Too Cynical! How Stock Market in China Dismissed Anticorruption Signals

Xiaonan Wang

University of Maryland

Yan Wang

London School of Economics and Political Science

Abstract: Anticorruption campaigns are dramatic events with unusually harsh rhetoric and high-profile crackdowns. However, using event study and synthetic control, we find that Xi Jinping's anticorruption campaign — a sensational and largely genuine anticorruption effort — was not initially taken seriously by the stock market: Early anticorruption speeches and crackdowns did not decrease the stock prices of the firms whose connected officials were later investigated. To explain the puzzling results, we argue that high cost of following through and repeated campaigns in the past paradoxically nurtured cynicism. By exploring the variations of factions, we provide evidence that the stock market initially perceived the campaign only as a power struggle and misinterpreted the crackdowns on senior officials as signs that the campaign was about to slow down. Our findings cast doubt on the effectiveness of campaign-style enforcement, even in the short-term.

Introduction

Campaign-style enforcement is dramatic event "involving extraordinary mobilization of administrative resources under political sponsorship to achieve a specific policy target within a defined period of time" (Liu et al., 2015). It has been used in different countries, often to address the problems of corruption and crime.[1] Inherited as a revolutionary legacy, the campaign-style enforcement takes a special role for the governance of the Chinese Communist Party (CCP) (Perry and Heilmann, 2011).

One of the policy areas for which the CCP has heavily relied on campaigns is anticorruption. When corruption is already widespread, anticorruption campaigns can be used as a deterrent threat and a signal to demonstrate enforcement commitment (Lui, 1986; Manion, 2004; Wedeman, 2005). Most recently, Xi Jinping launched an anticorruption campaign from the late 2012, soon after he became the party's top leader. While some media have doubted that the campaign was for Xi Jinping to consolidate power,[2] many scholars have considered the campaign as a largely genuine policy effort to address widespread corruption (Brown, 2018; Li, 2019b; Lu and Lorentzen, 2016; Keliher and Wu, 2016; Manion, 2016; Wedeman, 2017). Retrospectively, the unprecedented duration and intensity have also suggested that the campaign is at least more than a pure power struggle.[3] However, even if Xi Jinping's anticorruption campaign has later revealed to be a serious policy effort, an important question is whether the campaign was taken seriously in the beginning. The distinction is important because being perceived as a serious policy effort is the premise for

[1] Recent examples of anticorruption campaigns include the 2017 Saudi Arabian anticorruption crackdown, Putin's "National Plan of Countering Corruption for 2018-2020" in Russia, the Angola's 2020 anticorruption campaign led by President João Lourenço. See https://www.pna.gov.ph/categories/anti-drugs-campaign for the recent antidrug campaign in Philippines. Some countries also use campaign-style enforcement to address the problems of drunk driving and speeding (Rundmo and Iversen, 2004; Tay, 2005).

[2] For example, see a special report by Reuters at https://www.reuters.com/article/us-china-corruption-special-report/special-report-the-power-struggle-behind-chinas-corruption-crackdown-idUSBREA4M00120140523; see an article in the Guardian at https://www.theguardian.com/world/2016/may/04/china-xi-jinping-house-of-cards-attacks-conspirators; see an opinion in the Daily Mail at https://www.dailymail.co.uk/wires/afp/article-3565129/Xi-faction-suggests-China-elite-struggle-experts.html.

[3] On December 13, 2018, the party for the first time declared a sweeping victory over corruption, see http://www.xinhuanet.com/english/2018-12/13/c137672180.htm. It has been six years since Xi Jinping launched the campaign. During 2013 to 2018, the number of investigations on both senior officials and rank and file soared relative to the previous numbers, see https://www.spp.gov.cn/spp/gzbg/201803/t20180325372171.shtml.

the campaign to be effective in deterring corruption and restoring enforcement credibility.

In this paper, we study whether Xi Jinping's anticorruption campaign was taken seriously during the early stage of the campaign from December 2012 to the end of 2013, using evidence from China's stock market. The stock markets are supposed to be sensitive to new and unanticipated news (Fama, 1991; Malkiel and Fama, 1970) and they have been commonly used to estimate the impacts of political events and policy changes (Acemoglu et al., 2018; Fisman, 2001; Jensen and Schmith, 2005; Watson and Arunachalam, 2018). Specifically, we estimate the stock returns of 49 firms whose connected officials with or above sub-provincial (ministerial) rank were later investigated during Xi's anticorruption campaign, around the days when the top political leaders made anticorruption speeches, and when the investigations on other senior officials with or above sub-provincial (ministerial) rank were announced. If Xi Jinping's anticoruption campaign was taken seriously, the 49 firms would be the most likely cases to be negatively affected in the stock market — these firms were not only politically connected, their political connections were also corrupt and later removed in the campaign. We use the event study method to estimate abnormal stock returns (Campbell et al., 1997). We also apply the synthetic control method (Abadie and Gardeazabal, 2003; Abadie et al., 2010) to match a control series of abnormal returns for each of the 49 firms, from a set of control firms that are in the same industry and have the same type of ownership. We find that even for these most likely cases that were supposed to be negatively affected, the anticorruption speeches and crackdowns in the beginning of the campaign did not decrease their stock prices.

Why was such a sensational and largely genuine anticorruption effort not initially taken seriously by a supposedly sensitive reader of politics? To explain the puzzling results, we argue that two features that are necessary for anticorruption campaigns to work can also paradoxically nurture cynicism towards campaigns. First, anticorruption campaigns have to be unusually costly to distinguish themselves from the routine enforcement, but high costs of following through also make the signals less likely to be perceived as credible (McManus, 2017). Second, anticorruption campaigns need to be periodically launched to maintain the deterrent threats and enforcement

credibility. However, when campaigns have been repeatedly used, the society may become immune to the subsequent waves of campaigns, especially if the previous campaigns fail to establish a credible reputation.

By exploiting the heterogeneous effects on the firms whose connected officials were (or were not) allegedly involved in the power struggle, and the factional links between the connected officials of the firms and the targeted officials in the crackdowns, we provide evidence of cynicism. First, the stock market initially perceived Xi's anticorruption campaign only as a power struggle. We find that for the firms whose connected officials were allegedly involved in the power struggle, their stock prices dropped around the days when the anticorruption speeches were made, and when the crackdowns were targeted on officials in the same faction. No similar patterns are found for firms whose connected officials were not involved in the power struggle. Second, the stock market misinterpreted the crackdowns on seniors officials as "good news" that the campaign was about to slow down. We find that for the firms whose connected officials were not involved in the power struggle, their stock prices increased around the days when the investigations on senior officials were announced, especially the targeted officials were allegedly involved in the power struggle.

Our paper mainly connects to two bodies of literature. First and foremost, our paper connects to a broad literature on campaign-style enforcement. Existing studies have discussed how the campaign-style enforcement can solve thorny policy problems when regular enforcement has failed (Liu et al., 2015; Perry, 2011; Van der Kamp, 2020; Van Rooij, 2006; Wang, 2018; White, 1990). However, our results suggest that it is not self-evident that such a dramatic event will be taken seriously. The fact that the signals can be dismissed and perceived cynically means that the campaign-style enforcement may not be effective, even in the short-term. Scholars have found mixed evidence on the effectiveness of campaigns (Biddulph et al., 2012; Liu et al., 2015; Sun, 2020; Var der Kamp, 2019; Van Rooij, 2006; Wang, 2020), but have yet developed satisfactory explanations for why campaigns are effective sometimes but not others. In this paper, we emphasize that an effective campaign is premised on the condition that it is perceived as a serious policy effort. Although our paper only discusses why anticorruption campaigns in China are prone to cynicism,

the two factors — whether the costs of following through are high and whether campaigns have been repeatedly used in the past — could be important predictors on how campaigns are likely to be perceived in other policy areas. Finally, our paper has important practical implications. Campaign-style enforcement is a strategy of "governance on the cheap" — governing without investing in the construction of formal institutions — a context that is relevant for all developing countries (Tsai, 2017).

Second and more directly, our paper is related to other studies on Xi Jinping's anticorruption campaign. One strand of the literature focuses on the real nature of Xi Jinping's anticorruption campaign (Brown, 2018; Kautz, 2020; Keliher and Wu, 2016; Li, 2019b; Wedeman, 2017). Different from their perspective, we focus on how the campaign was initially perceived and we provide empirical evidence that the investors in China's stock market misniterpreted Xi Jinping's campaign cynically. Another strand of the literature studies public reactions to Xi's anticorruption campaign. The debate focuses on whether the massive publicity of corrupt officials will be applauded as a great effort in fighting corruption or will lead to disenchantment about political institutions. The evidence shows that the results depend on the public's personal experience of corruption and government services, sources of information access and prior beliefs on the integrity of government officials (Kang and Zhu, 2020; Li and Meng, 2020; Wang and Dickson, 2019). Our findings of cynicism suggests another mechanism on how anticorruption campaigns may end up undermining their own legitimacy. The final strand of the literature evaluates the economic consequences of Xi's anticorruption campaign. The existing evidence shows that the values of firms' political connections decreased after 2013 (Liu and Ying, 2019), corruption in land transactions was brought down when the corrupt local leaders were removed (Chen and Kung, 2019), the imports of luxury goods that are easily observed by the public reduced after the campaign (Qian and Wen, 2015). These changing economic behaviors since Xi Jinping's anticorruption campaign imply that the anticorruption signals were somehow taken seriously. Contrary to their findings, our results suggest that the perceived threats from the anticorruption campaign may be overstated, at least in the beginning.

The remainder of the paper proceeds as follows. In the next section, we briefly review the

related literature on campaign-style enforcement and anticorruption campaigns in China. Then, we empirically test whether Xi Jinping's anticorruption was taken seriously, using evidence from China's stock market. After that, to explain the puzzling results that the anticorruption signals were dismissed, we propose an argument on how anticorruption campaigns paradoxically nurture cynicism. Then, we provide empirical evidence of cynicism. In the final section, we conclude with discussions on both theoretical and practical implications of our paper.

Related Literature

The CCP'S reliance on campaigns originated from the incompleteness of formal institutions and the need to mobilize the mass in the early revolutionary period (Perry and Heilmann, 2011; Wang, 2018). The Mao era was dominated by campaigns,[4] as the party made a deliberate choice of using ideological indoctrination and mass mobilizations to accelerate the speed of development and maintain revolutionary spirits (Jowitt, 1974; Zhou, 2012). It seems to be the end of campaigns when the CCP largely abandoned ideological struggles and mass mobilizations in favor of the formal rational bureaucratic institutions in the reform era. However, the campaign-style enforcement has not died. Instead, it has been transformed from an ideologically driven mass campaign to a policy driven "managed campaign" (Perry, 2011), adopted as a pragmatic policy strategy "when regular enforcement fails and urgent tasks require timely responses" (Liu et al., 2015).

Although the campaigns in the reform era less frequently involve ideological struggles and mass mobilizations (Perry, 2011), they are still dramatic events. The literature has found the following intensive measures in the campaign-style enforcement. First, extensive administrative, fiscal and propaganda resources are mobilized to the targeted policy area (Liu et al., 2015; Perry, 2011; Zeng, 2020; Sun, 2020), with other policy objectives set aside. Second, in contrast to the legal-rational approach, campaign-style enforcement uses "blunt force" regulations (Van der Kamp, 2020). Third, *ad hoc* agencies are often established on top of the existing institutions to

[4]To name a few examples, the Hundred Flowers Campaign (1956-1957), the Great Leap Forward (1958-1960), the Cultural Revolution (1966-1976).

lead the campaign (Wang, 2018; Zeng, 2020). The CCP uses these intensive policy measures to signal the political importance of the targeted issue and the determination of extracting results in a short period of time (Liu et al., 2015; Wang, 2018; Zeng, 2020).

The campaign-style enforcement has been used in various policy areas with mixed effectiveness.[5] One of the policy areas where the CCP has repeatedly resorted to campaigns is anticorruption.[6] A typical anticorruption campaign in China starts with the top political leader making unusually harsh anticorruption speeches, followed by a surge of high-profile crackdowns. After a while, the party claims victory over corruption and then the campaign ends, until the party launches a new wave of campaign. Most recently, Xi Jinping launched an unprecedented anticorruption campaign right after he became the party's top leader.

Some scholars argue that when corruption is already widespread, periodically resorting to anticorruption campaigns is a rational policy strategy (Lui, 1986; Manion, 2004; Wedeman, 2005). Anticorruption campaigns can be a solution to widespread corruption through two mechanisms. First, anticorruption campaigns work through the mechanism of deterrence. One problem with widespread corruption is that regular enforcement resources are inadequate once corruption becomes widespread, as the costs of detection increase with the number of cases (Lui, 1986; Manion, 2004). Anticorruption campaigns can solve the problem by mobilizing a temporary surge of enforcement resources in a short period of time to increase the probability of detection and the severity of punishments — a deterrent threat that intends to reduce the level of corruption down to the tipping point where the regular enforcement force can deal with (Kleiman, 1993). Although anticorruption campaigns are short-term, the possibility that a surge of investigations may be launched in an unforeseeable future can help achieve long-term deterrence (Wedeman, 2005). Second, anti-

[5]Some studies find that in the area of environmental regulation and lawmaking, campaigns promoted the political importance of the targeted issue (Liu et al., 2015; Biddulph et al., 2012). Some studies find that campaigns shifted the policy attentions at the cost of generating distorted incentives, in the area of intellectual property rights enforcement (Dimitrov, 2009), building new socialist countryside (Looney, 2015) and affordable housing provision (Sun, 2020). Other studies cast doubt on the effectiveness of campaigns in the central environmental inspections (Var der Kamp, 2019).

[6]The CCP has launched at least seven waves of anticorruption campaigns in the reform era. Manion (2004) has documented the anticorruption campaigns in 1982, 1986, 1989, 1993 and 1995. In 2006, the CCP launched an anticorruption investigation against the then Shanghai Party Secretary Chen Liangyu. In December 2012, Xi Jinping launched the most recent anticorruption campaign.

corruption campaigns work through the mechanism of restoring enforcement credibility. Another problem with widespread corruption is that signalling a credible anticorruption commitment is difficult when corruption is already widespread (Manion, 2004; Morris and Klesner, 2010; Persson et al., 2013; Rothstein, 2011). The unusually harsh rhetoric and high-profile crackdowns distinguish anticorruption campaigns from the unreliable regular enforcement. In addition, when the citizens are disappointed with the party's routine enforcement against corruption, there may also be a demand for change from below (O'Brien and Li, 1999; Li, 2001). Therefore, anticorruption campaigns can be used as a signal to demonstrate enforcement commitment. For example, China's anticorruption campaigns in the 1990s were mainly used as signals to "demonstrate to corrupt officials, their accomplices, and ordinary Chinese that the situation had changed and the regime was a reliable anticorruption enforcer" (Manion, 2004).

The literature has also discussed the effectiveness of anticorruption campaigns in the CCP's history. Lui (1986) considers the anticorruption campaign in the 1950s as a successful example of deterrence — one wave of crackdowns deterred corruption for the next two decades. In the reform era, while multiple waves of anticorruption campaigns certainly did not eliminate the problem of corruption, the literature finds that these campaigns have largely controlled the level of corruption under a tipping point beyond which further increases would lead to crises (Manion, 2004; Wedeman, 2005). Wedeman (2005) argues that anticorruption campaigns are more effective in deterring low-level but not high-level and high-stakes corruption (Wedeman, 2005).

What the literature has less studied is how anticorruption campaigns are perceived. This question is important, because for anticorruption campaigns to effectively deter corruption and restore enforcement credibility, they must be perceived as a credible policy effort first. Although the signals from anticorruption campaigns — the unusually harsh rhetoric and high-profile crackdowns — seem loud and clear, it should not be taken for granted that they will be perceived as what they actually are (Jervis, 1982). The literature of deterrence in criminology has long recognized that the perceptual properties of deterrence (the perceived probability of detection and severity of punishment) are not necessarily the same as the objective properties of deterrence (the actual probability

of detection and severity of punishment).[7] In other words, it is possible for the anticorruption threats to be dismissed. Similarly, to restore enforcement credibility, the campaign initiator has to convince the public that this time is really different. However, whether the effort works ultimately depends on how the public views it. In this paper, we study Xi Jinping's anticorruption campaign from this less noticed perspective. In the next section, we empirically evaluate whether Xi Jinping's anticorruption campaign was taken seriously in the beginning.

Was Xi's Campaign Taken Seriously?

Research Design

We employ a research design that can directly test whether Xi Jinping's anticorruption campaign was initially taken seriously, using evidence from China's stock market. Specifically, We estimate the impacts of initial anticorruption speeches made by the top leaders and early crackdowns on senior officials. We are interested in three key anticorruption speeches between December 2012 and May 2013, including the announcement of the "Eight-point Regulation" on December 4, 2012,[8] the speech made by Xi Jinping about "cracking down on both tigers and flies" on January 22,[9] and the announcement of beginning central inspections on May 17, 2013. Table A.1 in the Appendix lists the details of the three speeches. The campaign was followed by a surge of crackdowns on senior officials. From May 2013 to December 2013, 16 officials with or above sub-provincial (ministerial) rank were announced to be under investigation. We define these 16 cases as the events of early crackdowns. Table A.2 in the Appendix lists the details of these cases.

The three anticorruption speeches and the 16 cases of early crackdowns are the events of in-

[7] See Paternoster (1987) and Williams and Hawkins (1986) for reviews on the researches of deterrence from perceived properties of sanctions.

[8] Although the "Eight-point Regulation" was an anti-waste campaign and the regulation itself did not mention anticorruption, the rectification on the party's working style was often the prelude for a large scale political purge or anticorruption campaigns in the party's history. The historical examples include Yan'an rectification movement from 1942 to 1944, "Three-anti" and "Five-anti" campaigns in 1951. For the history of campaigns, see Lieberthal (1995) and Spence (1990).

[9] Tigers refer to senior ranking officials, flies refer to officials in junior ranks. The rhetoric was commonly used in the Mao era.

terests in our study. We use evidence from China's stock market because stock market is notable sensitive to political signals. The studies that use stock markets to estimate the impacts of policy changes rely on the assumption that stock markets react quickly to new and unanticipated information (Malkiel and Fama, 1970; Fama, 1991) on either policy directions or policy resolves (Benton and Philips, 2020). We justify that in the case of Xi Jinping's anticorruption campaign, the three anticorruption speeches and the 16 cases of early crackdowns all provide new and unanticipated information.

First, both the announcement of the "Eight-point Regulation" and the speech of "cracking down on both tigers and flies" provided unanticipated new information about a possible change of direction in the anticorruption policy. Xi Jinping made the two speeches within three months since he became the new party leader, at a time when he had not fully revealed his policy agenda. Although the dates of the speeches could be scheduled and anticipated, the contents and tones were not likely to be anticipated beforehand. Second, the announcement of starting central inspections provided unanticipated new information about the political leader's policy resolve in fighting corruption. The announcement occurred about half a year after Xi Jinping first signalled his intention to fight corruption. Although it did not provide new and unanticipated information on the policy direction, it was different from the previous two speeches as it marked the beginning of real actions. Prior to the start of central inspections, Xi Jinping's resolve in anticorruption was unclear, as few serious actions were taken.[10] Finally, the publicity of early crackdowns on senior officials also provided information about the political leader's policy resolve. The targets in the early crackdowns were clues on how far the political leader was willing to go in the campaign.

To empirically identify whether Xi Jinping's anticorruption campaign was taken seriously or not, our strategy is to estimate the stock returns on a set of firms that were supposed to be affected by the events. This approach has been commonly used to estimate the impacts of political events. For instance, Fisman (2001) estimates the impact of rumors about Suharto's death on the stock prices of the Indonesian firms that are connected with Suharto. Acemoglu et al. (2018) studies

[10]For example, before May 17, 2013, only two senior officials with or above sub-provincial (ministerial) rank were investigated.

how the protests against Mubarak's government affect the stock prices of the Egyptian firms that are connected with the ruling group and the opponent. In our study, we identify a set of firms whose connected officials with or above sub-provincial (ministerial) rank were later investigated in the anticorruption campaign. The logic of our strategy is straightforward: If Xi Jinping's anti-corruption campaign was taken seriously, the investors in the stock market would be able to smell the danger on the firms whose connected officials later revealed to be the targets of the anticorruption investigations; if the investors perceived the threats from the anticorruption speeches and early crackdowns, these firms' stock prices should drop around these events.[11] Compared with all the other listed firms, these firms were the most likely cases to be negatively affected in the stock market, as they were not only politically connected, their political connections were also corrupt and later investigated.

To compile a set of firms whose connected officials were later investigated in the campaign, we first found the names of 179 officials with or above sub-provincial (ministerial) rank who were investigated between December 2012 and December 2017.[12] We searched the names of the investigated officials on the Internet to identify any listed firms that were reported to be connected with the official.[13] We identified 49 firms that are listed on the Shanghai and Shenzhen A-shares market. We define these 49 firms as the event firms. Table A.3 in the Appendix presents the basic information of the 49 firms. We obtained the daily stock prices and other financial information from the *China Stock Market and Accounting Research (CSMAR)* Database.[14]

We have the following observable implication: If Xi Jinping's anticorruption campaign was

[11] We assume that the political connections were known to at least some of the large and sophisticated investors prior to the time when the connections were made public by the investigations. Anecdotal evidence suggests that rumors about covet connections between politicians and firms often circulated long before they became public. Sometimes, soon after the officials were announced to be under investigation, the media could publish detailed stories on the officials' corrupt activities with the connected firms, with the sources from insiders or informed parties.

[12] The list of officials was obtained from the official website of the Central Commission for Discipline Inspection http://www.ccdi.gov.cn/. We also validated the list from Wikipedia and Baidu Baike.

[13] The media often published in-depth reports following the investigations of senior officials. Most of these reports covered the officials' connections with firms. We also explicitly searched the names of the officials with the keywords such as "firm","listed firm","business" and "state-business relationship". If the investigated official was the manager of a state-owned firm, we did not count the firm as having corrupt political connection. Most of the firms were connected with officials through bribing, forming political-business allies, or through relatives.

[14] For more information on the *CSMAR* Databse, see http://us.gtadata.com/.

taken seriously in the beginning, the stock prices of the event firms should drop following the days of the three anticorruption speeches and 16 early crackdowns.

Estimation Strategies

The estimations of interests are abnormal stock returns and cumulative abnormal returns around the days of anticorruption speeches and crackdowns. By definition, the abnormal stock return is the actual return of the stock price over a defined event window minus an estimated normal return. We exploit two estimation strategies. First, as the baseline estimation, we use the event study method with the regression approach (Binder, 1985; Schipper and Thompson, 1983). To complement the statistical inference from conventional standard errors, we also apply the event study using a non-parametric sign test with exact distributions (Dube et al., 2011). We present the sign test analysis in the online supplementary materials. Second, to deal with possible synchronizing common shocks that may confound the results, we compare the abnormal returns of each event firm with a matched series of abnormal returns from similar firms using the synthetic control method (Abadie and Gardeazabal, 2003; Abadie et al., 2010).[15]

In the baseline event study, we use the market model to estimate normal returns. The market model assumes a stable linear relation between the market return and the return of the event firm. We estimate the abnormal returns by adding a set of dummies around the event days in the regression model.[16] Our baseline model is as follows,

$$R_{it} = \alpha_i + \beta_i R_{mt} + \gamma_1 D_{speech1} + \gamma_2 D_{speech2} + \gamma_3 D_{speech3} + \delta D_{crackdowns} + \varepsilon_{it} \quad (1)$$

[15] As all firms were potentially subject to the impacts of Xi Jinping's anticorruption campaign, we do not have clean controls that could allow us to interpret the estimations as causal effects of Xi's anticorruption campaign on the firms with connected officials later removed. We interpret the synthetic control effects as how the firms with connected officials later investigated were affected, relative to the similar firms that did not have connected officials being investigated during the campaign.

[16] An alternative way is to estimate the abnormal returns for each event firm separately and then aggregate the firm-specific abnormal returns. This alternative approach assumes that the abnormal returns are independent across event firms and events, which is often not true when the event occurs during the same period for each event firm or firms in the related industries. Therefore, we follow the advice in Binder (1985) and MacKinlay (1997) to use the regression approach.

R_{it} is the one-day stock return for firm i at date t relative to date $t-1$, calculated using the closing price P_t as $\frac{P_t - P_{t-1}}{P_{t-1}} \times 100$. α_i is the firm-specific dummies. R_{mt} is the one-day market return between date t and $t-1$.[17] β_i estimates how the daily stock returns of firm i correlate with the daily market return.[18] $D_{speech1}$, $D_{speech2}$ and $D_{speech3}$ are three dummy variables taking the value of 1 if the trading day is within a k-day window for the speech on "Eight-point regulation", "cracking on both tigers and flies" and starting central inspections respectively and 0 otherwise. $k\gamma_1$, $k\gamma_2$ and $k\gamma_3$ are the cumulative abnormal stock returns in the k-day window for the corresponding events. Because the stock market incorporates new information into stock prices quickly, we focus on short event windows. In the baseline model, we use a two-day event window, starting from the same day when the speeches were made. We also report the results from one-day and three-day event windows. $D_{crackdown}$ is a dummy variable taking the value of 1 if the trading day is within a k-day window around any of the early crackdowns and 0 otherwise. δ is the average effect of crackdowns aggregated across all the 16 early investigations. In the baseline model, we use a two-day event window, starting from one trading day before the official announcement to take the possible news leak into consideration. We also report the results from one-day and three-day event windows.

We include the sample that covers the calendar dates from January 1, 2011 to December 31, 2013. If at date t, the connected official of firm i was about to be investigated in the next 14 calendar dates, we drop firm i from the time period after date t. This assures that the effects of anticorruption speeches and early crackdowns are not contaminated by the investigations on the connected officials of the event firms themselves. A total of 11 firms are dropped at some points and 10 of them are dropped after May 2013. To adjust for the potential residual correlations within the same firm as well as within the same date, we cluster the standard errors on both firm and date, using the multiway clustering (Cameron et al., 2012).

As the abnormal returns around the event dates could be driven by other concurrent events,

[17] For the firms listed in the Shanghai stock market, we use the Shanghai A-shares index. For the firms listed in the Shenzhen stock market, we use the Shenzhen A-shares index.

[18] In the regression model, we interact the firm-specific dummies with β to get the firm-specific β_i.

we thus need a control group to account for the confounding effects. For each event firm, we construct a control series of abnormal returns using the synthetic control method (Abadie and Gardeazabal, 2003; Abadie et al., 2010). The synthetic control method can be seen as an extension to the difference-in-differences estimation — instead of using only one control unit or a simple average of a set of control units, the synthetic control method uses a weighted average of control units that can best approximate the outcome path of the treated unit in the pre-treatment period.[19] The method was originally used in a situation with only one treated unit and multiple control units (Abadie and Gardeazabal, 2003; Abadie et al., 2010) and has later been adapted to the situations with multiple treated units (Acemoglu et al., 2016, 2018; Liou and Musgrave, 2014).

For each event firm, we define its control firms as those in the same industry and have the same type of ownership but did not have connected officials being investigated during the campaign. If our events of interests synchronize with other events that can affect the stock returns of the firms in the same industry with the same type of ownership, the control firms would be able to take care of the effects. We first estimate the correlations that minimize the mean squared errors between the abnormal returns of the control firms and the abnormal returns of the event firm in an estimation window prior to the event. We take the calendar dates between November 1, 2011 to November 1, 2012 as the estimation period. Table A.4 in the Appendix reports the number of control firms and the length of the estimation window for each event firm.[20] If the correlations are stable in the event window, we can assign the correlations as weights to the control firms to construct the synthetic abnormal returns in the event window. To avoid model extrapolation, we constrain the weights to be non-negative and sum up to one (Abadie et al., 2015).[21] The synthetic control effects are the actual abnormal returns minus the synthetic abnormal returns.

[19] One advantage of the synthetic control over difference-in-differences is its ability in dealing with the heterogeneous responses to unobserved common shocks. Other advantages include no extrapolation, transparency of the fit, safeguard against specification searches, transparency of the counterfactual and sparsity (Abadie, 2019).

[20] We drop one event firm that does not have the control firms in the same industry and have the same type of ownership.

[21] There are other ways to constrain and estimate the weights (Doudchenko and Imbens, 2016; Li, 2019a; Hsiao et al., 2012; Xu, 2017), the choices should be considered on their merit rather than a rule (Doudchenko and Imbens, 2016; Li, 2019a). In this paper, we use the estimation strategy proposed by Abadie and Gardeazabal (2003) and Abadie et al. (2010) as a simple and transparent method that also does not depend on model extrapolation outside the support of the data.

We can write the process of synthetic control estimations as follows. First, for each event firm i, we estimate the weights using abnormal returns in an estimation window prior to any of the events,

$$\underset{\omega}{\operatorname{argmin}} \sum_{t=1}^{t_0} (A\hat{R}_{it} - \sum_{j=1}^{N_{co}} \omega_j A\hat{R}_{jt})^2, \quad subject\ to\ \omega_j \geq 0\ and\ \sum_{j=1}^{N_{co}} \omega_j = 1 \tag{2}$$

$A\hat{R}_{it}$ is the estimated abnormal returns of event firm i at time t of the estimation window. The time between $1,2,3,\ldots,t_0$ is the estimation period. j is the index for control firms and N_{co} is the number of control firms. ω_j is the weight that is estimated and later assigned to the control firm j. We standardize the abnormal returns to make them on the same scale before estimating the weights. Second, we calculate the synthetic control effect ζ for the event firm i in the event date k as,

$$\hat{\zeta_{ik}} = A\hat{R}_{ik} - \sum_{j=1}^{N_{co}} \hat{\omega}_j A\hat{R}_{jk} \tag{3}$$

The synthetic control effect ζ_{ik} is the abnormal returns of firm i at time k minus the abnormal returns from the weighted average of the control firms at time k, using the weights $\hat{\omega}_j$ estimated from (2). Then, we repeat the above procedures for other event firms. Finally, to calculate the average synthetic effect ϕ_k in the event date k, we aggregate the synthetic control effects ζ_{ik} across all event firms in the following way,

$$\hat{\phi_k} = \frac{\sum_{i=1}^{N_{event}} \hat{\theta}_i \hat{\zeta_{ik}}}{\sum_{i=1}^{N_{event}} \hat{\theta}_i}, \ \ where\ \hat{\theta}_i = \frac{1}{\hat{\sigma}_i}\ and\ \hat{\sigma}_i = \sqrt{\frac{\sum_{t=1}^{t_0} (A\hat{R}_{it} - \sum_{j=1}^{N_{co}} \hat{\omega}_j A\hat{R}_{jt})^2}{T_0}} \tag{4}$$

In the formula, the average synthetic control effect in the event date k is weighted by the precision of the synthetic match in the estimation period — the event firms with better synthetic match are given higher weights, because those that can be more precisely matched should contribute more to the estimations (Acemoglu et al., 2016).

To make meaningful inferences from the synthetic control estimations, we adapt the permutation test in Abadie and Gardeazabal (2003) and Abadie et al. (2010) to the situation with multiple event firms. Specifically, we create 1000 placebo groups with randomly selected pseudo event firms. Each placebo group has the same number of pseudo event firms as the real number of event firms N_{event}. For each placebo group, we first randomly draw N_{event} pseudo event firms from a total of 583 control firms. We then randomly assign them with announced investigation dates from the real dates of investigations. Using the procedure (2) to (4) discussed above, we estimate the synthetic control effects for each placebo group. We repeat the process 1000 times to obtain 1000 placebo effects and use them to construct the test statistics. If the actual effects are truly different from the placebo ones, they should locate at the extreme percentiles in the placebos.

Table 1. Descriptive Statistics of Daily Stock Returns

Variables	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Before the campaign: 2011.01.01-2012.11.01							
Daily stock returns: event firms	21,390	−0.083	2.662	−54.094	−1.375	1.220	75.515
Daily stock returns: control firms	258,535	−0.099	2.811	−58.556	−1.431	1.270	10.169
Market returns: Shanghai A-shares Index	444	−0.062	1.119	−3.781	−0.725	0.538	4.179
Market returns: Shenzhen A-shares Index	444	−0.084	1.468	−4.414	−0.932	0.816	5.168
After the campaign: 2012.12.04-2013.12.31							
Daily stock returns: event firms	12,510	0.073	2.591	−58.257	−1.241	1.296	10.182
Daily stock returns: control firms	150,014	0.112	2.732	−59.176	−1.282	1.422	10.189
Market returns: Shanghai A-shares Index	258	0.037	1.189	−5.303	−0.593	0.615	4.334
Market returns: Shenzhen A-shares Index	258	0.152	1.439	−6.114	−0.686	1.045	4.138

Before presenting the results, we report the descriptive statistics in Table 1 with the distributions of daily stock returns for event firms, control firms and market indexes before and after the anticorruption campaign. The fluctuations of the daily stock returns between the 25th percentile and the 75th percentile are within the range of -1.5% and 1.5%. In the online supplementary materials, we plot the abnormal returns of the event firms and the synthetic abnormal returns prior to

the anticorruption campaign, the synthetic controls can approximate the event firms fairly well.

Results: Was Xi's Campaign Taken Seriously

First, we report the baseline results from the event study. Figure 1 shows the results from model (1). For the three anticorruption speeches, we plot the two-day cumulative abnormal returns of the event firms, starting from the day when each of the speech was made. For the early crackdowns, we plot the two-day cumulative abnormal returns averaged across all the 16 cases for the event firms, starting from one trading day before the official announcements. Table 2 reports the cumulative abnormal returns with the associated p values from one-day to three-day event windows.

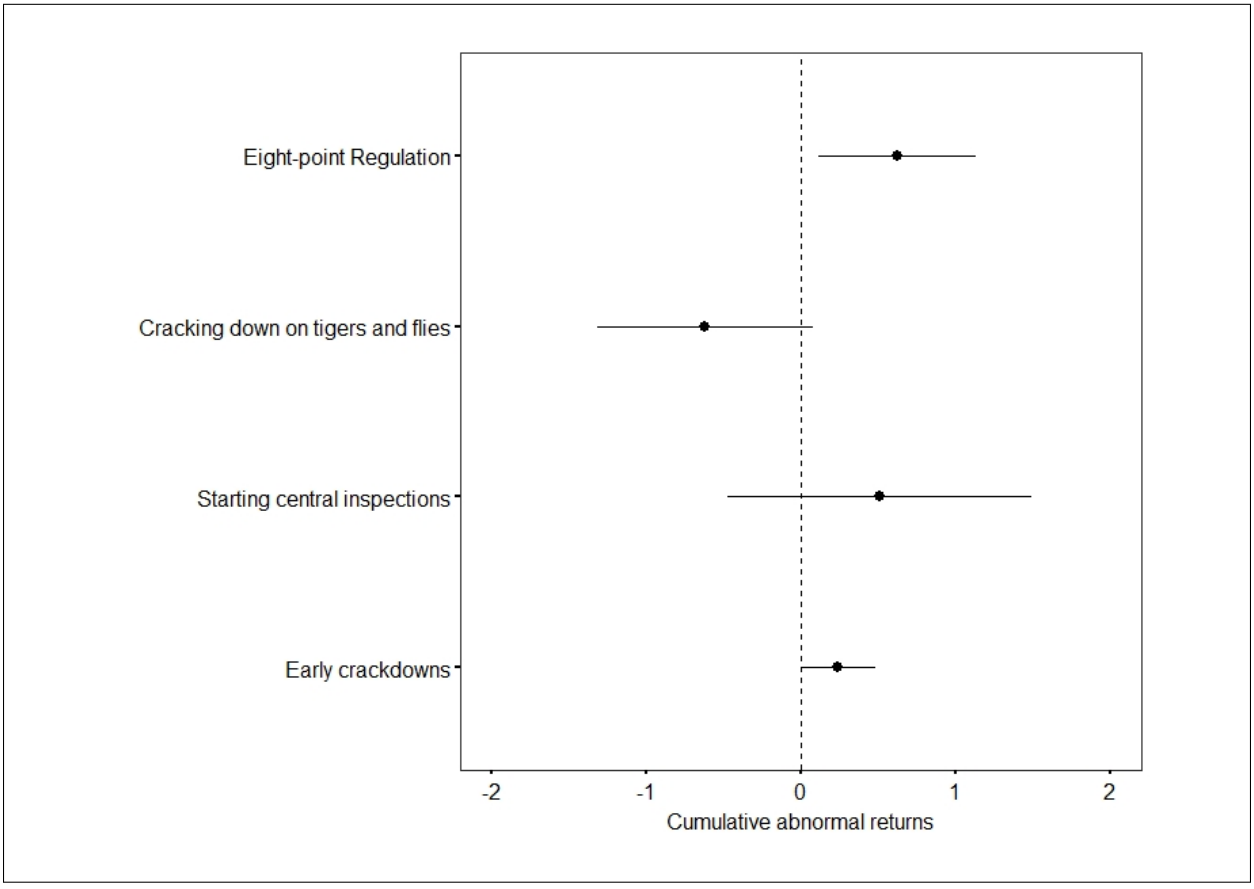


Figure 1. Event Study Results: Anticorruption Events and Stock Returns
The two-day cumulative abnormal returns are plotted from model (1) with the 95% confidence intervals around the point estimates. The cumulative abnormal returns for the early crackdowns are averaged across all the 16 cases. The standard errors are clustered on both firm and date with multiway clustering.

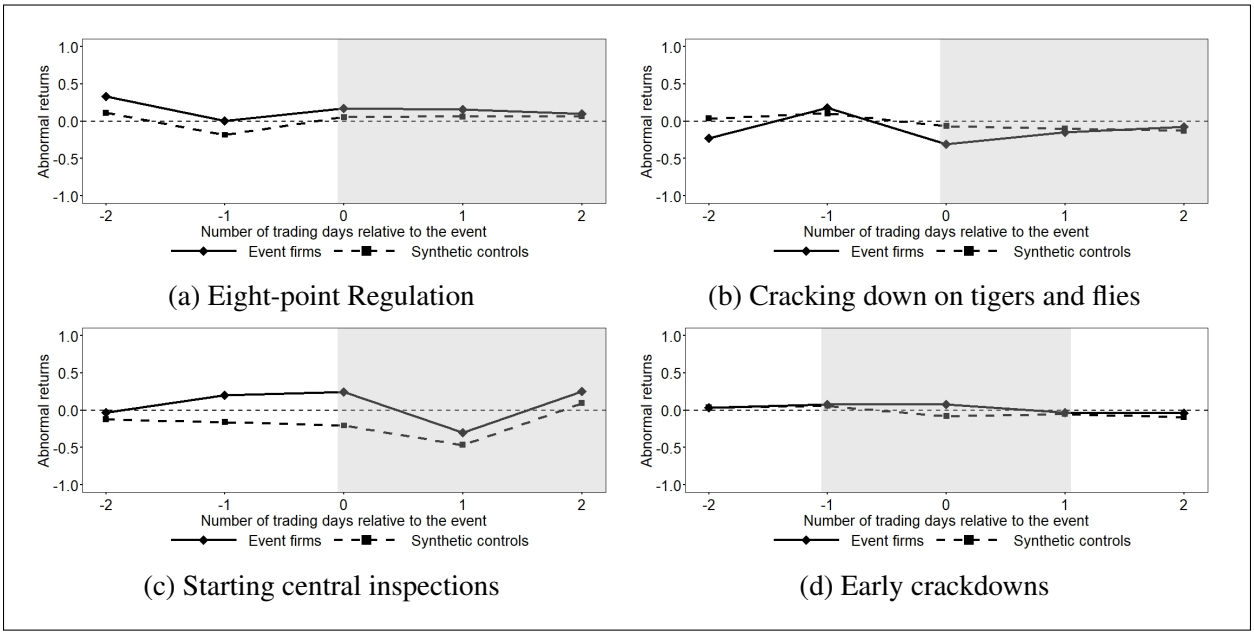
If Xi Jinping's anticorruption campaign was taken seriously, we should find the cumulative abnormal returns to be negative around these events. However, the results show otherwise — except for the speech of "cracking down on both tigers and flies", other anticorruption events did not decrease the stock prices of the event firms. Following the speech of "cracking down on both tigers and flies", the stock prices of the event firms dropped by 0.39, 0.62 and and 0.96 percent in three consecutive trading days, with the associated p values at 0.147, 0.082 and 0.088. On the contrary, the cumulative abnormal returns following the announcement of the "Eight-point Regulation", the starting of central inspections, and the early crackdowns are all positive. In the online supplementary materials, we also plot the day-by-day abnormal returns in a [-2,2] window. We find that no decreases of stock prices are statistically significant at the 95% level, in any of these days.

Table 2. Event Study Results: Cumulative Abnormal Returns With Different Event Windows

	Event windows		
	[0,0]	[0,1]	[0,2]
Eight-point Regulation	0.282	0.625	0.726
p value	(0.047)	(0.016)	(0.015)
Cracking down on tigers and flies	-0.394	-0.615	-0.961
p value	(0.147)	(0.082)	(0.088)
Starting central inspections	0.688	0.511	0.761
p value	(0.061)	(0.309)	(0.169)
	[-1,-1]	[-1,0]	[-1,1]
Early crackdowns	0.071	0.243	0.223
p value	(0.375)	(0.045)	(0.145)

Second, to check whether the baseline results are confounded by other events occurred around the same time, we compare the abnormal returns of the event firms with the synthetic abnormal returns of the control firms. As we have standardized the abnormal returns before the synthetic control estimations, the results should be interpreted as units of standard deviations. The synthetic control estimations confirm the results from the event studies. In Figure 2, on the scale of -1 to 1 unit of standard deviation, we plot the daily abnormal returns (in the solid lines) together with

the synthetic abnormal returns (in the dashed lines). In panel (a), (c) and (d), the patterns are exactly opposite to what they should look like if Xi Jinping's anticorruption campaign was taken as a credible policy effort. Following the announcement of the "Eight-point Regulation", starting central inspections and the early crackdowns, the abnormal returns of the event firms are higher than their synthetic counterparts. Only in panel (b), we find that following the speech of "cracking down on both tigers and flies", the abnormal returns of the event firms were lower than the synthetic abnormal returns in two consecutive trading days.



(a) Eight-point Regulation

(b) Cracking down on tigers and flies

(c) Starting central inspections

(d) Early crackdowns

Figure 2. Abnormal Returns and Synthetic Abnormal Returns Around the Event Dates
Solid lines are daily abnormal returns of the event firms, dashed lines are synthetic abnormal returns of the control firms. The shaded areas are the three-day event window. For each event firm, we estimate its synthetic control separately and aggregate the results using formula (4). The abnormal returns are standardized.

In Table 3, we report the synthetic control effects calculated as the differences between the abnormal returns of the event firms and the synthetic abnormal returns, with the placebo effects at the 5th and 95th percentiles. We report different event windows from one-day to three-day. The table provides information on how the anticorruption events affect the event firms relative to their synthetic counterparts, and whether the effects are significant compared with the placebos.[22] It

[22]In the online supplementary materials, we also plot the day-by-day synthetic control effects with the placebo

shows that in a two-day event window starting from the same day when the speech of "cracking down on both tigers and flies" was made, the stock prices of the event firms dropped by an extra 0.29 unit of standard deviation, compared with the synthetic controls. The effect is around the 5th percentile of the placebos. The synthetic control effects for the other anticorruption events are all positive, with some even above the 95th percentile of the placebos.

Table 3. Synthetic Control Effects With Different Event Windows

	Event windows		
	[0,0]	[0,1]	[0,2]
Eight-point Regulation	0.121	0.219	0.251
Placebo intervals	(-0.156,0.173)	(-0.205,0.230)	(-0.221,0.258)
Cracking down on tigers and flies	-0.243	-0.286	-0.239
Placebo intervals	(-0.222,0.201)	(-0.286,0.279)	(-0.360,0.354)
Starting central inspections	0.448	0.614	0.766
Placebo intervals	(-0.414,0.266)	(-0.563,0.458)	(-0.578,0.528)
	[-1,-1]	[-1,0]	[-1,1]
Early crackdowns	0.018	0.185	0.222
Placebo intervals	(-0.068,0.063)	(-0.083,0.085)	(-0.093,0.092)

Both the event study and synthetic control estimations paint a consistent picture. Although we find some evidence that the stock prices of the event firms dropped following the speech of "cracking down on both tigers and flies", they responded positively to the other anticorruption events. As the event firms would be the most likely cases to be negatively affected if Xi Jinping's anticorruption campaign was taken seriously, the results, however, suggest that most of the signals from Xi Jinping's anticorruption campaign were largely dismissed and even misinterpreted. In sum, Xi Jinping's anticorruption campaign was not taken as a serious anticorruption effort.

effects at the 5% and 95% percentiles.

How the Anticorruption Signals Were Dismissed

Why was Xi Jinping's anticorruption campaign — a sensational and largely genuine effort in fighting corruption — not taken seriously? Although it has long been noted that the politicians' intentions in launching anticorruption campaigns may be driven purely by ulterior political motivations instead of a sincere effort in fighting corruption (Balán, 2011; Gillespie and Okruhlik, 1991; Zhu and Li, 2020; Zhu and Zhang, 2017), the question we need to answer here is why the anticorruption campaign is perceived as insincere. More importantly, why a largely genuine anticorruption effort was dismissed and misinterpreted in the beginning.[23] To answer the question, we argue that two critical features that make anticorruption campaigns work can paradoxically nurture cynicism. We also provide empirical evidence of cynicism. First, Xi Jinping's anticorruption campaign was perceived only as a power struggle. Second, the crackdowns on senior officials, especially those involved in the power struggle, were interpreted as "good news" that the campaign had gone far enough and was about to end.

The Paradox of Anticorruption Campaigns

We argue that the high costs of following through and the repeated campaigns in the past can paradoxically nurture cynicism. First, anticorruption campaigns have to be costly to be effective, but the high costs of following through also make the signals less likely to be perceived as credible (McManus, 2017). To demonstrate this time is different, the regime has to mobilize extra resources in investigations and uses more severe punishments. However, shifting priority and concentrating resources on anticorruption is costly for the regime, as it conflicts with other important policy goals. For example, punishing officials is at odds with the goal of maintaining stability in the bureaucratic system (Cai and Zhu, 2013; Mei and Pearson, 2017) and also changes the incentive structure that relies on acquiescent self-financing behaviors to make bureaucracy work (Ang, 2016). In addition, the increased uncertainty and decreased expected economic returns can even push competent

[23] In the situation where the political leader's intention in launching the anticorruption campaign is largely insincere, the question of how the campaign is perceived is less important, as there will be no policy cost.

young elites away from applying jobs in civil service (Yang, 2020). Furthermore, anticorruption campaigns can harm economic growth by reducing investments (Zheng and Xiao, 2020) and discouraging the entry of new firms (Chen et al., 2019). As a result, the conflicts with other policy areas make it difficult for the regime to follow through with the anticorruption promise.

As McManus (2017) has argued, the credibility of a signal largely depends on the ability of following through: The lower the ability of following through, the less likely the signal will be perceived as credible. Therefore, if the sophisticated investors in the stock market were aware of the costs the regime has to take to follow through with the threats, they would not perceive the anticorruption signals as credible in the first place. On the contrary, they were more likely to perceive the anticorruption campaign as a blow of wind that passes soon. Moreover, although the regime may intend to use the crackdowns on senior official to demonstrate policy resolve, considering the high costs of anticorruption investigations, the high-profile crackdowns could be nonetheless interpreted as a signal that the campaign had gone far enough and may end soon. For example, the crackdown on Zhou Yongkang — the only member in the standing committee of the Politburo investigated since 1949 — was seen by some as a mark that Xi Jinping's campaign would slow down since then (Lam, 2014).

Second, the regime has to launch anticorruption campaigns periodically to maintain the deterrent threat and enforcement credibility, but repeated campaigns can make the society inured to the threats. On the one hand, the positive effects of anticorruption campaigns are often short-term or last for some time at best (Lui, 1986), therefore campaigns need to be launched periodically. On the other hand, anticorruption campaigns need to be uncommon and striking to sow awe and fear (Zhou, 2012). However, if anticorruption campaigns have been repeatedly used, the subsequent campaigns are not uncommon and striking to the society anymore. Therefore, when a new anticorruption campaign is launched, the society may have become immune to it.

How the repeated campaigns affect the perceptions on a new campaign strongly depends on the legacy of the previous campaigns. The anticorruption campaigns in China in the past have failed to establish a credible reputation. They were often big thunders with little rains. Moreover, anecdotal

evidence suggests that the anticorruption campaigns in the party's history were often covers for political purges. Recent examples of suspected politicized investigations include the cases of Bo Xilai, Chen Liangyu and Chen Xitong.[24] With such a reputation, the public may perceive a new anticorruption campaign, even a sincere anticorruption effort, as not different from the previous ones — an empty threat and a power struggle.

This is indeed a paradox of anticorruption campaigns — while both the high costs and repeated uses are required for a genuine anticorruption effort, they are also sources of cynicism. If cynicism is the reason why Xi Jinping's anticorruption campaign was not taken seriously in the beginning, we should observe the following empirical implications. First, the anticorruption campaign was only perceived as s power struggle. Second, the crackdowns on senior officials were perceived as "good news" that the campaign was going to slow down. Next, we introduce a research design that can test these empirical implications.

Research Design: Exploring Variations of Factions

To test the empirical implications of cynicism, we explore the heterogeneous effects on the firms whose connected officials were (or were not) allegedly involved in the power struggle as well as the factional linkages between the connected officials of the firms and the targeted officials in the crackdowns. The claim that considered Xi Jinping's anticorruption campaign as a power struggle mainly refers to the investigations related with Zhou Yongkang and Ling Jihua. They were suspected to be the core members who pulled the trigger in challenging Xi Jinping.[25] We thus code whether the firms' connected officials later investigated and the officials targeted in the

[24]For the case of Bo Xilai, see "Bo Xilai and the dilemma of China's anticorruption campaign", in https://www.cnn.com/2013/09/24/opinion/bo-xilai-china-corruption-yuhua-wang/index.html. For the case of Chen Liangyu, see "Shanghai's Party Leader, Mistrusted by Hu, Is Purged", in https://www.nytimes.com/2006/09/26/world/asia/26china.html. For the case of Chen Xitong, see "Beijing Party 'Decapitated' By President" in https://www.nytimes.com/1995/05/08/world/beijing-party-decapitated-by-president.html.

[25]Zhou Yongkang operated a "petroleum" faction, Ling Jihua formed a secret faction called "Xishan Society" consisting of prominent politicians and businessmen from Shanxi Province. Zhou Yongkang and Ling Jihua were announced to be under investigation on July 29, 2014 and December 22, 2014 respectively.

early crackdowns were in the same faction with Zhou Yongkang or Ling Jihua.[26] Among the 49 event firms, 26 of them are connected with officials in the same faction with Zhou/Ling. Among the 16 cases of early crackdowns, 6 cases are related with Zhou/Ling.

First, if Xi Jinping's anticorruption campaign was only perceived as a power struggle, the anticorruption speeches should only negatively affect the stock prices of the firms whose connected officials are in the same faction with Zhou/Ling, but not the other event firms. Second, considering whether the firms' connected officials and whether the targeted officials in the crackdowns are connected with Zhou/Ling, there are four possible scenarios:

(1) The firm whose connected official later investigated is in the same faction with Zhou Yongkang or Ling Jihua, the official who has already been investigated is connected with Zhou Yongkang or Ling Jihua;

(2) The firm whose connected official later investigated is in the same faction with Zhou Yongkang or Ling Jihua, the official who has already been investigated is not connected with Zhou Yongkang or Ling Jihua;

(3) The firm whose connected official later investigated is not in the same faction with Zhou Yongkang or Ling Jihua, the official who has already been investigated is connected with Zhou Yongkang or Ling Jihua;

(4) The firm whose connected official later investigated is not in the same faction with Zhou Yongkang or Ling Jihua, the official who has already been investigated is not connected with Zhou Yongkang or Ling Jihua;

If Xi's campaign was only perceived as a power struggle, we should observe the stock prices to drop only in scenario (1). In addition, if the crackdowns on senior officials were perceived as signs that the campaign was about to slow down, we should observe the stock prices to increase in scenario (3) and (4), especially in scenario (3) — for the cynical investors, if they perceived Xi's campaign only as a power struggle and they were aware of the high cost the regime had to take to continue the high-profile crackdowns, the investigations on "big tigers" involved in the power

[26]Information on connections are obtained from publicly available sources in China. We also validate the connections with the data from (Wedeman, 2017).

struggle could mean that the campaign had gone far enough and was about to end.

Results: Evidence of Cynicism

We apply the event study in model (1) on the event firms whose connected officials were (and were not) connected with Zhou/Ling. We also split $D_{crackdowns}$ as $D_{Zhou/Ling}$ and $D_{not\ Zhou/Ling}$, with $D_{Zhou/Ling}$ as the investigations on officials in the same faction with Zhou/Ling and $D_{not\ Zhou/Ling}$ as the investigations on officials not in the same faction with Zhou/Ling.[27] We plot the two-day cumulative abnormal returns in Figure 3. In Table 4, we report the cumulative abnormal returns with the associated p values from one-day to three-day event windows.[28]

First, considering the anticorruption speeches, we find that no matter whether the firms were connected with officials in the same faction of Zhou/Ling or not, their stock prices reacted negatively to the speech of "cracking down on both tigers and flies". For the firms with connected officials involved in the power struggle, following the speech of "cracking down on both tigers and flies", their stock prices dropped by 0.68, 0.78 and 0.93 percent in the one-day to three-day event windows, with the associated p values at 0.041, 0.071 and 0.249. The effects on the firms whose connected officials were not involved in the power struggle are also negative across the three event windows, but with all the p values greater than 0.2. The results suggest that this unusually harsh anticorruption speech indeed shocked the investors, but the effects are larger and more significant on the firms with connected officials involved in the power struggle. Following the announcement of starting central inspections, we find that the stock prices dropped only for the firms whose connected officials were in the same faction with Zhou/Ling. The cumulative abnormal returns are -0.09, -0.88 and -0.23 percent in the one-day to three-day event windows, with the associated p values at 0.775, 0.070 and 0.721. However, for those firms whose connected officials were not in the same faction with Zhou/Ling, their stock prices increased by 1.36, 1.71 and 1.63 percent, with the associated p values at 0.021, 0.031 and 0.058. The positive reactions are large and statistically

[27] In the online supplementary materials, we also report the results from individual cases of crackdowns.

[28] In the online supplementary materials, we also plot the day-by-day abnormal returns in a [-2,2] window.

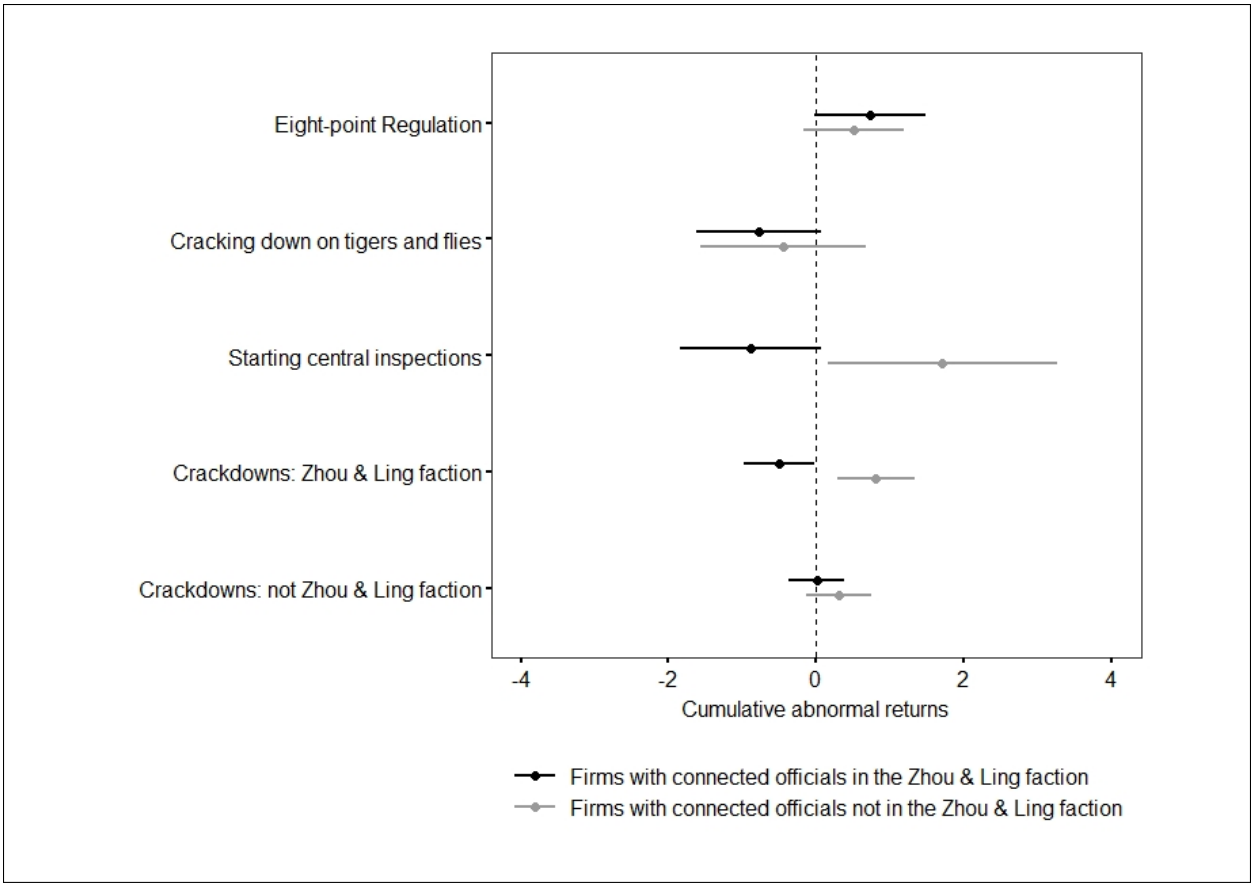


Figure 3. Event Study Results: Evidence of Cynicism
The black points and lines are for firms whose connected officials are in the same faction with Zhou/Ling, the gray points and lines are for those that are not. The two-day cumulative abnormal returns are plotted from model (1) with the 95% confidence intervals around the point estimates. The cumulative abnormal returns for the early crackdowns on officials connected with Zhou/Ling are averaged across all the 6 cases. The cumulative abnormal returns for the early crackdowns on officials not connected with Zhou/Ling are averaged across all the 10 cases. The standard errors are clustered on both firm and date with multiway clustering.

significant around the 95% level. The results suggest that the central inspections were initially seen as selective investigations on Xi Jinping's political enemies. In addition, the results imply that even with the increasing risks of investigations, the investors still bet on firms with political connections, but only on the connections they assumed to be "safer". The fact that these firms' connected officials were later investigated means that the investors got it all wrong — they perceived a genuine anticorruption effort cynically. It is intriguing that following the announcement of the "Eight-point Regulation", the stock prices of the firms with connected officials in and not

in the same faction of Zhou/Ling both increased. We note that the "Eight-point Regulation" itself was a disciplinary regulation aimed to improve the party's work style, it did not mention anticorruption specifically. Our results show that although retrospectively, the disciplinary regulation was the prelude of a large scale anticorruption campaign, the investors obviously did not see it this way at that time.

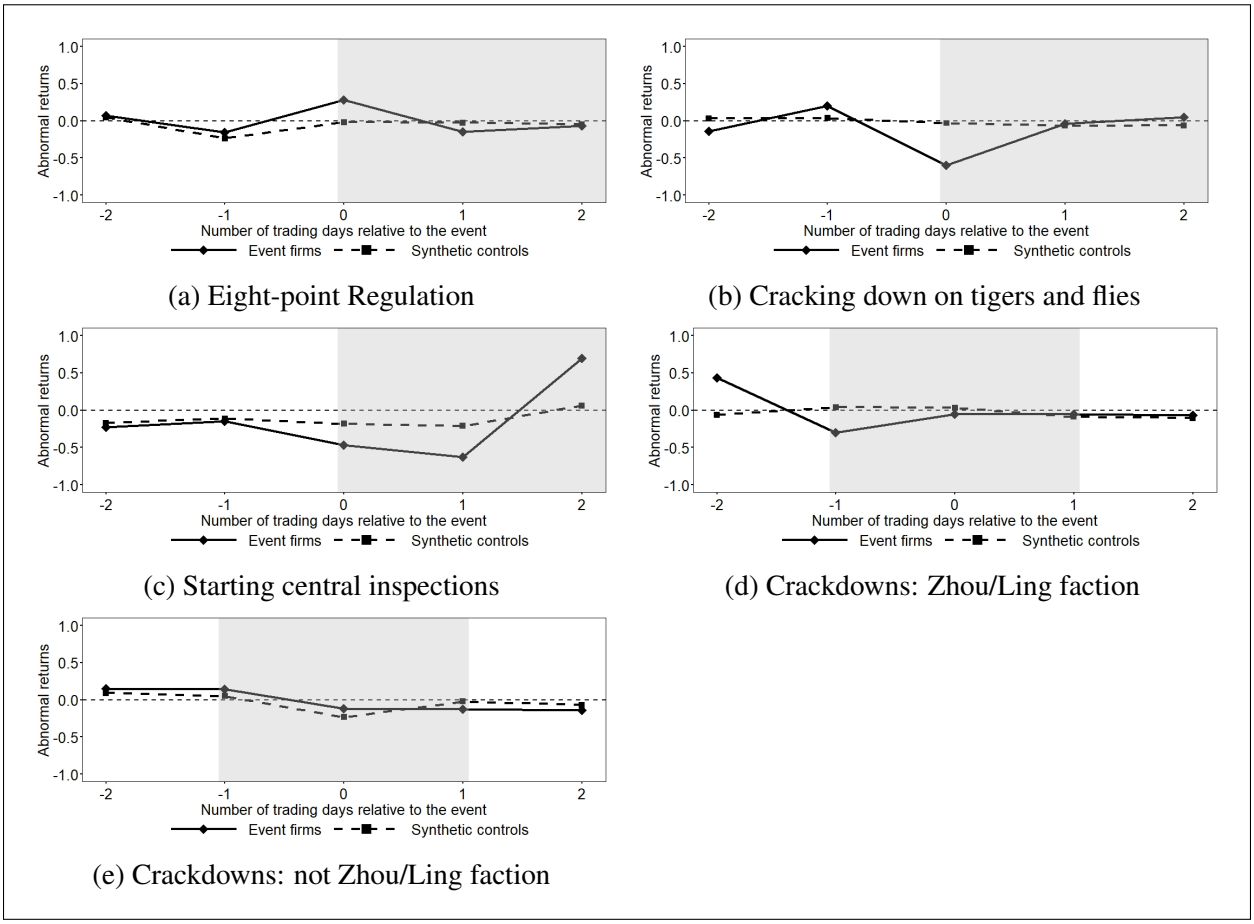
Table 4. Evidence of Cynicism: Event Study Results with Different Event Windows

	Event windows					
	Firms: Zhou/Ling			Firms: not Zhou/Ling		
	[0,0]	[0,1]	[0,2]	[0,0]	[0,1]	[0,2]
Eight-point Regulation	0.506	0.731	0.655	0.036	0.508	0.798
	(0.003)	(0.054)	(0.144)	(0.870)	(0.145)	(0.040)
Cracking down on tigers and flies	-0.675	-0.777	-0.933	-0.087	-0.443	-0.998
	(0.041)	(0.071)	(0.249)	(0.839)	(0.437)	(0.203)
Starting central inspections	-0.092	-0.885	-0.234	1.362	1.713	1.628
	(0.775)	(0.069)	(0.718)	(0.021)	(0.031)	(0.057)
	[-1,-1]	[-1,0]	[-1,1]	[-1,-1]	[-1,0]	[-1,1]
Crackdowns: Zhou & Ling faction	-0.392	-0.502	-0.516	0.180	0.807	0.925
	(0.025)	(0.042)	(0.100)	(0.281)	(0.002)	(0.007)
Crackdowns: not Zhou & Ling faction	0.109	0.008	-0.067	0.198	0.314	0.203
	(0.371)	(0.965)	(0.776)	(0.214)	(0.159)	(0.452)

Second, in terms of the crackdowns on senior officials, the results provide strong evidence of cynicism. On the one hand, we find that only when the firms' connected officials and the officials already investigated were both in the same faction of Zhou/Ling, the stock prices of the firms dropped. In this scenario, the stock prices dropped by 0.39, 0.50 and 0.52 percent, with the associated p values at 0.025, 0.042 and 0.100, starting from one day before the official announcements. We find no similar pattern in the other scenarios, which suggests that Xi Jinping's anticorruption campaign was only perceived as a power struggle. On the other hand, we find that for the firms whose connected officials were not in the same faction or Zhou/Ling, their stock prices increased following the crackdowns. The results are especially large and strong following the crackdowns related with the power struggle. In that situation, the stock prices increased by 0.18, 0.81 and 0.93

percent, with the associated p values at 0.281, 0.002 and 0.007. The results suggest that instead of perceiving the crackdowns on senior officials as signals of the political leader's resolve in fighting corruption, the investors interpreted them as "good news" that the campaign was about to slow down.

To check whether the results from the event study are confounded by other common shocks, in Figure 5 and Figure 6, on the scale of -1 to 1 unit of standard deviation, we plot the abnormal returns and the synthetic abnormal returns around the event dates, for firms with connected officials in and not in the same faction of Zhou/Ling respectively.



(a) Eight-point Regulation

(b) Cracking down on tigers and flies

(c) Starting central inspections

(d) Crackdowns: Zhou/Ling faction

(e) Crackdowns: not Zhou/Ling faction

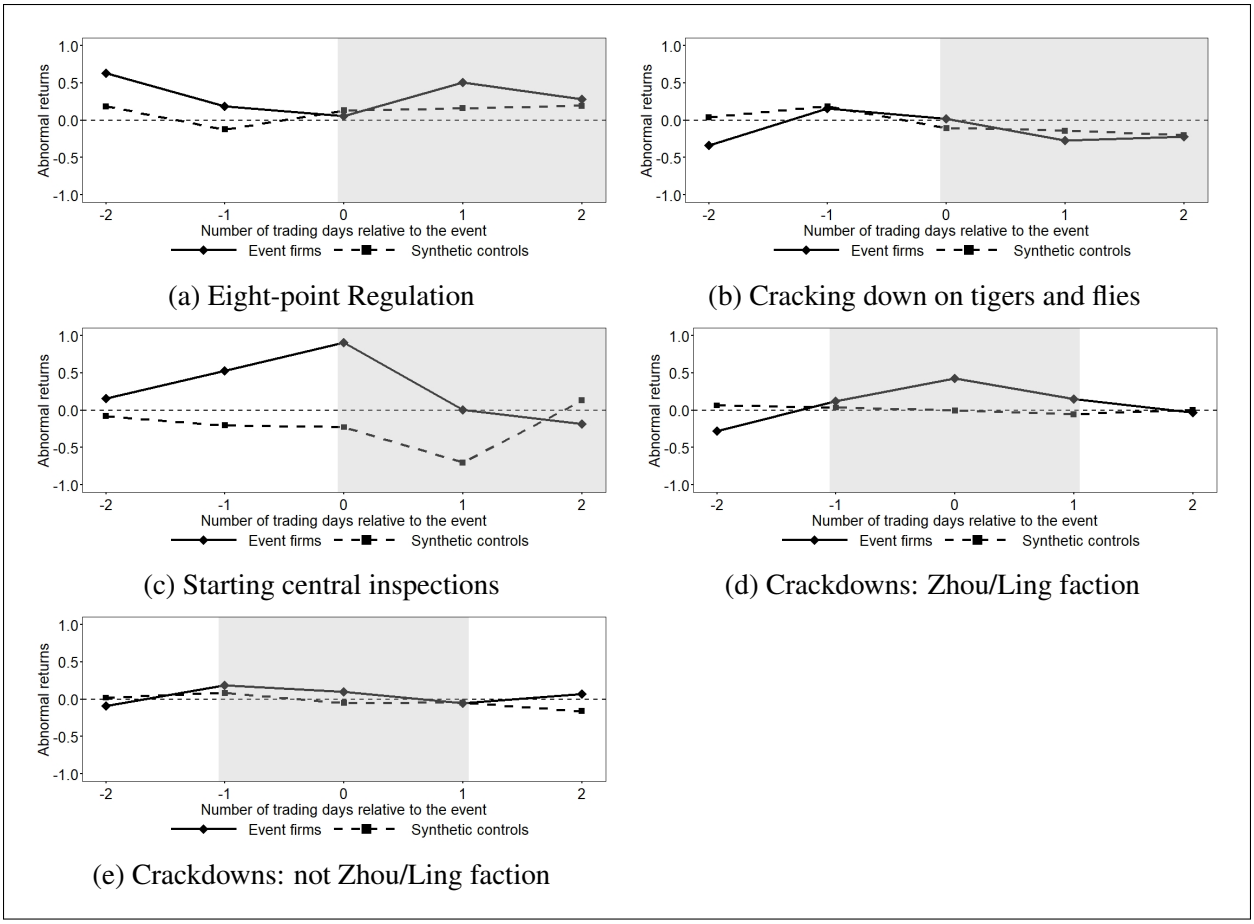
Figure 5. Abnormal Returns and Synthetic Abnormal Returns Around the Event Dates: Firms With Connected Officials Related With Zhou/Ling

Solid lines are daily abnormal returns of the event firms, dashed lines are synthetic abnormal returns of the control firms. The shaded areas are the three-day event window. For each event firm, we estimate its synthetic control separately and aggregate the results using formula (4). The abnormal returns are standardized.

First, we focus on the firms with connected officials in the same faction of Zhou/Ling in Figure 5. The synthetic controls in the dashed lines show that the results we find in the event study are not driven by other synchronizing common shock. In panel (b), (c) and (d), where we find the stock prices of the event firms reacted negatively to the anticorruption events, their synthetic counterparts are all very close to 0, which means that the negative stock reactions were a particular phenomenon for the firms whose connected officials were allegedly involved in the power struggle, not driven by the common shocks that could affect the firms in the same industry with the same type of ownership. In panel (e) where the stock prices were not supposed to be affected if Xi Jinping's anticorruption campaign was perceived only as a power struggle, we find that the abnormal returns largely overlap with the synthetic abnormal returns.

Second, we focus on the firms with connected officials not in the same faction of Zhou/Ling in Figure 6. Again, the synthetic controls in the dashed lines show that the results we find in the event study are not driven by other simultaneous common shocks. In panel (d) where we find the stock prices increased when the crackdowns were on officials related with Zhou/Ling, the synthetic abnormal returns from firms in the same industry with the same type of ownership did not follow the same pattern. In panel (e), when the crackdowns were on official not related with Zhou/Ling, we find that although the abnormal returns are still above the synthetic controls, the differences are smaller. In panel (b), we find that the abnormal returns are close to their synthetic counterparts, which means that the speech of "cracking down on both tigers and flies" did not particularly decrease the stock prices of the firms whose connected officials were not involved in the power struggle. In panel (c) with the announcement of starting central inspections, the negative synthetic abnormal returns means that for the firms whose connected officials were not involved in the power struggle, while their similar synthetic firms were negatively affected in the stock market, they saw an increase in their stock prices. It seems that as long as the connections were in the right political side, high-level political connections were seen as protections rather than liabilities in times with increasing risks of anticorruption investigations.

Finally, in Table 5, we report the synthetic control effects with different event windows and



(a) Eight-point Regulation

(b) Cracking down on tigers and flies

(c) Starting central inspections

(d) Crackdowns: Zhou/Ling faction

(e) Crackdowns: not Zhou/Ling faction

Figure 6. Abnormal Returns and Synthetic Abnormal Returns Around the Event Dates: Firms With Connected Officials Not Related With Zhou/Ling

Solid lines are daily abnormal returns of the event firms, dashed lines are synthetic abnormal returns of the control firms. The shaded areas are the three-day event window. For each event firm, we estimate its synthetic control separately and aggregate the results using formula (4). The abnormal returns are standardized.

the intervals at the 5% and 95% percentiles of the placebo effects. Table 5 helps us test whether the results we find are significant, compared with the placebos. For firms with connected officials related with Zhou/Ling, the synthetic control effects of "cracking down tigers and flies" and the investigations on officials related with Zhou/Ling are both below the 5% percentile of the placebos, in all the event windows. For firms with connected officials not related with Zhou/Ling, the synthetic control effects of the announcement on starting central inspections and the crackdowns on officials not related with Zhou/Ling are both above the 95% percentile of the placebos, in all the event windows. The probability that these patterns happen by chance is low.

Table 5. Evidence of Cynicism: Synthetic Control Results with Different Event Windows

	Event windows					
	Firms: Zhou/Ling			Firms: not Zhou/Ling		
	[0,0]	[0,1]	[0,2]	[0,0]	[0,1]	[0,2]
Eight-point Regulation	0.297	0.175	0.157	-0.075	0.269	0.356
Placebo intervals	(-0.234,0.241)	(-0.307,0.317)	(-0.347,0.375)	(-0.233,0.254)	(-0.306,0.321)	(-0.323,0.376)
Cracking down on tigers and flies	-0.570	-0.538	-0.430	0.127	-0.002	-0.022
Placebo intervals	(-0.318,0.314)	(-0.419,0.385)	(-0.524,0.525)	(-0.328,0.310)	(-0.394,0.422)	(-0.500,0.541)
Starting central inspections	-0.285	-0.700	-0.069	1.134	1.842	1.545
Placebo intervals	(-0.428,0.365)	(-0.957,0.640)	(-0.995,0.710)	(-0.510,0.377)	(-0.880,0.600)	(-0.943,0.679)
	[-1,-1]	[-1,0]	[-1,1]	[-1,-1]	[-1,0]	[-1,1]
Crackdowns: Zhou/Ling	-0.302	-0.382	-0.341	0.082	0.492	0.687
Placebo intervals	(-0.153,0.150)	(-0.225,0.224)	(-0.254,0.264)	(-0.141,0.140)	(-0.210,0.216)	(-0.262,0.270)
Crackdowns: not Zhou/Ling	0.080	0.206	0.120	0.101	0.245	0.240
Placebo intervals	(-0.110,0.122)	(-0.151,0.150)	(-0.159,0.165)	(-0.109,0.116)	(-0.143,0.150)	(-0.158,0.161)

In sum, we empirically find evidence of cynicism, as the reason behind why Xi Jinping's anticorruption campaign was not taken seriously. The campaign was initially only perceived as a power struggle. In addition, the crackdowns on senior officials, especially those connected with Zhou/Ling, were not perceived as signals of resolve, but as signs that the campaign was about to slow down. By comparing with the synthetic controls, we also provide robustness checks that these are unique patterns for the event firms whose connected officials were later investigated.

Conclusion

In this paper, we study the campaign-style enforcement from a previously less noticed perspective — how the campaign is perceived. Although it seems straightforward that signals from dramatic events like campaigns should easily be received and taken seriously, we find that Xi Jinping's anticorruption campaign — a sensational and largely genuine anticorruption effort — was not initially taken seriously by the investors in China's stock market. To explain why the investors who are supposed to be sensitive to changes of political events got the signals wrong, we argue

that the high costs of following through and the repeated campaigns in the past paradoxically nurtured cynicism. Specifically, we find that Xi Jinping's anticorruption campaign was initially perceived only as a power struggle and the crackdowns on senior officials were misinterpreted as signs that the campaign had gone far enough and was about to slow down. The misperceptions make campaigns less effective in deterring corruption and restoring credibility, even in the short-term.

Although in this paper, we only have the case of Xi Jinping's anticorruption campaign, our paper has broader theoretical and practical implications. Theoretically, the existing studies about the campaign-style enforcement in China have not developed satisfactory explanations on why campaigns are effective sometimes but not others. For campaigns in all policy areas, the costs of following through and the frequency the campaign has been used could be important factors in affecting their effectiveness. First, when the targeted policy areas are in conflict with other policy areas, the regular enforcement is likely to fail and campaigns are needed. For example, in addition to anticorruption, the CCP has frequently resorted to campaigns in the environmental regulations in recent years, because the conflict between environmental protection and economic development often makes the routine environmental regulations ineffective. However, when the priority and resources are shifted to the targeted policy areas, the regime has to bear the costs that other important policy goals are set aside. When the tensions are more intense, the costs of following through are higher and thus the campaigns are less likely to be perceived as credible. In this sense, campaigns could be least effective in the policy areas where they are mostly needed. Second, the campaign that has never been used before is most likely to be effective. For example, this could explain why the anticorruption campaign in China in the 1950s was more effective than those since the 1980s — it was the first anticorruption campaign in the party's history. In the reform era, the party still prefers resorting to campaigns for quick solutions than spending time to strengthen the formal institutions. However, as our paper implies, the public could get inured and even cynical if the campaign has been repeatedly used.

Our paper also has important practical implications for all developing countries. Campaign-

style enforcement is the "poor man's alternative to effective policing" (Wedeman, 2005). Not all countries have the immediate capacity to invest in formal institutions, but some policy problems require urgent responses. In such a delicate situation, campaigns — as problematic as they are — may be the only solution. However, as our paper implies, the regime may want to be careful on how to deliver the signals. On the one hand, the signals need to be costly enough to shift the perceived policy priority and demonstrate determinations in achieving success. On the other hand, if the signals are too dramatic, they may end up not being perceived as credible. In addition, while political leaders in these countries can often wield their power to launch a campaign whenever they want, they may want to be cautious not to abuse it here, if they still care about the effectiveness of their campaigns at all.

References

Abadie, A. (2019). Using synthetic controls: Feasibility, data requirements, and methodological aspects. *Journal of Economic Literature*.

Abadie, A., Diamond, A., and Hainmueller, J. (2010). Synthetic control methods for comparative case studies: Estimating the effect of california's tobacco control program. *Journal of the American statistical Association*, 105(490):493–505.

Abadie, A., Diamond, A., and Hainmueller, J. (2015). Comparative politics and the synthetic control method. *American Journal of Political Science*, 59(2):495–510.

Abadie, A. and Gardeazabal, J. (2003). The economic costs of conflict: A case study of the basque country. *American economic review*, 93(1):113–132.

Acemoglu, D., Hassan, T. A., and Tahoun, A. (2018). The power of the street: Evidence from egypt's arab spring. *The Review of Financial Studies*, 31(1):1–42.

Acemoglu, D., Johnson, S., Kermani, A., Kwak, J., and Mitton, T. (2016). The value of connections in turbulent times: Evidence from the united states. *Journal of Financial Economics*, 121(2):368–391.

Ang, Y. Y. (2016). *How China escaped the poverty trap*. Cornell University Press.

Balán, M. (2011). Competition by denunciation: the political dynamics of corruption scandals in argentina and chile. *Comparative Politics*, 43(4):459–478.

Benton, A. L. and Philips, A. Q. (2020). Does the@ realdonaldtrump really matter to financial markets? *American Journal of Political Science*, 64(1):169–190.

Biddulph, S., Cooney, S., and Zhu, Y. (2012). Rule of law with chinese characteristics: The role of campaigns in lawmaking. *Law & Policy*, 34(4):373–401.

Binder, J. J. (1985). On the use of the multivariate regression model in event studies. *Journal of Accounting Research*, pages 370–383.

Brown, K. (2018). The anti-corruption struggle in xi jinping's china: an alternative political narrative. *Asian Affairs*, 49(1):1–10.

Cai, Y. and Zhu, L. (2013). Disciplining local officials in china: the case of conflict management.

The China Journal, (70):98–119.

Cameron, A. C., Gelbach, J. B., and Miller, D. L. (2012). Robust inference with multiway clustering. *Journal of Business & Economic Statistics*.

Campbell, J. Y., Champbell, J. J., Campbell, J. W., Lo, A. W., Lo, A. W., and MacKinlay, A. C. (1997). *The econometrics of financial markets*. princeton University press.

Chen, T. and Kung, J. K.-s. (2019). Busting the "princelings": The campaign against corruption in china's primary land market. *The Quarterly Journal of Economics*, 134(1):185–226.

Chen, Z., Jin, X., and Xu, X. (2019). Is cracking down on corruption really good for the economy? firm-level evidence from a natural experiment in china.

Dimitrov, M. (2009). *Piracy and the state: The politics of intellectual property rights in China*. Cambridge University Press.

Doudchenko, N. and Imbens, G. W. (2016). Balancing, regression, difference-in-differences and synthetic control methods: A synthesis. Technical report, National Bureau of Economic Research.

Dube, A., Kaplan, E., and Naidu, S. (2011). Coups, corporations, and classified information. *The Quarterly journal of economics*, 126(3):1375–1409.

Fama, E. F. (1991). Efficient capital markets: Ii. *The journal of finance*, 46(5):1575–1617.

Fisman, R. (2001). Estimating the value of political connections. *American economic review*, 91(4):1095–1102.

Gillespie, K. and Okruhlik, G. (1991). The political dimensions of corruption cleanups: A framework for analysis. *Comparative Politics*, 24(1):77–95.

Hsiao, C., Steve Ching, H., and Ki Wan, S. (2012). A panel data approach for program evaluation: measuring the benefits of political and economic integration of hong kong with mainland china. *Journal of Applied Econometrics*, 27(5):705–740.

Jensen, N. M. and Schmith, S. (2005). Market responses to politics: The rise of lula and the decline of the brazilian stock market. *Comparative Political Studies*, 38(10):1245–1270.

Jervis, R. (1982). Deterrence and perception. *International security*, 7(3):3–30.

Jowitt, K. (1974). An organizational approach to the study of political culture in marxist-leninist systems. *The American Political Science Review*, 68(3):1171–1191.

Kang, S. and Zhu, J. (2020). Do people trust the government more? unpacking the distinct impacts of anticorruption policies on political trust. *Political Research Quarterly*, page 1065912920912016.

Kautz, C. (2020). Power struggle or strengthening the party: Perspectives on xi jinping's anticorruption campaign. *Journal of Chinese Political Science*, pages 1–11.

Keliher, M. and Wu, H. (2016). Corruption, anticorruption, and the transformation of political culture in contemporary china. *The Journal of Asian Studies*, pages 5–18.

Kleiman, M. A. (1993). Enforcement swamping: A positive-feedback mechanism in rates of illicit activity. *Mathematical and computer modelling*, 17(2):65–75.

Lam, W. W.-L. (2014). A last hurrah? zhou's arrest may mark slowing of china's anti-corruption efforts. *Global Asia*, 9(3):66–68.

Li, H. and Meng, T. (2020). Corruption experience and public perceptions of anti-corruption crackdowns: Experimental evidence from china. *Jouranl of Chinese Political Science*.

Li, K. T. (2019a). Statistical inference for average treatment effects estimated by synthetic control methods. *Journal of the American Statistical Association*, pages 1–16.

Li, L. (2001). Support for anti-corruption campaigns in rural china. *Journal of Contemporary China*, 10(29):573–586.

Li, L. (2019b). Politics of anticorruption in china: Paradigm change of the party's disciplinary regime 2012–2017. *Journal of Contemporary China*, 28(115):47–63.

Lieberthal, K. (1995). *Governing China: From revolution through reform*. WW Norton.

Liou, Y.-M. and Musgrave, P. (2014). Refining the oil curse: Country-level evidence from exogenous variations in resource income. *Comparative Political Studies*, 47(11):1584–1610.

Liu, J. and Ying, Q. (2019). The decreasing value of non-soes' political connections during china's anti-corruption campaign: evidence and mechanism. *Accounting & Finance*.

Liu, N. N., Lo, C. W.-H., Zhan, X., and Wang, W. (2015). Campaign-style enforcement and

regulatory compliance. *Public Administration Review*, 75(1):85–95.

Looney, K. E. (2015). China's campaign to build a new socialist countryside: village modernization, peasant councils, and the ganzhou model of rural development. *The China Quarterly*, 224:909–932.

Lu, X. and Lorentzen, P. (2016). Rescuing autocracy from itself: China's anti-corruption campaign.

Lui, F. T. (1986). A dynamic model of corruption deterrence. *Journal of public Economics*, 31(2):215–236.

MacKinlay, A. C. (1997). Event studies in economics and finance. *Journal of economic literature*, 35(1):13–39.

Malkiel, B. G. and Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *The journal of Finance*, 25(2):383–417.

Manion, M. (2004). *Corruption by design*. Harvard University Press.

Manion, M. (2016). Taking china's anticorruption campaign seriously. *Economic and Political Studies*, 4(1):3–18.

McManus, R. W. (2017). *Statements of Resolve: Achieving Coercive Credibility in International Conflict*. Cambridge University Press.

Mei, C. and Pearson, M. M. (2017). The dilemma of "managing for results" in china: Won't let go. *Public Administration and Development*, 37(3):203–216.

Morris, S. D. and Klesner, J. L. (2010). Corruption and trust: Theoretical considerations and evidence from mexico. *Comparative Political Studies*, 43(10):1258–1285.

O'Brien, K. J. and Li, L. (1999). Campaign nostalgia in the chinese countryside. *Asian Survey*, 39(3):375–393.

Paternoster, R. (1987). The deterrent effect of the perceived certainty and severity of punishment: A review of the evidence and issues. *Justice Quarterly*, 4(2):173–217.

Perry, E. J. (2011). From mass campaigns to managed campaigns:'constructing a new socialist countryside'. *Mao's invisible hand: The political foundations of adaptive governance in China*, pages 30–61.

Perry, E. J. and Heilmann, S. (2011). Embracing uncertainty: Guerrilla policy style and adaptive governance in china.

Persson, A., Rothstein, B., and Teorell, J. (2013). Why anticorruption reforms fail—systemic corruption as a collective action problem. *Governance*, 26(3):449–471.

Qian, N. and Wen, J. (2015). The impact of xi jinping's anti-corruption campaign on luxury imports in china.

Rothstein, B. (2011). Anti-corruption: the indirect 'big bang'approach. *Review of International Political Economy*, 18(2):228–250.

Rundmo, T. and Iversen, H. (2004). Risk perception and driving behaviour among adolescents in two norwegian counties before and after a traffic safety campaign. *Safety science*, 42(1):1–21.

Schipper, K. and Thompson, R. (1983). The impact of merger-related regulations on the shareholders of acquiring firms. *Journal of Accounting research*, pages 184–221.

Spence, J. D. (1990). *The search for modern China*. WW Norton & Company.

Sun, X. (2020). Campaign-style implementation and affordable housing provision in china. *The China Journal*, 84(1):000–000.

Tay, R. (2005). The effectiveness of enforcement and publicity campaigns on serious crashes involving young male drivers: Are drink driving and speeding similar? *Accident Analysis & Prevention*, 37(5):922–929.

Tsai, L. L. (2017). Bringing in china: Insights for building comparative political theory. *Comparative Political Studies*, 50(3):295–328.

Van der Kamp, D. S. (2020). Blunt force regulation and bureaucratic control: Understanding china's war on pollution. *Governance*.

Van Rooij, B. (2006). *Regulating land and pollution in China: lawmaking, compliance, and enforcement: theory and cases*. Amsterdam University Press.

Var der Kamp, D. S. (2019). Can'police patrols' prevent pollution? the limits of authoritarian environmental governance in china. *Journal of Comparative Politics*.

Wang, P. (2020). Politics of crime control: how campaign-style law enforcement sustains authori-

tarian rule in china. *The British Journal of Criminology*, 60(2):422–443.

Wang, Y. and Dickson, B. (2019). How corruption investigations undermine regime support: Evidence from china. *Available at SSRN 3086286*.

Wang, Z. (2018). Campaigns in politics: From revolution to problem solving. In Wu, W. and Frazier, M., editors, *Sage Handbook of Contemporary China*, chapter 15, pages 324–339. SAGE Publications Ltd, London.

Watson, S. and Arunachalam, R. (2018). Firms and social protection: An event study. *Comparative Political Studies*, 51(14):1974–2021.

Wedeman, A. (2005). Anticorruption campaigns and the intensification of corruption in china. *Journal of Contemporary China*, 14(42):93–116.

Wedeman, A. (2017). Xi jinping's tiger hunt: Anti-corruption campaign or factional purge? *Modern China Studies*, 24(2).

White, T. (1990). Postrevolutionary mobilization in china: The one-child policy reconsidered. *World Politics: A Quarterly Journal of International Relations*, pages 53–76.

Williams, K. R. and Hawkins, R. (1986). Perceptual research on general deterrence: A critical review. *Law and Society Review*, pages 545–572.

Xu, Y. (2017). Generalized synthetic control method: Causal inference with interactive fixed effects models. *Political Analysis*, 25(1):57–76.

Yang, W. (2020). Corruption monitoring and the supply of politicians in china. *Governance*.

Zeng, Q. (2020). Managed campaign and bureaucratic institutions in china: Evidence from the targeted poverty alleviation program. *Journal of Contemporary China*, 29(123):400–415.

Zheng, B. and Xiao, J. (2020). Corruption and investment: Theory and evidence from china. *Journal of Economic Behavior & Organization*, 175:40–54.

Zhou, X. (2012). Mechanisms of campaign-style governance [in chinese]. *Open Times*, 9:105–125.

Zhu, J. and Li, H. (2020). Elite power competition and corruption investigation in china: A case study. *Modern China*, 46(3):307–335.

Zhu, J. and Zhang, D. (2017). Weapons of the powerful: authoritarian elite competition and

politicized anticorruption in china. *Comparative political studies*, 50(9):1186–1220.

Appendix

Table A.1 Key Anticorruption Speeches Between December 2012 and May 2013

Date	Event	Content
December 4, 2012	Xi Jinping annoucned the "Eight-point Regulation" in the Politburo meeting	The members of the Politburo should maintain close contact with the mass; reduce meetings, documents, visits, media reports and personal publications; reform the security system and reduce traffic control; practice thrift.
January 22, 2013	Plenary session of the central commission for discipline inspection	Xi Jinping made a speech about anti-corruption and in the speech, he mentioned to "crack down on both tigers and flies" for the first time.
May 17, 2013	Wang Qishan, the party secretary of the central commission for discipline inspection, made a speech at the mobilization meeting to start the central inspections	10 sites for the first round of central inspection were announced.

Table A.2 Crackdowns on Senior Officials Between May 2013 and December 2013

Date	Case	Position	Factional link
May 12, 2013	Liu Tienan	Director National Energy Administration, former Deputy Director National Development and Reform Commission	Ling Jihua
June 4, 2013	Ni Fake	Vice Governor of Anhui	
June 22, 2013	Guo Yongxiang	President of Sichuan Federation of Literary and Arts, former Vice Governor of Sichuan	Zhou Yongkang
June 30, 2013	Wang Suyi	Director of Inner Mongolia United Works Department, member of the Standing Committee of the Inner Mongolia Regional Party Committee	
July 6, 2013	Li Daqiu	Vice Chairman of the Guangxi CPPCC, Chair of Guangxi Federation of Trade Unions	
August 26, 2013	Wang Yongchun	Deputy General Manager of Chinese National Petroleum Corp.	Zhou Yongkang
September 1, 2013	Jiang Jiemin	Chairman of State-owned Assets Supervision and Administration Committee, former Chairman of China National Petroleum Corp.	Zhou Yongkang
October 17, 2013	Ji Jianye	Mayor of Nanjing	
October 28, 2013	Liao Shaohua	Party Secretary of Zunyi City, Guizhou	
November 19, 2013	Chen Baikui	Vice Chairman of Hubei CPPCC	
November 27, 2013	Guo Youming	Vice Governor of Hubei	
December 8, 2013	Chen Anzhong	Vice Chairman of Jiangxi Provincial People's Congress, Deputy Director of the Jiangxi Provincial People's Congress	
December 18, 2013	Tong Mingqian	Vice Chairman of Hunan CPPCC	
December 20, 2013	Li Dongsheng	Vice Minister for Public Security	Zhou Yongkang
December 27, 2013	Yang Gang	Deputy Director of CPPCC Committee for Economic Affairs, former Vice Chairman of Xinjiang Regional Government	
December 29, 2013	Li Chongxi	Chairman of Sichuan CPPCC	Zhou Yongkang

Table A.3 Information on Event Firms

Firm name	Connected official	Date of investigation	Faction
China Vanke Co., Ltd.	Li Chuncheng	2012-12-05	Zhou Yongkang
Aluminum Corporation of China Limited	Liu Tienan	2013-05-12	Ling Jihua
Yanbian Shixian Bailu Papermaking Co., Ltd.	Liu Tienan	2013-05-12	Ling Jihua
Hengyi Petrochemical Co., Ltd.	Liu Tienan	2013-05-12	Ling Jihua
Shandong Nanshan Aluminium Co., Ltd.	Liu Tienan	2013-05-12	Ling Jihua
Suning Universal Co., Ltd.	Liu Tienan	2013-05-12	Ling Jihua
Heilongjiang Interchina Watertreatment Co., Ltd.	Liu Tienan	2013-05-12	Ling Jihua
Changjiang Jinggong Steel Building (Group) Co., Ltd.	Ni Fake	2013-06-04	
Sichuan Jinlu Group Co., Ltd.	Guo Yongxiang	2013-06-22	Zhou Yongkang
Nuode Investment Co.,ltd.	Wang Yongchun	2013-08-26	Zhou Yongkang
Suzhou Gold Mantis Construction and Decoration Co.ltd.	Ji Jianye	2013-10-17	
Sichuan Hongda Co., Ltd.	Li Chongxi	2013-12-29	Zhou Yongkang
Fangda Jinhua Chemical Technology Co., Ltd.	Ji Wenlin	2014-02-18	Zhou Yongkang
Fangda Carbon New Material Co.,ltd	Ji Wenlin	2014-02-18	Zhou Yongkang
Fangda Special Steel Technology Co., Ltd.	Ji Wenlin	2014-02-18	Zhou Yongkang
Shanxi Lanhua Sci-Tech Venture Co., Ltd.	Jin Daoming	2014-02-27	Ling Jihua
Yunnan Copper Co., Ltd.	Shen Peiping	2014-03-09	Zhou Yongkang
Jiangxi Hongcheng Waterworks Co., Ltd.	Yao Mugen	2014-03-22	
Yunnan Luoping Zinc and Electricity Co., Ltd.	Yao Mugen	2014-03-22	
Jiangxi Lianchuang Optoelectronic Science and Technology Co., Ltd.	Yao Mugen	2014-03-22	
Xiandai Investment Co., Ltd.	Yang Baohua	2014-05-26	
Kangmei Pharmaceutical Co., Ltd.	Wan Qingliang	2014-06-27	
Yihua Lifestyle Technology Co., Ltd.	Wan Qingliang	2014-06-27	
Shen Zhen Globe Union Industrial Corp.	Wan Qingliang	2014-06-27	
Zhejiang Guangsha Co., Ltd.	Ling Jihua	2014-12-22	Ling Jihua
China Minsheng Banking Corp.,ltd.	Ling Jihua	2014-12-22	Ling Jihua
Founder Technology Group Corp.	Ma Jian	2015-01-16	Zhou Yongkang
Pku Healthcare Corp., Ltd.	Ma Jian	2015-01-16	Zhou Yongkang
Guangxi Wuzhou Zhongheng Group Co., Ltd.	Yu Yuanhui	2015-05-22	Ling Jihua
Zoomlion Heavy Industry Science and Technology Co., Ltd.	Zhou Benshun	2015-07-24	Zhou Yongkang
China Calxon Group Co., Ltd.	Zhou Benshun	2015-07-24	Zhou Yongkang
Financial Street Holding Co., Ltd.	Lv Xiwen	2015-11-11	
China Coal Energy Company Limited	Liu Zhigeng	2016-02-04	
Gemdale Corporation.	Liu Zhigeng	2016-02-04	
Shenzhen Agricultural Products Co., Ltd.	Liu Zhigeng	2016-02-04	
Shanghai Pudong Development Bank Co., Ltd.	Liu Zhigeng	2016-02-04	
Guangdong Golden Dragon Development Inc.	Liu Zhigeng	2016-02-04	
Hengli Petrochemical Co.,ltd.	Wang Min	2016-03-04	
Baida Group Co., Ltd.	Lu Ziyue	2016-03-16	Ling Jihua
Nanjing Central Emporium (Group) Stocks Co., Ltd.	Li Yunfeng	2016-05-30	
Hunan Haili Chemical Industry Co., Ltd.	Zhang Wenxiong	2016-11-08	
Wuhu Conch Profiles and Science Company Limited	Chen Shulong	2016-11-08	
Anhui Conch Cement Company Limited	Chen Shulong	2016-11-08	
Sanan Optoelectronics Co., Ltd.	Chen Shulong	2016-11-08	
Elec-Tech International Co., Ltd.	Chen Shulong	2016-11-08	
Xi'an Tourism Co., Ltd.	Wei Minzhou	2017-05-22	Ling Jihua
Xi'an Catering Co., Ltd.	Wei Minzhou	2017-05-22	Ling Jihua
Ginwa Enterprise(Group) Inc.	Wei Minzhou	2017-05-22	Ling Jihua
Greattown Holdings Ltd.	Wang Sanyun	2017-07-11	

Table A.4 Estimation Period and Number of Control Firms

Firm name	Sector	Ownership	Estimation periods	Number of control firms
China Vanke Co., Ltd.	Real Estate	Central SOE	245	9
Aluminum Corporation of China Limited	Non-ferrous Metal	Central SOE	245	2
Yanbian Shixian Bailu Papermaking Co., Ltd.	Business Service	Local SOE	81	4
Hengyi Petrochemical Co., Ltd.	Chemical Fiber	Private	245	8
Shandong Nanshan Aluminium Co., Ltd.	Non-ferrous Metal	Private	245	19
Suning Universal Co., Ltd.	Real Estate	Private	245	42
Heilongjiang Interchina Watertreatment Co., Ltd.	Water Supply	Private	238	0
Changjiang Jinggong Steel Building (Group) Co., Ltd.	Architecture	Private	245	8
Sichuan Jinlu Group Co., Ltd.	Chemical products	Private	245	40
Nuode Investment Co.,ltd.	Non-ferrous Metal	Private	245	19
Suzhou Gold Mantis Construction and Decoration Co.ltd.	Architecture	Private	245	8
Sichuan Hongda Co., Ltd.	Non-ferrous Metal	Private	245	19
Fangda Jinhua Chemical Technology Co., Ltd.	Chemical products	Private	245	42
Fangda Carbon New Material Co.,ltd	Non-metallic Minerals	Private	245	15
Fangda Special Steel Technology Co., Ltd.	Ferrous Metal	Private	245	2
Shanxi Lanhua Sci-Tech Venture Co., Ltd.	Coal Mining	Local SOE	245	14
Yunnan Copper Co., Ltd.	Non-ferrous Metal	Central SOE	245	2
Jiangxi Hongcheng Waterworks Co., Ltd.	Water Supply	Local SOE	245	6
Yunnan Luoping Zinc and Electricity Co., Ltd.	Non-ferrous Metal	Local SOE	245	13
Jiangxi Lianchuang Optoelectronic Science and Technology Co., Ltd.	Electronic	Private	245	63
Xiandai Investment Co., Ltd.	Road Transportation	Local SOE	223	21
Kangmei Pharmaceutical Co., Ltd.	Pharmaceutical	Private	245	50
Yihua Lifestyle Technology Co., Ltd.	Furniture	Private	245	1
Shen Zhen Globe Union Industrial Corp.	Architecture	Private	245	8
Zhejiang Guangsha Co., Ltd.	Real Estate	Private	245	42
China Minsheng Banking Corp.,ltd.	Finance	Private	245	3
Founder Technology Group Corp.	Electronic	Central SOE	245	29
Pku Healthcare Corp., Ltd.	Pharmaceutical	Central SOE	245	5
Guangxi Wuzhou Zhongheng Group Co., Ltd.	Pharmaceutical	Private	245	50
Zoomlion Heavy Industry Science and Technology Co., Ltd.	Special Equipment	Local SOE	245	19
China Calxon Group Co., Ltd.	Real Estate	Local SOE	245	45
Financial Street Holding Co., Ltd.	Real Estate	Local SOE	245	45
China Coal Energy Company Limited	Coal Mining	Central SOE	245	4
Gemdale Corporation.	Real Estate	Local SOE	245	45
Shenzhen Agricultural Products Co., Ltd.	Business Service	Local SOE	245	4
Shanghai Pudong Development Bank Co., Ltd.	Finance	Local SOE	245	3
Guangdong Golden Dragon Development Inc.	Capital Service	Private	245	4
Hengli Petrochemical Co.,ltd.	Chemical Fiber	Local SOE	245	5
Baida Group Co., Ltd.	Retail	Private	245	21
Nanjing Central Emporium (Group) Stocks Co., Ltd.	Retail	Private	245	21
Hunan Haili Chemical Industry Co., Ltd.	Chemical products	Local SOE	245	35
Wuhu Conch Profiles and Science Company Limited	Rubber and Plastic	Local SOE	245	6
Anhui Conch Cement Company Limited	Non-metallic Minerals	Local SOE	245	10
Sanan Optoelectronics Co., Ltd.	Electronic	Private	245	63
Elec-Tech International Co., Ltd.	Electric Machine	Private	245	63
Xi'an Tourism Co., Ltd.	Public Utility	Local SOE	245	9
Xi'an Catering Co., Ltd.	Catering	Local SOE	245	1
Ginwa Enterprise(Group) Inc.	Pharmaceutical	Private	245	50
Greattown Holdings Ltd.	Real Estate	Private	245	44