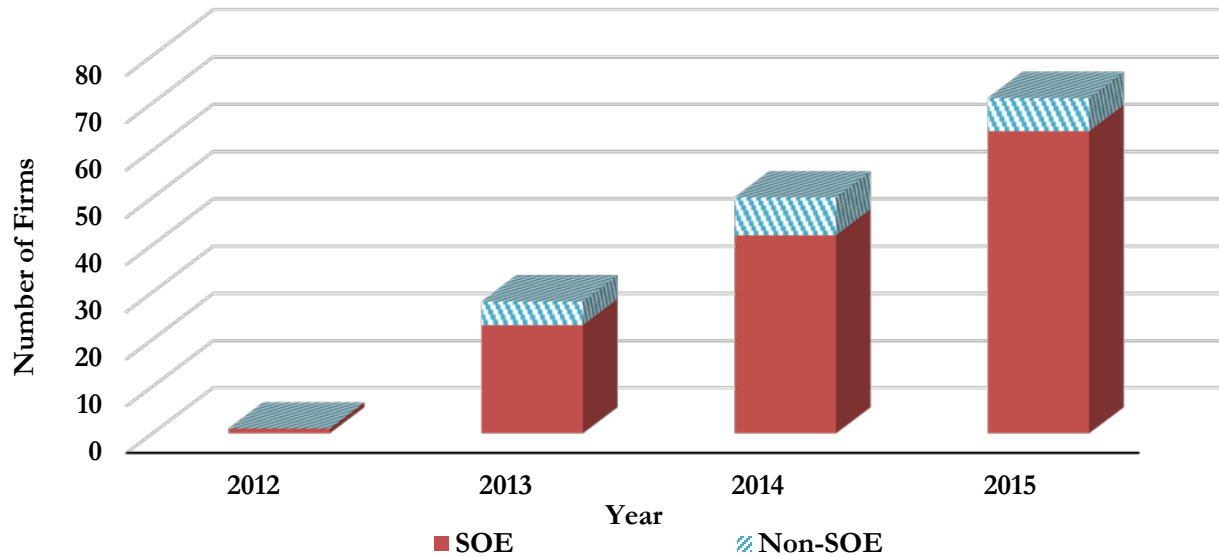


- Svensson, J. 2005. Eight questions about corruption. *Journal of Economic Perspectives* 19: 19-42.
- Wei, S. 2000. How taxing is corruption on international investors. *Review of Economics and Statistics* 82: 1-11.
- Wei, S. 2001. Corruption in Economic Transition and Development: Grease or Sand? Working Paper.
- Zeume, S. 2016. Bribes and firm value. *Review of financial studies* 30: 1457-1489.

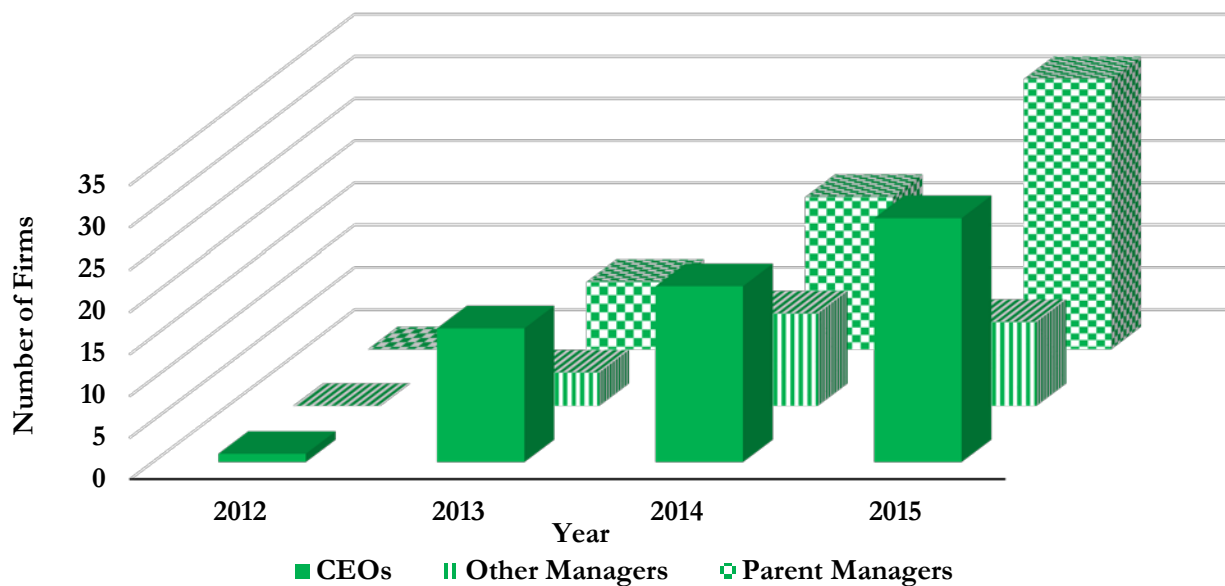
**Figure 1**  
**Description of Sample Firms**

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.

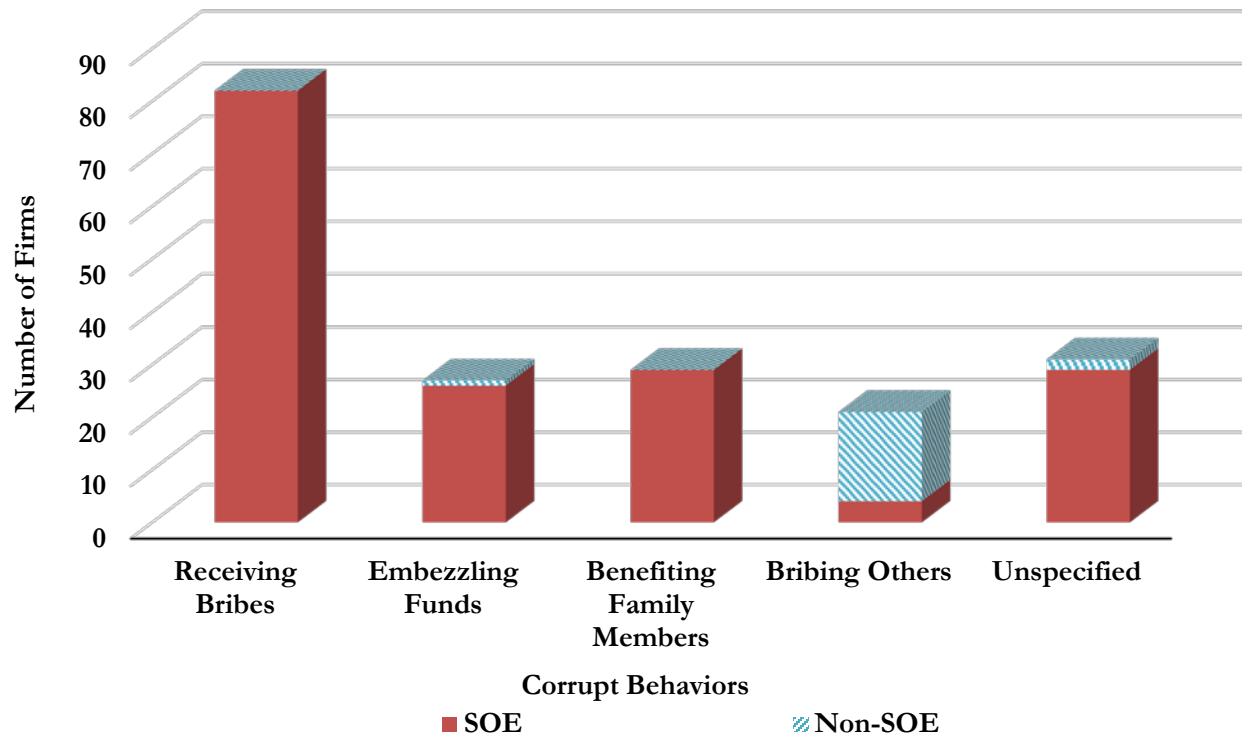
**Panel A: State-Owned Enterprises (SOEs) and Non-SOEs across Years**



**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**

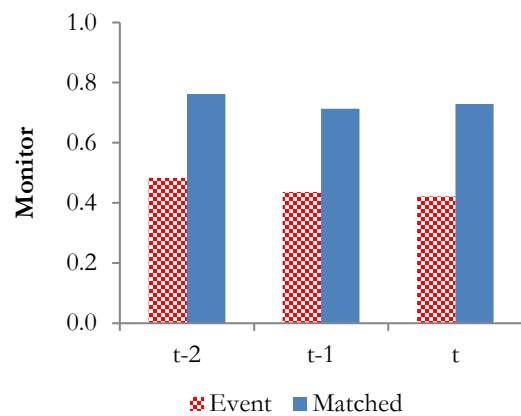


**Figure 2**

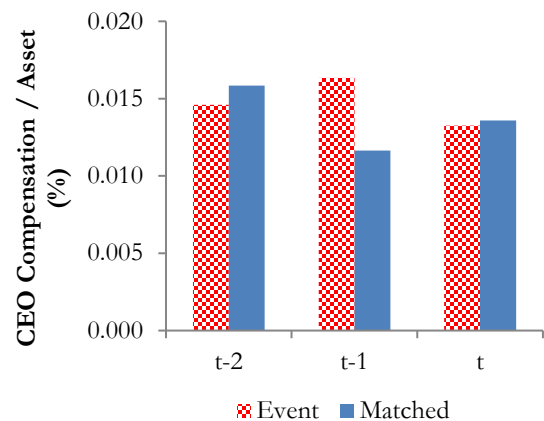
**Firm-Level Corruption Measures before Corruption Investigation Events for Event Firms and Matched Firms**

This figure presents twelve 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) *Monitoring by minority shareholders*, calculated using ownerships of the 2<sup>nd</sup> to the 5<sup>th</sup> largest shareholders; 2) *CEO compensation*, scaled by total assets; 3) *CEO pay-for-performance sensitivity*; 4) *CEO near-retirement dummy*, which equals one if CEO's age is greater than or equal to 59; 5) *Related-party sales*, scaled by revenue; 6) *Related-party loans*, scaled by total assets; 7) *Other receivables from parent firm*, scaled by total assets; 8) *Number of regulation breaches* in a year; 9) *Business entertainment expenditures*, scaled by total assets; 10) *Operational inefficiency*, calculated as growth of sales minus growth of net income; 11) *Investment inefficiency*, calculated as the absolute value of residue from regression of investment on sales growth within each industry-year; and 12) *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. Operational Inefficiency is Winsorized at 5% and 95% for each year because of the large number of outliers. All the other firm-level corruption measures, except CEO near-retirement dummy and number of regulation breaches, are Winsorized at 1% and 99% for each year. We exclude seven financial firms for the following measures: related-party sales, related-party loans, other receivables from parent firm, operational inefficiency, and investment inefficiency. To ease reading, CEO compensation, other receivables from parent firm, and business entertainment expenditures are expressed in percentage.

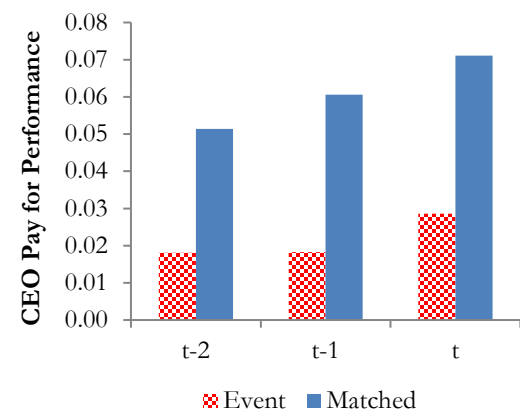
**Monitoring by Minority Shareholders**



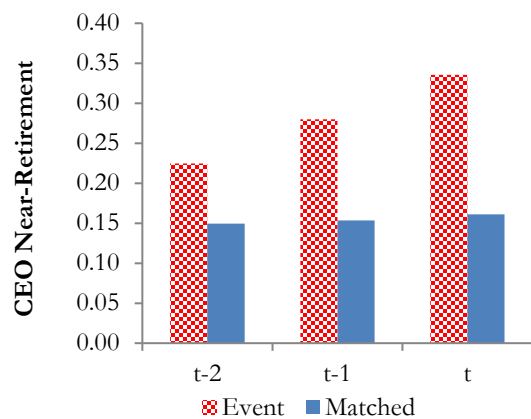
**CEO Compensation**



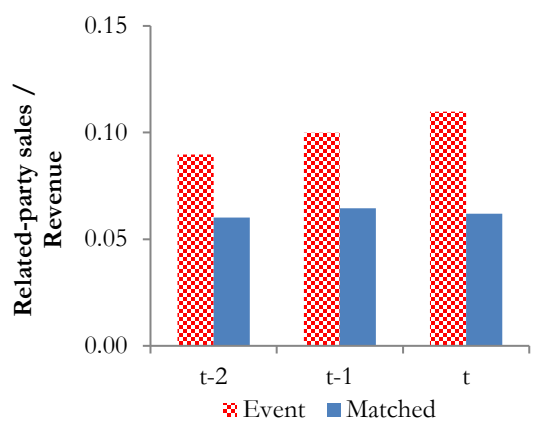
**CEO Pay for Performance Sensitivity**



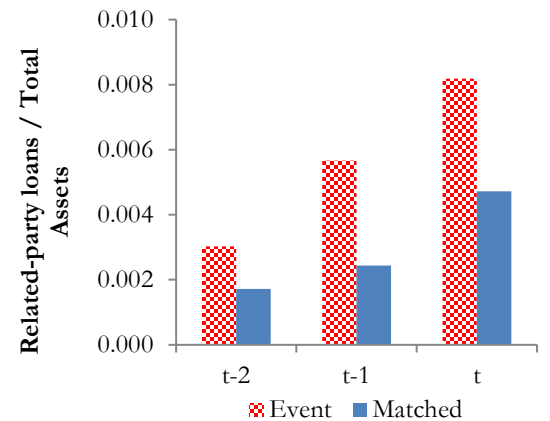
**CEO Near-Retirement Dummy**



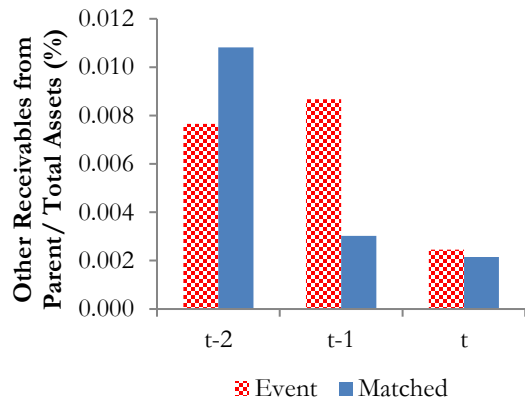
**Related-Party Sales**



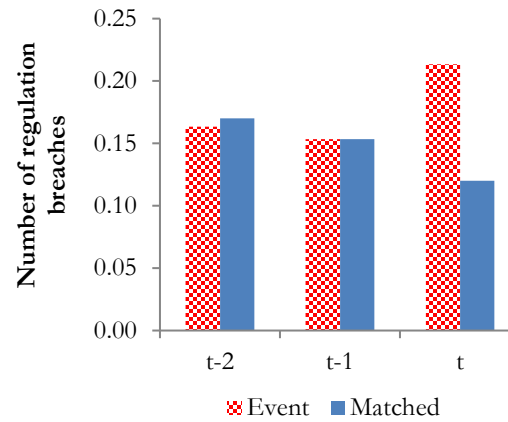
**Related-Party Loans**



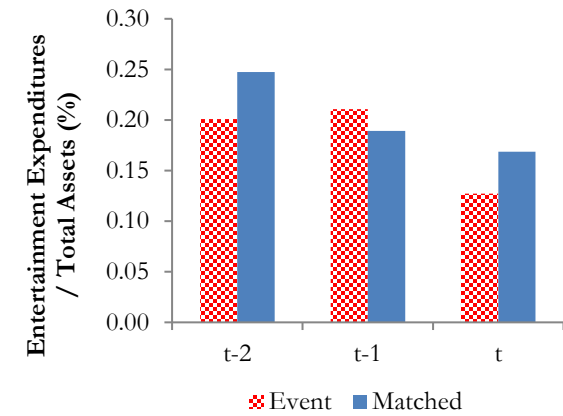
**Other Receivables from Parent Firm**



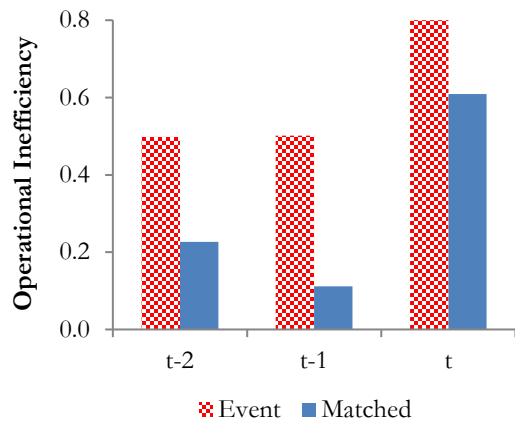
**Number of Regulation Breaches**



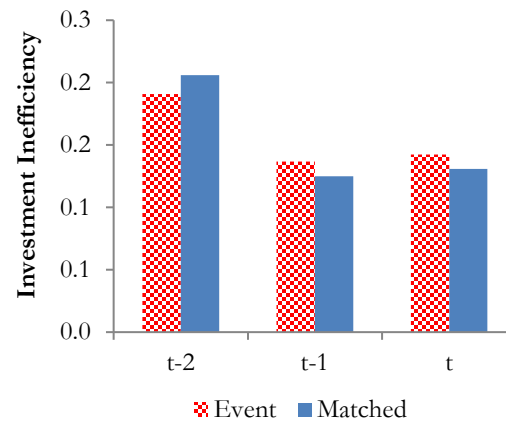
**Business Entertainment Expenditures**



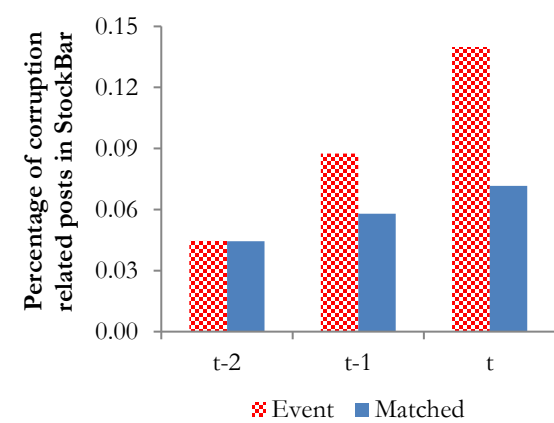
**Operational Inefficiency**



**Investment Inefficiency**

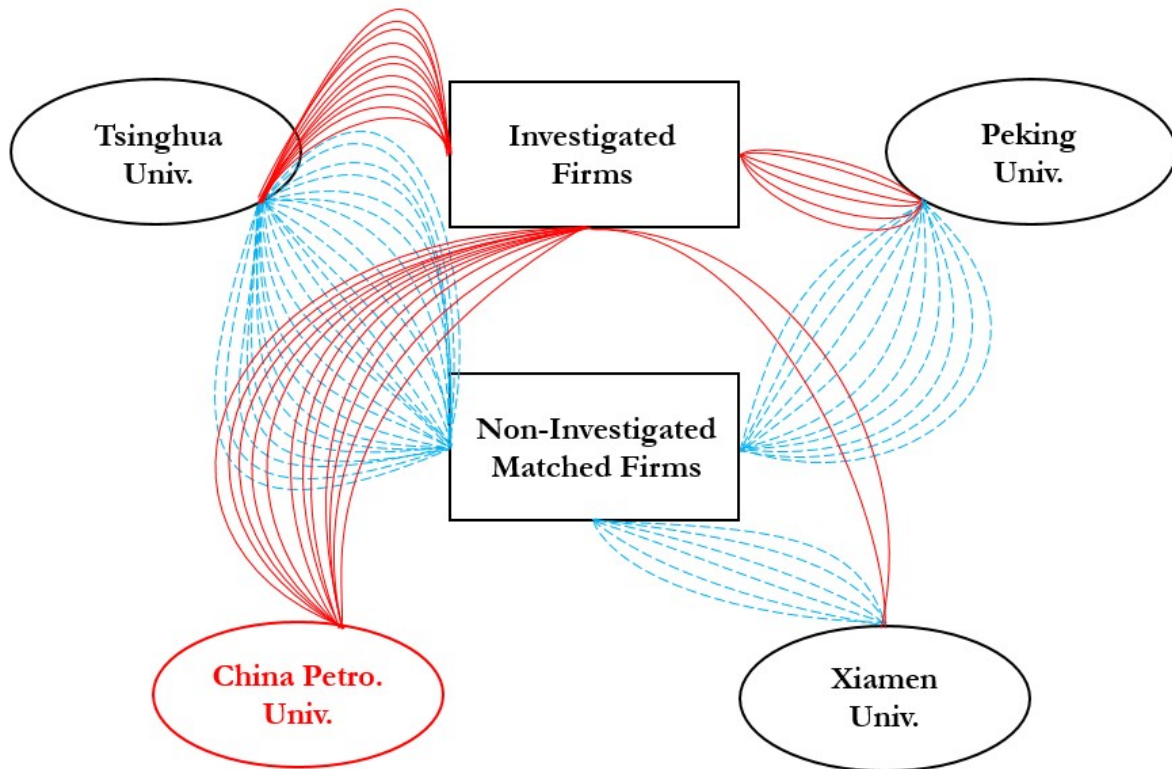


**Corruption Postings**



**Figure 3**  
**Corporate Investigations and Political Connections**

This figure presents the university affiliations of the investigated firms and their matched firms with the current and investigated top leaders. Investigated firms include the 150 sample firms investigated for corruption during the anti-corruption campaign. For each event firm, we identify a non-investigated matched firm using the approach described in the heading of Figure 2. The universities include three (Tsinghua University, Peking University, and Xiamen University) attended by the seven members of the Politburo Standing Committee (PSC) of CPC's Central Committee, as well as one (China Petroleum University) attended by Yongkang Zhou, the past member of the PSC investigated during the campaign. Each red solid (blue dotted) line connecting firms with a university represents a C-Suite executive of an investigated (non-investigated) firm graduated from the university. The figure does not include three other universities attended by the current top seven leaders but not corporate managers (Kim Il-sung University, Harbin Engineering University, and Northwest University).

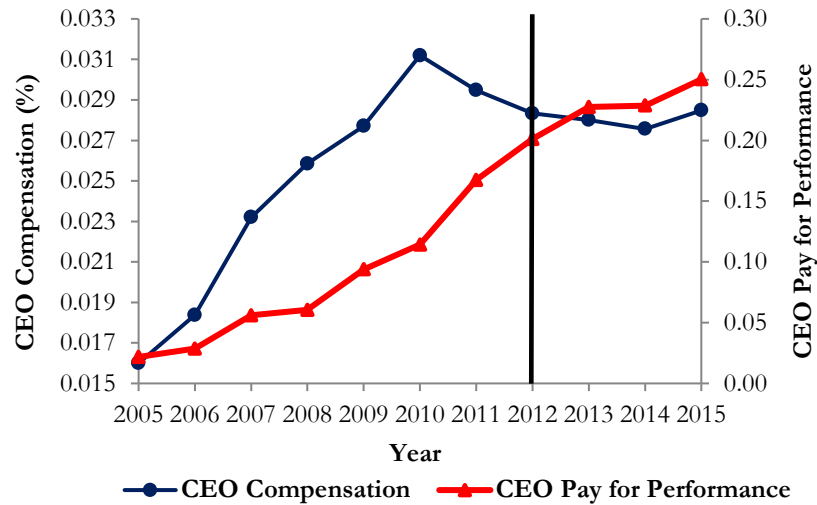


**Figure 4**  
**Corruption Measures for All Firms: 2005-2015**

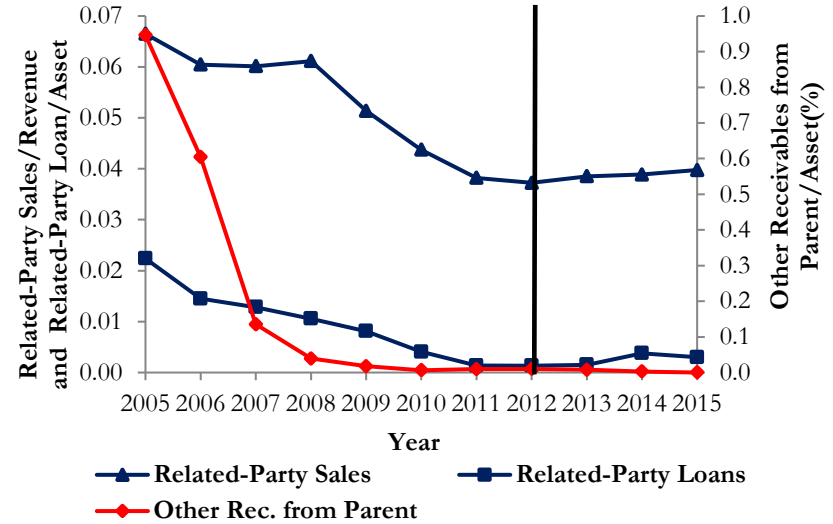
This figure plots the annual averages of eleven corruption measures for Chinese listed companies from 2005 to 2015. The sample includes all firms listed on Shanghai and Shenzhen stock exchanges (A shares). All Chinese firms' fiscal years end in December so the fiscal year coincides with the calendar year. The corruption measures are grouped into five categories and plotted in five figures. Two measures of CEO incentives include: 1) *CEO compensation*, scaled by total assets; and 2) *CEO pay-for-performance sensitivity*. 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 expenditures*, scaled by total assets. The two measures of efficiency include: 1) *Operational inefficiency*, calculated as growth of sales minus growth of net income; and 2) *Investment inefficiency*, calculated as the absolute value of residue from regression of investment on sales growth within each industry-year. Operational inefficiency is 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 five measures: related-party sales, related-party loans, other receivables from parent firm, operational inefficiency, and investment inefficiency. To ease reading, CEO compensation, other receivables from parent firm, and business entertainment expenditures are expressed in percentage.



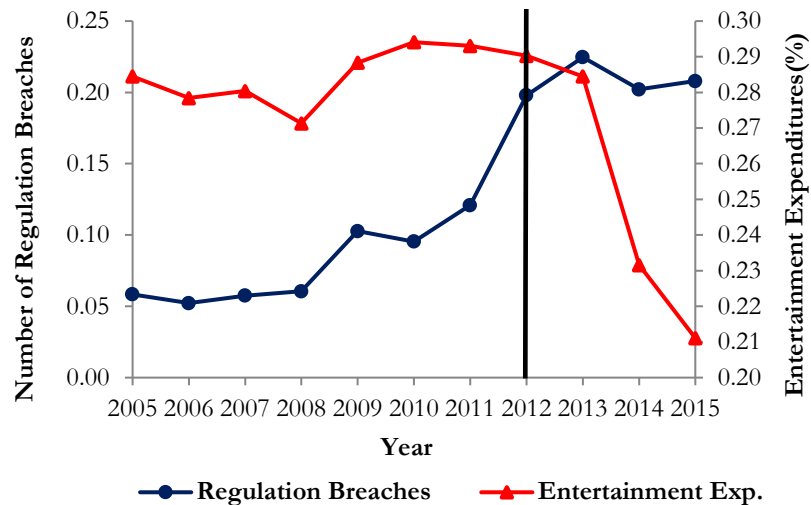
**Panel A: CEO Incentives and Compensation**



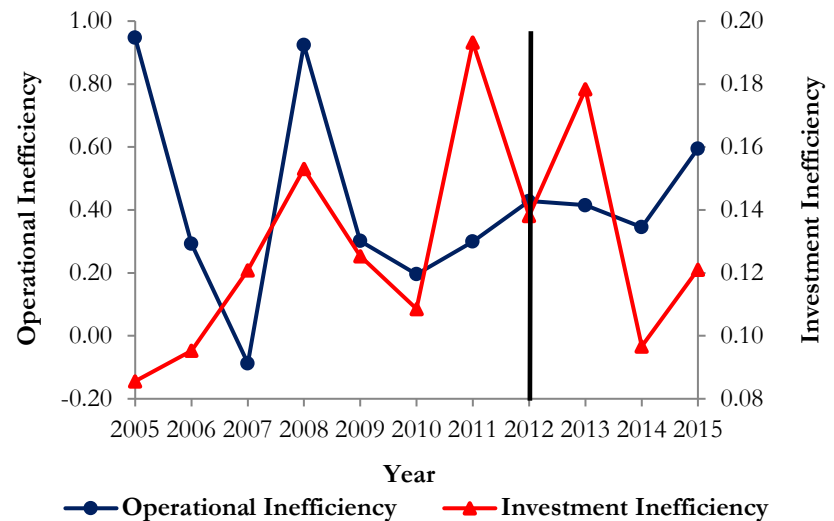
**Panel B: Related-Party Transactions**



**Panel C: Regulation Breaches & Entertainment Expenditures**



**Panel D: Operating Inefficiency and Investment Inefficiency**

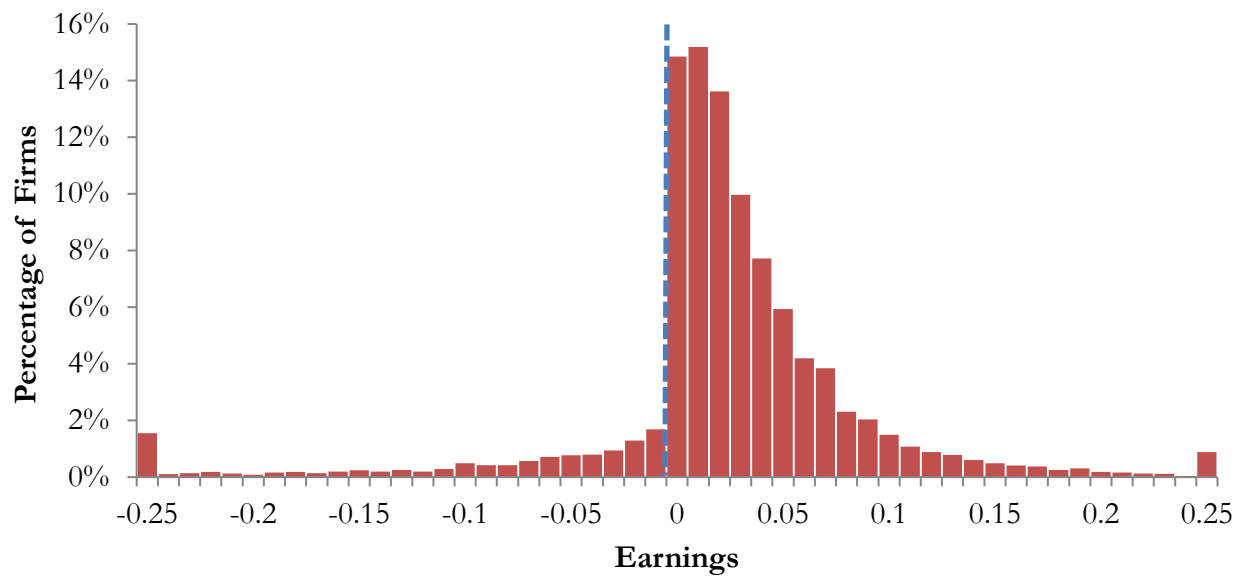


**Figure 5**

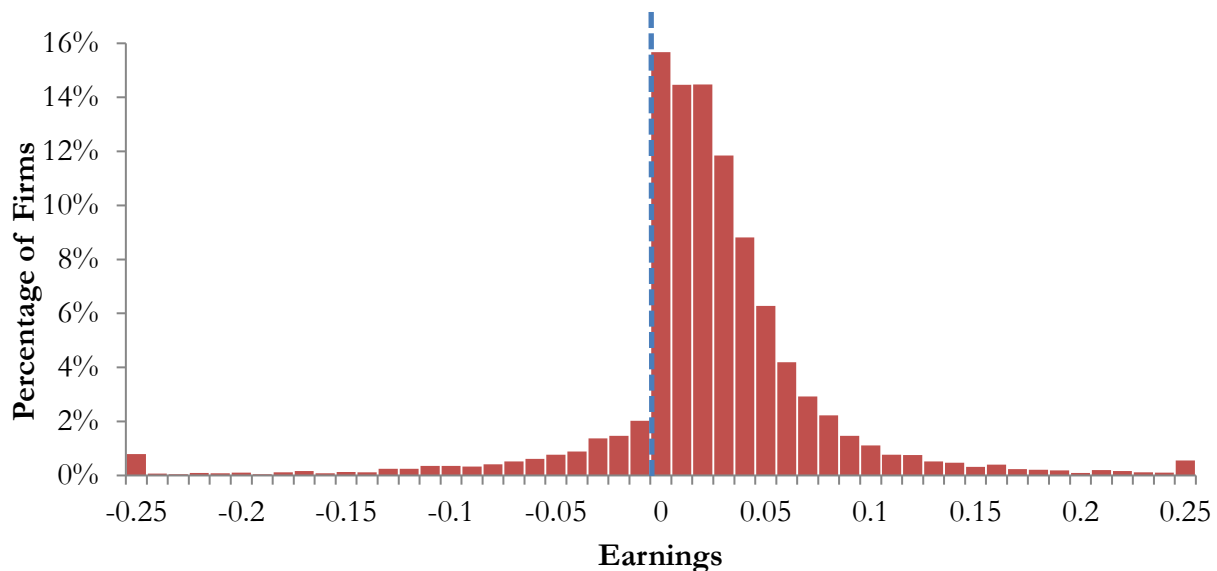
**Distribution of Earnings for All Firms before and after Anti-Corruption Campaign Started**

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 net income ( $NI_{i,t}$ ) scaled by market value of equity in the previous year end ( $ME_{i,t-1}$ ). 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 2015. 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: 2013-2015**



**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.

<b>Panel A: Characteristics of Event Firms</b>			
<b>Categories of Event Firms</b>	<b># Firms</b>	<b># SOEs</b>	<b># Non-SOEs</b>
<b>Year of Events</b>			
2012	1	1	0
2013	28	23	5
2014	50	42	8
2015	71	64	7
<b>Positions of Corrupt Managers</b>			
CEO/Chairman	67	49	18
Other Top Managers	25	23	2
Managers of Parent Firms	58	58	0
<b>Total #Firms</b>	150	130	20
<b>Panel B: Distribution of Specific Corrupt Behaviors</b>			
<b>Main Corrupt Behaviors</b>	<b># Firms</b>	<b># SOEs</b>	<b># Non-SOEs</b>
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
<b>Total #Firms</b>	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 from the beginning of the anti-corruption campaign on 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-1 and t, where t is the year of corruption investigation. The firm-level corruption indicators include: 1) *Monitoring* (Monitoring by minority shareholders), calculated using ownerships of the 2<sup>nd</sup> to the 5<sup>th</sup> largest shareholders; 2) *Compensation* (CEO Compensation), scaled by total assets; 3) *Pay for performance* (CEO pay-for-performance sensitivity), which is the change in dollar value of CEO's stock and option holdings in response to one percent change in stock price, scaled by the sum of the dollar value change, CEO salary, and CEO bonus; 4) *Near-retirement* (CEO near-retirement dummy), which equals one if CEO's age is greater than or equal to 59; 5) *Related-party sales*, scaled by revenue; 6) *Related-party loans*, scaled by total assets; 7) *Other receivables* (Other receivables from parent firm), scaled by total assets; 8) *Regulation breaches* (Number of regulation breaches in a year); 9) *Entertain. exp.* (Business entertainment expenditures, scaled by total assets); 10) *Operational inefficiency*, calculated as growth of sales minus growth of net income; 11) *Investment inefficiency*, calculated as the absolute value of residue from regression of investment on sales growth within each industry-year; and 12) *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. Operational inefficiency is Winsorized at 5% and 95% for each year because of the large number of outliers. All the other firm-level corruption measures, except CEO near-retirement dummy, number of regulation breaches, are Winsorized at 1% and 99% for each year. We exclude seven financial firms for the following measures: related-party sales, related-party loans, other receivables from parent firm, operational inefficiency, and investment inefficiency. To ease reading, CEO compensation, other receivables from parent firm, and business entertainment expenditures are expressed in percentage. Bold is used for numbers that are statistically significant at 0.10 level.

	Year t-1				Year t			
	Event Firms	Match Firms	Diff	t-stat	Event Firms	Match Firms	Diff	t-stat
<b>Monitoring</b>	0.436	0.713	<b>-0.277</b>	<b>(-2.18)</b>	0.421	0.730	<b>-0.309</b>	<b>(-2.48)</b>
<b>Compensation (%)</b>	0.016	0.012	<b>0.005</b>	<b>(1.75)</b>	0.013	0.014	0.000	(-0.13)
<b>Pay for Performance</b>	0.018	0.061	<b>-0.042</b>	<b>(-2.30)</b>	0.029	0.071	<b>-0.043</b>	<b>(-2.12)</b>
<b>Near-Retirement</b>	0.280	0.153	<b>0.127</b>	<b>(2.77)</b>	0.336	0.161	<b>0.175</b>	<b>(3.36)</b>
<b>Related-Party Sales</b>	0.100	0.065	<b>0.035</b>	<b>(1.99)</b>	0.110	0.062	<b>0.048</b>	<b>(2.65)</b>
<b>Related-Party Loans</b>	0.006	0.002	0.003	(1.58)	0.008	0.005	0.003	(1.33)
<b>Other Receivables (%)</b>	0.009	0.003	0.006	(1.45)	0.002	0.002	0.000	(0.18)
<b>Regulation Breaches</b>	0.153	0.153	0.000	(0.00)	0.213	0.120	0.093	(1.61)
<b>Entertain. Exp. (%)</b>	0.211	0.189	0.022	(0.44)	0.127	0.169	-0.041	(-1.29)
<b>Operational Inefficiency</b>	0.501	0.111	<b>0.390</b>	<b>(2.50)</b>	0.880	0.609	0.271	(1.14)
<b>Invest. Inefficiency</b>	0.142	0.129	0.012	(1.44)	0.149	0.137	0.012	(1.10)
<b>Corruption Postings</b>	0.087	0.058	<b>0.030</b>	<b>(3.12)</b>	0.140	0.072	<b>0.068</b>	<b>(5.84)</b>

**Table 3**  
**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 from the beginning of the anti-corruption campaign on 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). The firm-level corruption indicators include: 1) *Monitoring* (Monitoring by minority shareholders), calculated using ownerships of the 2<sup>nd</sup> to the 5<sup>th</sup> largest shareholders; 2) *CEO compensation*, scaled by total assets; 3) *CEO pay for performance* (CEO pay-for-performance sensitivity), which is the change in dollar value of CEO's stock and option holdings in response to one percent change in stock price, scaled by the sum of the dollar value change, CEO salary, and CEO bonus; 4) *CEO near-retirement dummy*, which equals one if CEO's age is greater than or equal to 59; 5) *Related-party sales*, scaled by revenue; 6) *Related-party loans*, scaled by total assets; 7) *Other receivable from parent* (Other receivables from parent firm, scaled by total assets); 8) *# Regulation breaches* (Number of regulation breaches in a year); 9) *Entertainment Expenditures* (Business entertainment expenditures, scaled by total assets); 10) *Operational inefficiency*, calculated as growth of sales minus growth of net income; 11) *Investment inefficiency*, calculated as the absolute value of residue from regression of investment on sales growth within each industry-year; and 12) *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. Operational inefficiency is Winsorized at 5% and 95% for each year because of the large number of outliers. All the other firm-level corruption measures, except CEO near-retirement dummy, number of regulation breaches, are Winsorized at 1% and 99% for each year. The regressions also control for firm characteristics including natural log of market capitalization, and a dummy variable for state-owned enterprises (SOE). 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 five measures: related-party sales, related-party loans, other receivables from parent firm, operational inefficiency, and investment inefficiency. All models include year fixed effects, industry fixed effects, and region fixed effects. T-statistics associated with coefficients are reported in the parentheses. The coefficients on CEO compensation, other receivables and business entertainment expenditures are divided by 1,000 to ease reading. \*\*\*, \*\*, and \* represent statistical significance at the 0.01, 0.05, and 0.10 levels, respectively. Bold is used for numbers that are statistically significant at 0.10 level.

Independent Variables (t-1)	Dependent Variable: Dummy of Corruption Investigation						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Monitoring	<b>-0.187**</b> (-2.53)					<b>-0.213*</b> (-1.81)	<b>-0.241***</b> (-2.68)
CEO Compensation	<b>0.564*</b> (1.69)					0.483 (1.32)	<b>0.700**</b> (1.98)
CEO Pay for Performance	-0.812 (-1.42)					-0.843 (-1.34)	-0.880 (-1.45)
CEO Near-Retirement Dummy	<b>0.537***</b> (2.76)					<b>0.686***</b> (2.63)	<b>0.692***</b> (3.24)
Related-Party Sales		<b>1.029*</b> (1.94)				<b>1.225*</b> (1.80)	<b>1.288**</b> (2.28)
Related-Party Loans		<b>8.702*</b> (1.71)				<b>10.537*</b> (1.79)	<b>12.394**</b> (2.24)
Other Receivables from Parent		0.719 (1.45)				<b>1.356*</b> (1.73)	<b>1.031*</b> (1.79)
# Regulation Breaches			0.015 (0.07)			0.077 (0.34)	0.117 (0.57)
Entertainment Expenditures			-0.008 (-0.21)			-0.015 (-0.36)	
Operational Inefficiency				<b>0.165**</b> (2.50)		<b>0.161*</b> (1.84)	<b>0.180**</b> (2.43)
Investment Inefficiency				<b>2.101*</b> (1.90)		1.293 (0.94)	1.945 (1.63)
Corruption Postings					<b>1.922**</b> (2.15)	1.737 (1.22)	<b>2.474**</b> (2.42)
Ln(ME)	0.152* (1.92)	0.155** (2.03)	0.175* (1.68)	0.155** (2.00)	0.107 (1.42)	0.187 (1.52)	0.127 (1.40)
SOE Dummy	-0.164 (-0.63)	-0.226 (-0.93)	-0.250 (-0.96)	-0.208 (-0.83)	-0.176 (-0.75)	-0.680** (-2.06)	-0.439 (-1.51)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# Obs	293	286	213	281	300	197	274

Table 4

**Probit Regressions of Corruption Investigation on Corruption Measures: SOEs Only**

This table presents probit regressions of corruption investigation on corruption measures for the subsample of state-owned enterprises. The regression setting and definitions of variables are the same as those in Table 3. T-statistics associated with coefficients are reported in the parentheses. \*\*\*, \*\*, and \* represent statistical significance at the 0.01, 0.05, and 0.10 levels, respectively.

Independent Variables (t-1)	Dependent Variable: Dummy of Corruption Investigation						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Monitoring	<b>-0.225***</b> (-2.77)					<b>-0.335**</b> (-2.42)	<b>-0.319***</b> (-3.16)
CEO Compensation	<b>1.261*</b> (1.79)					0.746 (0.77)	<b>1.724**</b> (2.23)
CEO Pay for Performance	-1.582 (-1.59)					<b>-2.259*</b> (-1.66)	<b>-2.102*</b> (-1.72)
CEO Near-Retirement Dummy	<b>0.472**</b> (2.28)					<b>0.727**</b> (2.45)	<b>0.618***</b> (2.69)
Related-Party Sales		<b>1.526***</b> (2.62)				<b>1.841**</b> (2.49)	<b>1.993***</b> (3.13)
Related-Party Loans		7.722 (1.48)				10.637 (1.62)	<b>11.630**</b> (2.00)
Other Receivables from Parent		0.649 (1.30)				1.273 (1.51)	<b>1.018*</b> (1.72)
# Regulation Breaches			-0.020 (-0.09)			0.038 (0.15)	0.097 (0.44)
Entertainment Expenditures			0.016 (0.36)			0.018 (0.38)	
Operational Inefficiency				<b>0.168**</b> (2.43)		<b>0.160*</b> (1.67)	<b>0.189**</b> (2.40)
Investment Inefficiency				<b>2.636**</b> (2.25)		1.574 (1.03)	<b>2.186*</b> (1.70)
Corruption Postings					<b>1.765*</b> (1.94)	0.964 (0.62)	<b>2.138**</b> (1.99)
Ln(ME)	0.193** (2.06)	0.142* (1.71)	0.152 (1.28)	0.136 (1.63)	0.091 (1.11)	0.222 (1.40)	0.202* (1.83)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# Obs	253	248	178	245	260	164	238

Table 5

**Probit Regressions of Corruption Investigation on Political Connection Measures**

This table presents probit regressions of corruption investigation on political connection measures. The regressions are similar to those in Table 3 but include the political connection measures: 1) *Government connection*, a dummy variable that equals one if a C-Suite executive was previously a high-ranked government official; 2) *Central and local government connection*, two dummy variables constructed according to whether a C-Suite manager was previously a high-ranked government official for the central or local government; 3) *University affiliation: Top 7 leaders*, number of connections where a C-Suite executive of the company graduated from the same university as a top 7 leader; 4) *Birthplace connection: Top 7 leaders*, a dummy variable that equals 1 if the company's headquarter is located in the home province of a top 7 leader; 5) *Association with Yongkang Zhou*, a dummy variable that equals one if the firm is located in the Sichuan province or in the oil industry, the power base of Zhou, Yongkang, the highest ranked leader investigated; 6) *University affiliations with investigated (non-investigated) national leaders*, constructed similarly as in 3) but using the investigated or non-investigated national leaders; 7) *Birthplace connections with investigated or non-investigated national leaders*, constructed similarly as in 4) but using the number of investigated or non-investigated national leaders whose home province is the same as the company's headquarters province; 8) *Birthplace connections with the 1,021 investigated government officials*, constructed similarly constructed as in 7) but using the 1,021 investigated officials publicized on the CCDI website; 9) *Province graft-tigers and graft-flies*. The former is the average rank of investigated provincial officials in the six months prior to the investigation month, and the latter is the total number of investigated provincial official in the prior six months, scaled by the number of counties in the province; 10) *Investigation team in province*, a dummy variable that equals one if an investigation team was in the province in the prior six months. For the university and birthplace connection variables, we take natural log of the sum of raw value and one. \*\*\*, \*\*, and \* represent significance at the 0.01, 0.05, and 0.10 levels, respectively. Bold is used for numbers statistically significant at 0.10 level.

<b>Dependent Variable: Dummy of Corruption Investigation</b>										
<b>Independent Variables (t-1)</b>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>Government Connection</b>	<b>0.725***</b> (3.45)									
<b>Local Government Connection</b>		<b>0.927***</b> (3.98)							<b>1.054***</b> (3.67)	<b>0.823***</b> (3.31)
<b>Central Government Connection</b>		-0.051 (-0.13)							-0.063 (-0.13)	0.267 (0.59)
<b>University Affiliation: Top 7 Leaders</b>			<b>-1.636***</b> (-4.14)						<b>-2.003***</b> (-3.05)	<b>-2.402***</b> (-3.80)
<b>Birthplace Conn.: Top 7 Leaders</b>			0.037 (0.10)						-0.194 (-0.38)	-0.091 (-0.20)
<b>Association with Zhou, Yongkang</b>				<b>0.997**</b> (2.20)					<b>1.680**</b> (2.46)	<b>1.845***</b> (2.87)
<b>Univ. Conn: Invest. National Leaders</b>					<b>0.805**</b> (1.96)				0.060 (0.12)	0.348 (0.72)
<b>Birth Conn: Invest. National Leaders</b>					0.298 (0.77)				0.150 (0.27)	0.596 (1.34)



Dependent Variable: Dummy of Corruption Investigation										
Univ. Conn: Non-Invest. National Leaders									0.293	0.326
									(1.22)	(1.43)
Birth Conn: Non-Invest. National Leaders									<b>-0.655***</b>	<b>-0.478**</b>
									<b>(-2.79)</b>	<b>(-2.33)</b>
Birth Conn: 1,021 Invest. Politicians								-0.142	0.021	-0.152
								(-1.04)	(0.10)	(-0.82)
Province Graft-Tigers								<b>0.365*</b>	0.334	
								<b>(1.80)</b>	(1.27)	
Province Graft-Flies								-1.119	-1.356	
								(-0.86)	(-0.91)	
Investigation Team in Province								<b>0.472**</b>	<b>0.633**</b>	0.421
								<b>(1.99)</b>	<b>(2.09)</b>	(1.57)
Monitoring	<b>-0.222**</b>	<b>-0.215**</b>	<b>-0.189*</b>	<b>-0.266***</b>	<b>-0.254***</b>	<b>-0.233**</b>	<b>-0.200**</b>	<b>-0.235***</b>	-0.170	<b>-0.218**</b>
	<b>(-2.45)</b>	<b>(-2.36)</b>	<b>(-1.94)</b>	<b>(-2.86)</b>	<b>(-2.68)</b>	<b>(-2.57)</b>	<b>(-2.03)</b>	<b>(-2.61)</b>	(-1.36)	<b>(-2.00)</b>
CEO Compensation	<b>0.692**</b>	<b>0.720**</b>	<b>0.784**</b>	<b>0.719**</b>	<b>0.739**</b>	<b>0.648*</b>	0.253	<b>0.601*</b>	0.327	<b>0.631*</b>
	<b>(1.99)</b>	<b>(2.06)</b>	<b>(2.15)</b>	<b>(2.03)</b>	<b>(2.06)</b>	<b>(1.84)</b>	(0.60)	<b>(1.71)</b>	(0.78)	<b>(1.76)</b>
CEO Pay for Performance	-0.861	-0.880	-0.706	-0.801	-0.762	-0.867	<b>-1.131*</b>	-0.806	-0.892	-0.528
	(-1.42)	(-1.43)	(-1.06)	(-1.32)	(-1.18)	(-1.43)	<b>(-1.72)</b>	(-1.34)	(-1.18)	(-0.77)
CEO Near-Retirement Dummy	<b>0.488**</b>	<b>0.565**</b>	<b>0.664***</b>	<b>0.704***</b>	<b>0.690***</b>	<b>0.711***</b>	<b>0.735***</b>	<b>0.689***</b>	<b>0.714**</b>	<b>0.556**</b>
	<b>(2.18)</b>	<b>(2.46)</b>	<b>(3.03)</b>	<b>(3.27)</b>	<b>(3.18)</b>	<b>(3.32)</b>	<b>(3.15)</b>	<b>(3.20)</b>	<b>(2.56)</b>	<b>(2.24)</b>
Related-Party Sales	<b>1.095*</b>	<b>1.149**</b>	<b>1.046*</b>	<b>1.254**</b>	<b>1.477**</b>	<b>1.238**</b>	<b>1.492**</b>	<b>1.300**</b>	0.654	0.442
	<b>(1.91)</b>	<b>(1.96)</b>	<b>(1.78)</b>	<b>(2.15)</b>	<b>(2.44)</b>	<b>(2.18)</b>	<b>(2.50)</b>	<b>(2.30)</b>	(0.86)	(0.61)
Related-Party Loans	<b>11.135*</b>	<b>10.961*</b>	<b>16.911**</b>	<b>12.536**</b>	<b>13.608**</b>	<b>12.942**</b>	<b>13.388**</b>	<b>12.368**</b>	<b>18.160**</b>	<b>17.336**</b>
	<b>(1.92)</b>	<b>(1.89)</b>	<b>(2.57)</b>	<b>(2.25)</b>	<b>(2.39)</b>	<b>(2.31)</b>	<b>(2.24)</b>	<b>(2.24)</b>	<b>(2.24)</b>	<b>(2.29)</b>
Other Receivables from Parent	0.898	0.830	<b>1.611**</b>	<b>1.092*</b>	<b>1.498**</b>	<b>1.015*</b>	0.948	0.922	<b>1.428*</b>	<b>1.509**</b>
	(1.55)	(1.46)	<b>(2.34)</b>	<b>(1.92)</b>	<b>(2.29)</b>	<b>(1.74)</b>	(1.57)	(1.61)	<b>(1.89)</b>	<b>(2.01)</b>
# Regulation Breaches	0.100	0.122	0.064	0.107	0.080	0.124	0.225	0.109	0.216	0.097
	(0.48)	(0.58)	(0.30)	(0.52)	(0.38)	(0.60)	(0.98)	(0.53)	(0.88)	(0.44)
Operational Inefficiency	<b>0.179**</b>	<b>0.171**</b>	<b>0.195**</b>	<b>0.179**</b>	<b>0.199***</b>	<b>0.177**</b>	0.127	<b>0.187**</b>	0.106	<b>0.164*</b>
	<b>(2.38)</b>	<b>(2.25)</b>	<b>(2.51)</b>	<b>(2.38)</b>	<b>(2.65)</b>	<b>(2.38)</b>	(1.53)	<b>(2.47)</b>	(1.14)	<b>(1.92)</b>
Investment Inefficiency	1.713	1.758	1.992	1.670	<b>2.008*</b>	<b>1.986*</b>	<b>2.268*</b>	<b>2.012*</b>	2.475	1.773
	(1.40)	(1.42)	(1.62)	(1.39)	<b>(1.65)</b>	<b>(1.65)</b>	<b>(1.73)</b>	<b>(1.67)</b>	(1.62)	(1.33)
Corruption Postings	<b>2.375**</b>	<b>2.620**</b>	<b>3.101***</b>	<b>2.024*</b>	<b>2.554**</b>	<b>2.562**</b>	<b>2.435**</b>	<b>2.379**</b>	<b>2.373*</b>	<b>2.447**</b>
	<b>(2.33)</b>	<b>(2.51)</b>	<b>(2.90)</b>	<b>(1.92)</b>	<b>(2.38)</b>	<b>(2.49)</b>	<b>(2.28)</b>	<b>(2.31)</b>	<b>(1.90)</b>	<b>(2.04)</b>
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year, Industry, Region Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
# Obs	274	274	274	274	274	274	235	274	235	274

**Table 6**  
**Corruption Measures for All Firms: 2005-2015**

This table presents annual averages of corruption measures for all Chinese listed firms from 2005 to 2015. Panel A presents the sample of all firms listed on Shanghai and Shenzhen stock exchanges (A shares). Panel B present the subsample of SOEs. All Chinese firms' fiscal years end in December so the fiscal year coincides with the calendar year. The firm-level corruption indicators include: 1) *CEO comp.* (CEO compensation), scaled by total assets; 2) *CEO pay-perform.* (CEO pay-for-performance sensitivity); 3) *Related sales* (Related-party sales, scaled by revenue); 4) *Related loans* (Related-party loans, scaled by total assets); 5) *Other receiv.* (Other receivables from parent firm, scaled by total assets); 6) *Reg. breaches* (Number of regulation breaches in a year); 7) *Entertain. Exp.* (Business entertainment expenditures, scaled by total assets); 8) *Operational Inefficiency*, calculated as growth of sales minus growth of net income; and 9) *Inv. inefficiency* (Investment inefficiency), calculated as the absolute value of residue from regression of investment on sales growth within each industry-year. Operational inefficiency is 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 firms for these measures: related-party sales, related-party loans, other receivables from parent firm, operational inefficiency, and investment inefficiency. We also report differences between 2011 and the average of 2013-2015 (after the start of anti-corruption campaign), as well as the associated t-statistics calculated using standard errors clustered by industry and by year. %Diff. refers to the percentage change from before the anti-corruption campaign (2011). To ease reading, CEO compensation, other receivables from parent firm, and business entertainment expenditures are expressed in percentage. Bold is used for numbers that are statistically significant at 0.10 level.

Panel A: All Chinese Listed Firms									
Corruption Measures									
Year	CEO Comp. (%)	CEO Pay- Perform.	Related Sales	Related Loans	Other Receiv. (%)	Reg. Breaches	Entertain. Exp. (%)	Operational Inefficiency	Inv. Inefficiency
2005	0.016	0.022	0.067	0.022	0.946	0.058	0.284	0.947	0.086
2006	0.018	0.029	0.060	0.015	0.604	0.052	0.278	0.293	0.095
2007	0.023	0.056	0.060	0.013	0.135	0.057	0.280	-0.087	0.121
2008	0.026	0.060	0.061	0.011	0.039	0.061	0.271	0.924	0.153
2009	0.028	0.094	0.051	0.008	0.018	0.103	0.288	0.301	0.125
2010	0.031	0.114	0.044	0.004	0.007	0.095	0.294	0.196	0.109
2011	0.029	0.167	0.038	0.001	0.010	0.121	0.293	0.300	0.193
2012	0.028	0.201	0.037	0.001	0.010	0.198	0.290	0.428	0.138
2013	0.028	0.228	0.039	0.002	0.008	0.225	0.284	0.415	0.178
2014	0.028	0.229	0.039	0.004	0.003	0.202	0.232	0.345	0.097
2015	0.028	0.250	0.040	0.003	0.000	0.208	0.211	0.595	0.121
2013~2015									
- 2011 Diff.	-0.001	<b>0.069</b>	0.001	<b>0.001</b>	<b>-0.006</b>	<b>0.090</b>	<b>-0.051</b>	<b>0.154</b>	-0.062
t-stat	(-0.71)	<b>(2.15)</b>	(0.24)	<b>(3.16)</b>	<b>(-4.42)</b>	<b>(11.94)</b>	<b>(-2.56)</b>	<b>(3.25)</b>	(-0.69)
% Diff.	-4.92%	40.98%	2.26%	104.14%	-64.05%	74.78%	-17.37%	51.52%	-32.14%

Panel B: SOEs									
Corruption Measures									
Year	CEO Comp. (%)	CEO Pay- Perform.	Related Sales	Related Loans	Other Receiv. (%)	Reg. Breaches	Entertain Exp. (%)	Operational Inefficiency	Inv. Inefficiency
2005	0.013	0.008	0.077	0.020	0.957	0.037	0.263	0.843	0.085
2006	0.015	0.014	0.073	0.014	0.609	0.033	0.262	0.226	0.090
2007	0.018	0.026	0.075	0.014	0.121	0.042	0.233	-0.124	0.117
2008	0.018	0.013	0.079	0.011	0.043	0.048	0.251	0.936	0.150
2009	0.018	0.031	0.071	0.009	0.021	0.081	0.239	0.340	0.125
2010	0.020	0.025	0.069	0.005	0.010	0.074	0.238	0.183	0.106
2011	0.018	0.024	0.065	0.002	0.015	0.095	0.261	0.311	0.206
2012	0.017	0.027	0.063	0.002	0.015	0.170	0.249	0.461	0.139
2013	0.015	0.031	0.068	0.002	0.012	0.187	0.213	0.435	0.180
2014	0.015	0.033	0.068	0.005	0.006	0.176	0.156	0.409	0.101
2015	0.014	0.041	0.074	0.005	0.000	0.186	0.127	0.762	0.139
2013~2015									
- 2011 Diff.	<b>-0.003</b>	<b>0.011</b>	0.005	<b>0.002</b>	<b>-0.009</b>	<b>0.088</b>	<b>-0.094</b>	<b>0.225</b>	-0.066
t-stat	<b>(-2.13)</b>	<b>(2.66)</b>	(0.44)	<b>(3.51)</b>	<b>(-3.52)</b>	<b>(15.20)</b>	<b>(-4.77)</b>	<b>(2.76)</b>	(-0.82)
% Diff.	-15.86%	48.00%	7.33%	119.07%	-60.67%	91.74%	-36.20%	72.37%	-32.10%

**Table 7**  
**Stock Returns of Event Firms and Related 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 from the beginning of the anti-corruption campaign on December 4, 2012 to December 31, 2015. We calculate 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. We first calculate daily abnormal return 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) DGTW-adjusted return. For a specific window, we calculate daily abnormal return using the calendar time approach, and then multiply the daily abnormal return by the number of days in the window to calculate CAR. T-statistics associated with returns are also reported. Panel A reports CARs for all event firms and non-event firms that are related to event firms, including customers of event firms, suppliers of event firms, firms in the same province as event firms, and firms with the largest overlap of C-suite managers with event firms. Panel B reports CARs for firms in the top or the bottom quintile of the propensity score of investigations. Bold is used for numbers that are statistically significant at 0.10 level.

<b>Panel A: Abnormal Returns of Event Firms and Connected Firms</b>						
	<b>Market-Adj. Ret.</b>		<b>Size-Adj. Ret.</b>		<b>DGTW-Adj. Ret.</b>	
	Return	t-stat	Return	t-stat	Return	t-stat
<b>Event Firms</b>						
<b>CAR [-1,+1]</b>	<b>-1.55%</b>	<b>(-2.63)</b>	<b>-1.41%</b>	<b>(-2.64)</b>	<b>-1.42%</b>	<b>(-2.77)</b>
<b>CAR [-1, +15]</b>	-1.28%	(-0.83)	-1.33%	(-0.92)	-1.39%	(-1.05)
<b>CAR [-15, +125]</b>	-6.91%	(-1.49)	-3.67%	(-0.90)	-2.26%	(-0.68)
<b>CAR [-15,+250]</b>	-0.23%	(-0.03)	4.68%	(0.58)	2.77%	(0.39)
<b>Panel B: Abnormal Returns of Subsamples of Firms</b>						
<b>Customers of Event Firms</b>						
<b>CAR [-1,+1]</b>	<b>-1.46%</b>	<b>(-2.13)</b>	<b>-1.39%</b>	<b>(-2.18)</b>	-1.01%	(-1.60)
<b>CAR [-1, +15]</b>	-1.72%	(-1.13)	-1.51%	(-1.06)	-1.24%	(-0.90)
<b>Suppliers of Event Firms</b>						
<b>CAR [-1,+1]</b>	1.07%	(0.68)	1.09%	(0.67)	1.81%	(1.28)
<b>CAR [-1, +15]</b>	-2.55%	(-0.81)	-0.77%	(-0.25)	-0.58%	(-0.23)
<b>Firms in the Same Province</b>						
<b>CAR [-1,+1]</b>	0.05%	(0.36)	0.07%	(0.67)	0.06%	(0.65)
<b>CAR [-1, +15]</b>	<b>0.77%</b>	<b>(1.78)</b>	0.53%	(1.64)	<b>0.54%</b>	<b>(1.97)</b>
<b>Firms with Managerial Connections</b>						
<b>CAR [-1,+1]</b>	-0.35%	(-0.83)	-0.56%	(-1.36)	-0.34%	(-0.93)
<b>CAR [-1, +15]</b>	2.24%	(1.59)	2.09%	(1.48)	2.16%	(1.64)
<b>Top Quintile of Propensity Scores of Investigation</b>						
<b>CAR [-1,+1]</b>	0.01%	(0.04)	-0.05%	(-0.49)	-0.06%	(-0.99)
<b>CAR [-1, +15]</b>	<b>-0.75%</b>	<b>(-2.04)</b>	-0.12%	(-0.35)	-0.22%	(-1.16)
<b>Bottom Quintile of Propensity Scores of Investigation</b>						
<b>CAR [-1,+1]</b>	-0.19%	(-0.70)	-0.05%	(-0.32)	0.00%	(0.03)
<b>CAR [-1, +15]</b>	<b>2.23%</b>	<b>(2.50)</b>	<b>1.12%</b>	<b>(2.18)</b>	<b>0.91%</b>	<b>(2.63)</b>

Table 8

**Abnormal Corruption Measures for All Chinese Firms in 2005-2015: Benchmarked to Hong Kong Firms**

This table presents annual averages of abnormal corruption measures for all Chinese listed firms from 2005 to 2015. The sample includes all firms listed on Shanghai and Shenzhen stock exchanges (A shares). For each Chinese firm, we identify a matched firm using the propensity score matching based on the corruption measures. 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) *Abs.(DACC)* (Absolute value of discretionary accruals, scaled by total assets); 3) *# Regulation breaches* (Number of regulation breaches in a year); 4) *Operational Inefficiency*, calculated as growth of sales minus growth of net income; 5) *Investment inefficiency*, calculated as the absolute value of residue from regression of investment on sales growth within each industry-year; 6) *Normalized volatility and differenced volatility* around earnings announcement. Absolute value of discretionary accruals and operational inefficiency 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, operational inefficiency, and investment inefficiency. We also report differences between 2011 (before anti-corruption campaign) and the average of 2013-2015 (after the start of anti-corruption campaign), as well as the associated t-statistics calculated using standard errors clustered by industry. Bold is used for numbers that are statistically significant at 0.10 level.

Year	Earnings Discontinuity		Abs. (DACC)	# Regulation Breaches	Operational Inefficiency	Investment Inefficiency	Return Volatility around Earnings Announcement	
	Small Profit	Small Loss					Normalized Volatility	Differenced Volatility
2005	0.059	-0.045	-0.034	0.049	0.863	-0.059	-0.212	-0.005
2006	0.035	-0.032	-0.014	0.043	0.325	-0.038	-0.018	0.000
2007	0.053	-0.041	-0.024	0.045	-0.080	-0.027	0.033	0.000
2008	0.124	-0.113	-0.032	0.050	-0.083	0.047	-0.175	-0.004
2009	0.027	-0.031	-0.021	0.107	0.685	0.037	-0.218	-0.004
2010	0.065	-0.064	-0.021	0.106	0.242	-0.062	-0.098	-0.002
2011	0.100	-0.066	-0.020	0.130	-0.066	0.043	-0.119	-0.004
2012	0.092	-0.064	-0.023	0.206	0.259	0.073	-0.247	-0.005
2013	0.072	-0.051	-0.014	0.223	0.065	0.107	-0.099	-0.003
2014	0.069	-0.052	-0.017	0.217	0.203	0.028	-0.158	-0.002
2015	0.100	-0.102	-0.013	0.226	0.262	0.058	-0.255	-0.004
2013~2015								
- 2011 Diff.	-0.029	0.015	0.005	<b>0.092</b>	<b>0.248</b>	0.020	-0.046	0.001
t-stat	(-1.48)	(1.32)	(1.19)	<b>(7.57)</b>	<b>(4.26)</b>	(0.36)	(-1.17)	(1.10)