

Research Article

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“Big Tigers, Big Data”: Learning Social Reactions to China’s Anticorruption Campaign through Online Feedback

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Abstract: *This article examines the effect of campaign-style anticorruption efforts on political support using the case of China’s most recent anticorruption drive, which stands out for its harsh crackdown on high-ranking officials, known as “big tigers.” An exploratory text analysis of more than 370,000 online comments on the downfall of the first 100 big tigers, from 2012 to 2015, reveals that public support for the top national leader who initiated the anticorruption campaign significantly exceeded that afforded to anticorruption agencies and institutions. Further regression analyses show that support for the leaders with respect to intuitions increased with the tigers’ party ranking. Findings suggest that while campaign-style enforcement can reinforce the central authority and magnify support for individual leaders, it may also marginalize the role of legal institutions crucial to long-term corruption control.*

Evidence for Practice

- Public support is an important indicator to monitor during anticorruption campaigns, in addition to corruption control.
- To comprehensively understand public opinion, it is necessary to separate political support into multiple dimensions.
- Anticorruption campaigns can generally help boost public support, especially support for top leaders.
- Policy makers ought to wield authority amassed through the campaign to promote institution building in order to achieve desired policy outcomes in the long run.

Corruption has detrimental effects on both economic well-being (Liu and Mikesell 2014; Liu, Moldogaziev, and Mikesell 2017; Rose-Ackerman 1999) and public trust in government (Seligson 2002; Villoria, Van Ryzin, and Lavena 2013). Previous research has examined a wide array of anticorruption strategies, such as increasing government transparency (Brunetti and Weder 2003; Cordis and Warren 2014), streamlining and reforming government (Goel and Nelson 1998; Neshkova and Kostadinova 2012), building strong anticorruption agencies (Klitgaard 1988; Quah 2011), and improving bureaucrats’ quality and integrity by promoting civil servants’ material incentives and intrinsic motivation (Azfar and Nelson 2007; Perry 1996; Perry and Hondegghem 2008). These measures are conducive to the quality of long-term governance. However, their implementation is often accompanied by difficulties such as a paucity of resources, information asymmetry, and institutional inertia (Wedeman 2005). Thus, political leaders, especially those in the developing world, often resort to less institutionalized means, in particular anticorruption campaigns, to fight corruption.

Driven by strong political will and often bypassing formal legal institutions, anticorruption campaigns tend to feature temporary intensive enforcement, such as revealing outrageous corruption cases and cracking down on high-ranking officials. Thus, eliminating corrupt officials tends to be presumed as the primary goal of campaigns. However, the broader sociopolitical repercussions of such campaign-style enforcement are often overlooked. In fact, governments usually launch anticorruption campaigns not only to curb corruption but also to gain legitimacy and win political support (Gillespie and Okruhlik 1991). When corruption is serious and governments are in a trust crisis, political leaders are especially prone to look for quick solutions to recover public confidence. For example, Indonesia launched several corruption eradication campaigns to legitimize Suharto’s regime (Quah 1999). The Korean government also resorted to anticorruption campaigns to rebuild trust in government, which has declined in recent years (Yi 2015).

This article seeks to understand the extent to which anticorruption campaigns win public support, which is a critical factor for good governance and political

stability (Chanley, Rudolph, and Rahn 2000; Easton 1975; Li 2011; Muller and Jukam 1977). Even in nondemocratic states such as China, public support is an important source of legitimacy that can provide the political regime with leeway to maneuver when it encounters difficulties in its more immediate political tasks (Li 2013; Shi 2001). Loss of confidence can mean that people vote with their feet or push for a democratic system (Chen and Dickson 2008).

In particular, we examine social reactions to China's most recent anticorruption drive, which was launched immediately after the 18th National Congress of the Communist Party of China in 2012. The Chinese government has always considered anticorruption to be a major strategy for winning public support for the party and the government (Guo 2014; Manion 2004). For instance, in several speeches, Chinese president and general party secretary Xi Jinping emphasized that "people's support is the greatest politics" and anticorruption is a major way to win support (Xinhua News Agency 2016). This latest campaign has hunted down a large number of "big tigers," or high-ranking officials, and lasted a long time. Given these characteristics, we explore public support through online feedback using the big-data approach, which, in comparison with regular surveys, can monitor public opinion over a longer period of time and across a larger geographic space and is more open to a variety of subtle sentiments.

We collected netizens' comments from five popular websites between the end of 2012 and 2015, following the downfall of the "big tigers" (i.e., officials at or above the vice provincial level). We then analyzed the comments to examine the sentiments of public support for different political authorities that have been the locus of political support identified by the extant literature (Chen 2004; Dalton 1999; Dickson 2016; Easton 1975; Li 2013; Yang and Tang 2010). In comparison with the anticorruption agencies implementing the campaign and the formal institutions that work to contain corruption, the individual supreme leader of the state, Xi Jinping, is found to have won the most support. In other words, anticorruption campaigns may reinforce public support for the top leader at the cost of distracting or even undermining support for institution building, which is more fundamental to the long-term effective control of corruption. The findings suggest that political will not only is needed to initiate campaign-style anticorruption but also should be diverted toward institutions. Therefore, policy makers ought to wield their authority amassed through short-term anticorruption campaigns to promote institution building, such as reforming anticorruption agencies and rules both during and after anticorruption drives.

This article first discusses the concept of anticorruption campaigns and the background of China's most recent anticorruption campaign. It then specifies where public support is lodged during anticorruption campaigns based on the literature on public trust. This is followed by a description of the data and method and illustrations of the major empirical findings. The last section summarizes conclusions from the analysis.

Anticorruption Campaigns: The Concept and the Chinese Context

Anticorruption campaigns are a form of campaign-style enforcement (Wedeman 2005). According to Liu et al.,

campaign-style enforcement is "a type of policy implementation involving extraordinary mobilization of administrative resources under political sponsorship to achieve a specific policy target within a defined period of time" (2015, 85). Campaign-style enforcement is often adopted because of the failure of regular enforcement, resource scarcity (Wedeman 2005; Zhan, Lo, and Tang 2014), and the policy priority allocated by the government (Liu et al. 2015; May, Workman, and Jones 2008; Zhou 2012). As for anticorruption enforcement, in contrast to the institutionalized measures that are implemented as systematic strategies to monitor and deter corruption, anticorruption campaigns usually consist of "feverish crackdowns" (Wedeman 2009, 15) on corruption and are ad hoc by nature (Chan and Gao 2009). Sometimes anticorruption campaigns also involve procedural and definitional excesses (Kennedy 1999), using radical and aggressive means of enforcement.

Chinese anticorruption campaigns are described by Manion (2004) as "several short bursts of intensive enforcement" that are usually "set in motion by top party and government leaders" through "a major escalation" of publicity in the Chinese press, condemning corruption and encouraging ordinary people to "report corruption and urging corrupt officials to confess their crimes." To demonstrate its priority, the central party leaders also issue new demands "for greatly increased anticorruption criminal enforcement" (161). With intensive enforcement, the campaigns often end "with the requisite claims of success and statistics showing a dramatic increase in the number of cadres arrested and convicted" (Wedeman 2005, 93).

Chinese anticorruption campaigns exhibit several salient features. First, the ruling Chinese Communist Party (CCP) dominates anticorruption efforts. In contrast to democracies such as the United States, which emphasize separation of powers and institutional division (Zhao and Peters 2009), in the one-party authoritarian Chinese state, the CCP controls cadre management across the state civil service, state enterprises, and institutes (Chan 2003). "The concept of governance in the People's Republic of China is synonymous with the capability of the CCP to manage its political, economic, and social affairs" (Zhao and Peters 2009, 123). Thus, the CCP has led anticorruption work through its Central Disciplinary Inspection Committee (CDIC) (China's primary anticorruption agency) and corresponding subnational committees. In terms of targets, unlike campaigns in the economic and environmental sectors (Guo and Foster 2008), anticorruption campaigns in China are more closely related to the internal problems of the ruling party and the government (Biddulph, Cooney, and Zhu 2012). Party leaders and government officials are the primary targets of the campaigns. Moreover, the campaigns are targeted toward greater numbers of officials, and more senior officials, than routine investigations.

Second, to mobilize administrative resources, campaigns may break down existing bureaucratic segmentation. Resource constraints (Wedeman 2005) and bureaucratic fragmentation (Zhou 2012) are two major factors hindering effective routine "police patrols" of corruption (Wedeman 2005, 96). During anticorruption campaigns, resources can be redeployed from other policy areas in the manner of interagency and intergovernmental bureaucratic "coordinated operations" (*tongyi xingdong*) to achieve a burst of hyperenforcement (Biddulph, Cooney, and Zhu 2012, 376;

Van Rooij 2006). In addition to regular anticorruption agencies, such as the CCP's disciplinary inspection committees (DICs) and procuratorates, other government organizations such as audit bureaus, police departments, and taxation bureaus are often mobilized to facilitate investigations. Staff of other government departments may be borrowed by the DICs to add extra staff support.

Third, political will tends to outweigh legal procedures. Because of their political sponsorship, anticorruption campaigns, compared with other administrative and legal campaigns, are probably most similar to the prereform campaigns of the Mao era, although apparently less politicized and with less mass mobilization. Repressive means may be used to frighten people into lawful behavior to meet policy needs (Tanner 2005), and judicial procedures may be expedited to show government efficiency. Punishments are also tactically implemented with severe penalties imposed on some officials to demonstrate commitment to anticorruption, while clemency or reduced penalties are offered to other miscreants to boost the detection and capture rate (Manion 2004; Wedeman 2005). Finally, Chinese anticorruption campaigns are often driven by multiple purposes beyond controlling corruption. Prior research has indicated that anticorruption campaigns have often been designed to relieve public resentment (Guo 2014; Sun 2004) or even to cool down an overheating economy (Quade 2007). These features indicate that anticorruption campaigns are political implementation, according to Matland's (1995) contextual matrix of policy implementation. They possess sufficient resources and adequate power to achieve objectives that are otherwise unreachable through routine supervision of corruption.

The Unprecedented Anticorruption Campaign in China

China has seen at least six major anticorruption campaigns since 1982 to cope with the corruption that has accompanied economic growth originating from market-oriented economic reform (Gong 2002; Manion 2016; Wedeman 2004). The anticorruption campaign launched by Xi Jinping in 2012 immediately after he became general party secretary, the topmost leadership position in China, is the most recent. Scholars have noticed significant differences from previous campaigns. First, Xi's campaign has been of a much longer duration. It showed no signs of concluding by 2016, whereas previous campaigns usually lasted a few months. Moreover, the intensity of enforcement within the campaign has been substantially augmented by the rising number of cases investigated and crackdowns on senior officials. A tremendous amount of public attention has been diverted toward Xi's campaign, with extensive domestic and international media coverage dedicated to party leaders' anticorruption speeches, "breaking news" accompanying the apprehension of senior officials, and "breathtaking revelations" regarding officials' venality (Manion 2016, 7). Finally, the number of investigations conducted by the CDIC and its subordinate branches during the current campaign has far surpassed any of the previous campaigns.

More importantly, the latest anticorruption campaign has been prominent in its attack on high-profile corruption committed by "big tigers," or senior officials. For example, 161 officials at or above the provincial/ministerial level had been arrested by the

end of 2015 (Kan 2015), as opposed to 151 provincial/ministerial level officials arrested during the 20 years between 1993 and 2012 (Tencent 2016). Furthermore, to break down corrupt kingdoms that have become an eminent threat to the central authorities, the latest campaign has cracked down on "mega tigers," or high-ranking officials at the national level, such as Zhou Yongkang, Ling Jihua, and Guo Boxiong. Moreover, Wang Qishan, appointed head of the CDIC in 2012, has used an iron fist in enforcing the campaign. Under Wang, the CDIC has tightened control over its local branches (Fu 2015). The inspection teams dispatched by the CDIC have also been rejuvenated to uncover corruption and supervise the implementation of discipline by increasing the number of teams and the frequency of inspections. All of the measures have helped strengthen the party center's unified leadership and centralize available resources to carry out the anticorruption campaign. Thus, the latest anticorruption campaign has demonstrated in both quantitative and qualitative terms that it is more thoroughgoing than previous campaigns in China (Manion 2016).

However, anticorruption campaigns can also generate problems, which may have been aggravated by the unprecedented scale of the latest campaign. First, the extraordinary corruption cases of the "big tigers" might have shocked the public and undermined people's trust in the party and government because many "big tigers" were political leaders in the top echelons of the party or the central government.¹ Second, by disrupting routine enforcement and reinforcing the party's leadership over administrative bureaucracies, campaigns are actually in constant conflict with long-term institution building and the rule of law (Zhou 2012). For instance, policy portfolios under other government departments that are not prioritized may be completely suspended during a campaign to free up resources for campaign goals.

Moreover, because targets and the means of punishment enforced during campaigns tend to be selected for specific objectives, anticorruption investigations and disciplinary inspections are often "tools designed to serve political goals grounded on the shifting sands of political necessity. Fixed rules and legal institutions become ill-fitted to play a leading role, if any at all" (Fu 2015, 149). "Pragmatic political calculations loom large," especially in high-profile cases, such as those regarding national-level leaders, rendering "no place for legality" or "morality more broadly" (Fu 2015, 149). Thus, anticorruption campaigns often bypass legal procedures and marginalize legal institutions designed to control corruption. Anticorruption under Xi's leadership has been suspected of being "reduced to an intra-party disciplinary matter" (Fu 2015, 139). Further, at the same time that legal institutions are attenuated, the decisive role of the central authority and the top leaders who initiated the campaign may be magnified through the campaign. Therefore, in consideration of both the achievements and the potential limitations of China's unprecedented anticorruption campaign, we seek to systematically evaluate its effect on public support.

Lodging Public Support for the Anticorruption Campaign

A small but growing body of literature has explored what affects public opinion on anticorruption endeavors. Scholars find that people's understanding of the definition, causes, and

consequences of corruption, for instance, greatly influences their tolerance and willingness to fight it (Gong, Wang and Ren 2015). Those who are unhappy with income disparity and the intrusion by political powers into the economy tend to hold high expectations for anticorruption reform and efficacy (Li, Gong, and Xiao 2016). Those who perceive a low level of integrity within their city governments tend to be especially dissatisfied with local anticorruption endeavors (Song and Cheng 2012). In addition, Jiang and Yang (2016) address more specifically how anticorruption campaigns affect public support for government by exploring the public reaction to the purge of Chen Liangyu, the former party secretary of Shanghai. Nevertheless, research specifically devoted to the effect of anticorruption campaigns on public support is still scant. Moreover, the extant literature tends to treat political support as a holistic object, whereas it is actually a multidimensional phenomenon (Dalton 1999). Making distinctions between different dimensions of political support is crucial because the distinct definitions and dimensions of political support may lead to divergent conclusions (Warren 1999; Yang and Tang 2010).

In groundbreaking work on political support, Easton (1965) argues that people express their support for three distinct political entities: the authorities, the regime, and political communities. He further identifies two types of support: specific support and diffuse support (Easton 1975). Specific support, largely based on the public's perception of the outputs and performance of the political authorities, is relatively unstable. Diffuse support, in contrast, is "shaped mainly by prolonged socio-psychological forces and is only weakly associated with people's spontaneous responses to specific policies and the performance of incumbent authority" (Tang and Huhe 2014, 569; Easton 1975). Following Easton's work, Dalton (1999) classified political support/trust into five categories: political community, regime principles, regime performance, regime institutions, and political actors.²

According to the foregoing conceptual classification, political support stimulated by anticorruption campaigns falls under the domain of specific support for the performance achieved by relevant government institutions and political leaders. Based on the extant studies of political support in China, we further propose to examine three layers of political authorities that have been the most relevant to initiating and implementing the latest anticorruption campaign: the central authority of the party-state; the top party leader initiating the campaign (Xi Jinping) and the top leader leading the campaign (Wang Qishan); and both the anticorruption agencies implementing the campaign and the formal institutions controlling corruption.

Central Authority of the Party-State

Easton (1965) argues that most political systems require a relatively stable set of authorities, which need to be buttressed to at least some extent by support. Specific support is mainly manifested in people's attitudes toward "what the authorities do and how they do it" (Easton 1975, 437). In a unitary state, the central government has ultimate political authority, and subnational units only exercise powers that the central government chooses to delegate. This contrasts with federal states, in which political authority is shared between the federal government and its constituent polities

(Stephens and Wikstrom 2007). Moreover, the hallmark of the Chinese unitary state is the fusion of party and state: the party-state (Furtak 1986). The central authority is dominated by the party center, which governs the state through its control of all party cadres and government officials (Shirk 1993). Thus, people also refer to the central authority simply as "the Center" (*zhongyang*), indicating its authoritative position in the regime (Li 2013). Given that national leaders are not popularly elected, "citizens in China usually judge the incumbent authority as a whole mainly through the policies made and implemented by the authority" (Chen 2004, 25). Hence, for many people, a large-scale anticorruption campaign would be viewed as a decision made and guided collectively by the central authority of the party-state. The central authority is undoubtedly the primary focal point for understanding public support during an anticorruption campaign.

Top Party Leaders Initiating the Campaign and Leading the Campaign

Ordinary citizens also tend to personalize political authorities (Caprara 2007). By studying petitioners to Beijing, Li (2013) finds that people might redefine what constitutes the central authority to retain their trust in the government. For some people, the Center is highly personalized to include only a few top leaders. Therefore, in the case of the anticorruption campaign, we also refine the measure of popular support for the central authority to be the two top leaders: the top leader who initiated the campaign, Xi Jinping, the supreme leader of China, and the top leader who heads the CDIC and has led the campaign in practice, Wang Qishan. As discussed previously, campaign-style enforcement may centralize power in the top leaders, who are, therefore, expected to gather popular support through the campaign.³

Anticorruption Agencies Implementing the Campaign and Formal Institutions Controlling Corruption

While exploring the sources of regime support in China, Yang and Tang (2010) and Dickson (2016) differentiate institutional support by separating it into various political institutions representing different government functions. Following this approach, this article focuses on the anticorruption agencies, mainly the CDIC and the DICs from provincial to county levels that carry out the campaign in practice by, for example, conducting investigations, arresting officials, and inspecting government departments. In addition to the concrete anticorruption actors, public support for formal rules and laws regulating corruption in the long run is examined. The efficacy of the law and regulations largely relies on public confidence in their effectiveness and self-enforced obedience and respect for the rules by those who are ruled (Weingast 1997). Given that campaigns tend to bypass legal institutions it is worth examining how the public views the formal rules that over the long run sustain the achievements of temporary campaigns.

Data and Methods

Most extant research on political support analyzes data collected through surveys and interviews, which, despite their advantages, compromise either timeliness or the ability to reach a wide variety of public sentiments. This study uses a big-data approach, mainly by web scraping and conducting text analysis of online comments about China's latest anticorruption campaign. The big-data approach dramatically increases the number and types of

observations and variables available for analysis (Grimmer 2015; Monroe et al. 2015; Titunik 2015).

We systematically trace online comments about the news reports of *each and every* corrupt high-ranking official's downfall over a nearly three-year time span, as opposed to focusing only on a one-shot corruption investigation, as previous studies have done relying on surveys. The 370,000 online comments obtained from China's major websites constitute a large quantity of data that could not be collected in traditional survey studies. More importantly, the online comments enable evaluation of people's perceptions of their national leaders during the campaign, which has been a taboo question to ask in public surveys (Shi 1997).

The big-data approach also mitigates the reliability problem of answering political support questions in an authoritarian context during surveys because netizens in China actually enjoy a large degree of "freedom of speech" on the internet (King, Pan, and Roberts 2013). Finally, netizens are indeed "critical citizens" bearing particular implications for understanding public opinion and potential social mobilization in authoritarian settings because they are politically active, better informed, and skeptical of government, as shown in the Arab Spring protests (Lynch 2012; Norris 1999).

Data Source

Given the apparent difficulty of collecting every single comment on every piece of anticorruption news on the internet, we focus on netizens' comments following the first formal news reports of the investigation into the big tigers on China's five major commercial news websites: Sina, Sohu, Tencent, Phoenix, and Caixin. The primary reason for selecting these five websites is their popularity as measured by Alexa's web traffic, engagement, and reputation metrics. According to Alexa's 2016 rankings (<http://www.alexa.com>), Tencent, Sohu, and Sina are the three most popular portal news websites in China. Although Phoenix and Caixin are not ranked among the top 50 websites in China, Phoenix News, sponsored by Phoenix New Media based in Hong Kong, is relatively independent of the Chinese government and popular among Chinese middle class, and Caixin was a crucial outlet for the first release of material about the downfall of corrupt officials in the latest campaign.⁴ These two websites are therefore also included in the analysis.

The research is limited to the first 100 "big tigers" investigated by the CDIC from December 2012 to April 2015. Notably, although the CDIC and news media announced the investigation of one civilian official at a time, they typically released anticorruption news regarding groups of military leaders. Therefore, the online comments of 75 news reports on individual officials and two news reports on military leaders were collected from each website. Table S1 in the Supporting Information in the online version of this article lists the basic information pertaining to these "big tigers."

Because these five websites were designed and developed in different ways, the programming language Python was used to develop five distinct web-scraping programs for extracting online comments about anticorruption news stored in a MySQL database. A total of 419,028 comments were collected. Not all of the extracted comments were useful for further analysis. First, "blank" comments

containing no information were deleted. Second, comments with garbled messages that could not be decoded in a general Chinese operating system were wiped out. Third, when two or more identical comments came from one user at exactly the same IP address, only one was retained because repeated posts were likely to arise either from internet congestion or from other idiosyncratic factors. Finally, measures were taken to alleviate concerns about the well-known government-recruited commentators, who have been dubbed the "50 Cents Party" (Han 2015). However, one can never be 100 percent certain about the true identity of an online commentator. The rule devised in this study was that when a user at the same IP address posted more than two comments on the same news report within two hours, it was considered a government-recruited commentator and all of its comments were deleted.⁵

After filtering, a total of 370,333 comments were left to analyze. Figure 1 illustrates the distribution of the comments across the five websites. Forty-three percent of the comments in the sample are from Tencent, the most popular news media platform in China, followed by Sina, Phoenix, Sohu, and Caixin. Figure 2 shows that the waves of comments, in both volume and total words, fluctuate over time with the downfall of different big tigers. The wave hit its peak in July 2014, when a group of high-level officials were arrested one after another, including Zhou Yongkang, China's former security czar and a Politburo Standing Committee member.

Data Analysis and Results

The starting point of analysis is to pinpoint the most frequently used words (*词*) among all the comments to offer an overview of their themes. After filtering out all the stop words and segmenting the comments into meaningful words,⁶ a total of 2.25 million words were contained within the 370,333 comments. In the word cloud shown in figure 3.1, the most frequently used words among all comments are displayed in larger sizes. The most frequently used words were "corrupt" (贪) and "official" (官). Other frequently used words include "good"/"well" (好), "China" (中国), "investigate" (查), "support" (支持), "anticorruption" (反腐), "catch"/"arrest" (抓), "hope" (希望), "tiger" (老虎), and "corruption" (腐败). This big picture seems to indicate that most people expressed support for investigating corrupt officials, especially the "big tigers."

Figure 3.2 lays out the corresponding absolute counts of these high-frequency words and their percentage of the total word count. Among these "hot" words, "support" ranked fifth in terms of frequency, implying a high level of public support and generally

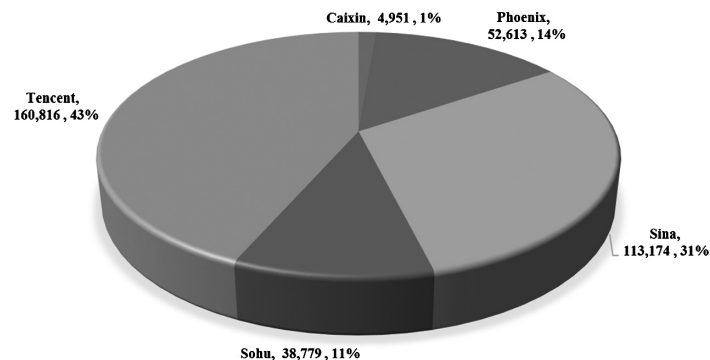


Figure 1 Distribution of Comments across Websites

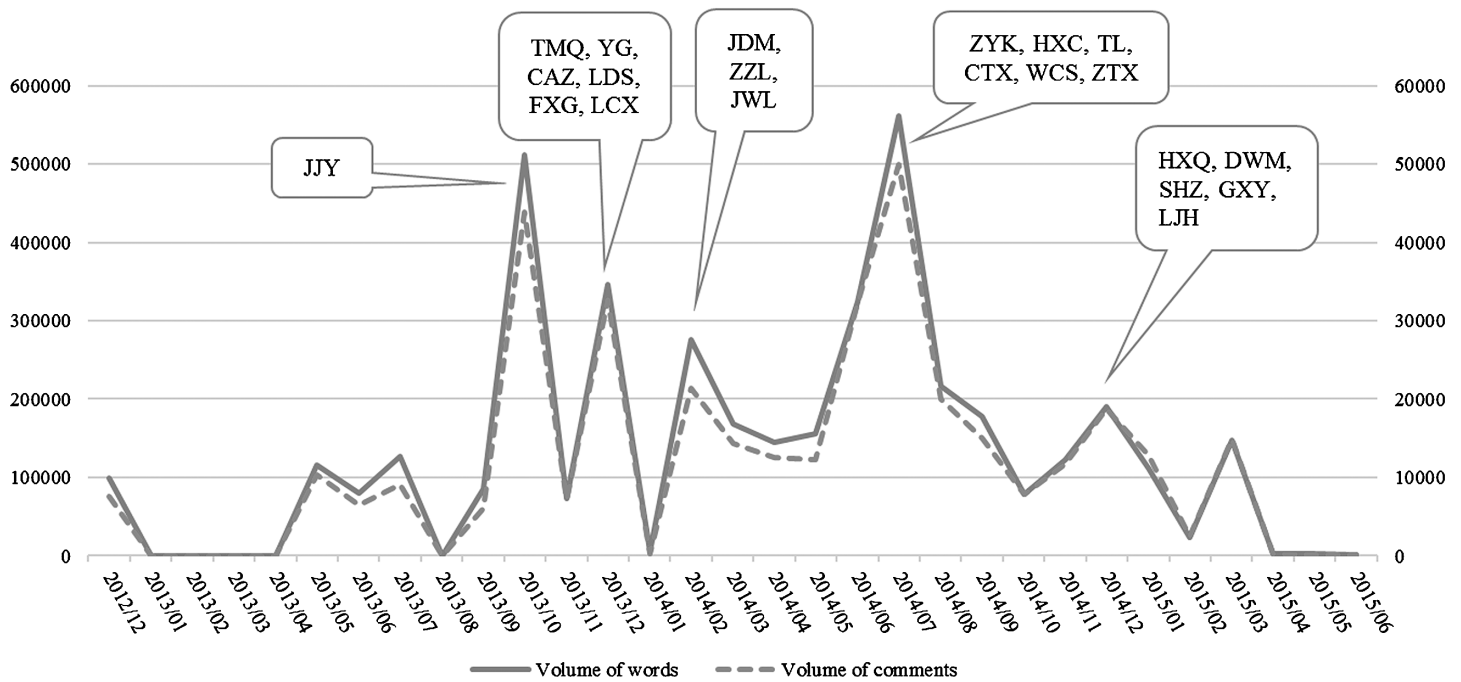


Figure 2 Distribution of Comments Over Time

positive attitudes toward the government’s anticorruption campaign. Notably, figure 3.2 also shows that the words related to China’s paramount leader, Xi Jinping, such as “Party Secretary General Xi” (*xizong* 习总书记), “Chairman Xi” (*xizhuxi* 习主席), and “Uncle Xi” (*xidada* 习大大), were quite commonly used by netizens.

Second, we use latent Dirichlet allocation (LDA) to detect the major themes embodied in the comments. As a classic topic model method based on probability theory, LDA identifies the probability of different themes appearing in all articles of the collection.⁷ Table 1 reports nine types of meaningful themes with their categories, keywords, and representative comments. Apparently, positive attitudes, such as showing support, praise, and the value of certain political authorities, which we call “affirmative attitudes,” account for a sizable weight in all the themes, although there are also more critical and sophisticated views such as questioning the light punishment imposed on certain officials or the selective enforcement of anticorruption campaigns.

Correspondingly, figure 4 shows the probability of each comment theme appearing in the database. Among the nine types, the theme “Support Xi” has the highest probability, 13.37 percent, indicating that the top leader Xi Jinping garnered a great deal of public support by launching the anticorruption campaign. The theme “applauding anticorruption in general” has a probability of appearing of 10.54 percent. Another theme with a probability of 11.55 percent involves joyful feelings about the campaign expressed through Chinese netizens’ typical words such as “sending congratulatory telegrams” while inviting the CDIC to investigate their hometowns at the same time. Notably, Chinese netizens also expressed their support for institution building to deter corruption or at least highlighted party discipline (*dang ji*) and state law (*guo fa*) instead of individual leaders in their comments, as manifested in a theme with a probability of 10.49 percent. The subsequent analysis focuses on comparing affirmative attitudes across individual leaders,

anticorruption agencies, and formal institutions in the Chinese netizens’ comments.

Affirmative Attitudes toward Different Political Authorities

Three steps proceed to measure affirmative attitudes toward different political authorities identified in the previous section. First, related comments are categorized into three broad types: central authority, top leaders, and institutions. The “top leaders” category has two subcategories: Xi Jinping and Wang Qishan, whereas the “institutions” category is further divided into “anticorruption agencies” and “abstract institutions,” including state law and party discipline. Then reference words are grouped into their corresponding categories. For example, netizens could refer to Xi Jinping as Party Secretary Xi (*xizong*), Chairman Xi (*xi zhuxi*), Uncle Xi (*xi dada*), and so on. These words are all put under the category “Xi Jinping.” In a party-state like China, netizens use “center,” “party center,” “CCP central committee,” and “state council” to refer the central authority. Table 2 summarizes the most frequently used terms in the database for each government authority.

Finally, we seek to identify affirmative attitudes for each category of political authorities. Given the short informal textual messages under examination, we use an alternative approach and focus exclusively on positive sentiments instead of identifying positive, negative, or neutral sentiments, as is common in sentiment analysis. This study is particularly interested in the *relative* levels of affirmative attitudes toward different authorities. We search for affirmative words such as “support,” “great,” and “very good,” which tend to appear frequently together with words representing each political authority in all the comments. We define these words as “concomitant affirmative words.” If the words representing one political authority are associated with more affirmative words, then the netizens presumably expressed more affirmative attitudes toward this political authority. Because of the large number of

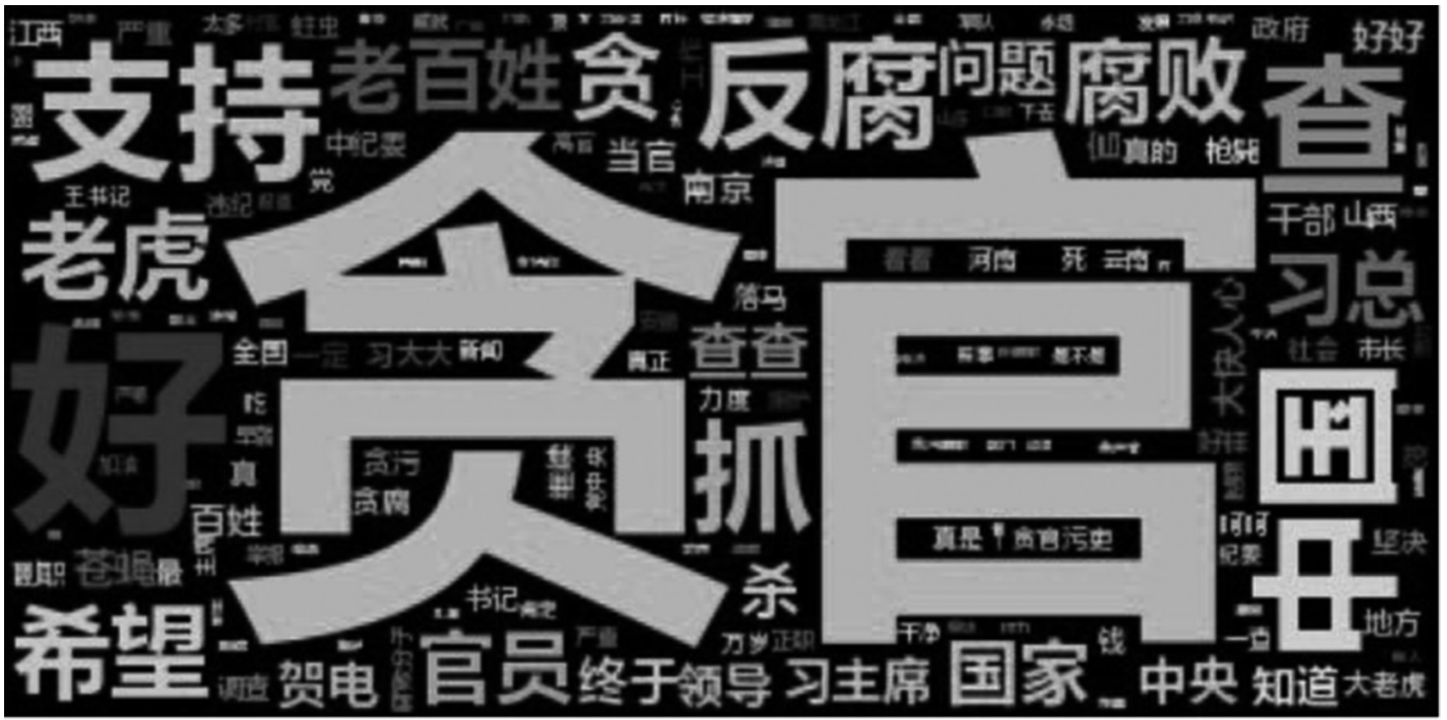


Figure 3.1 Word Cloud

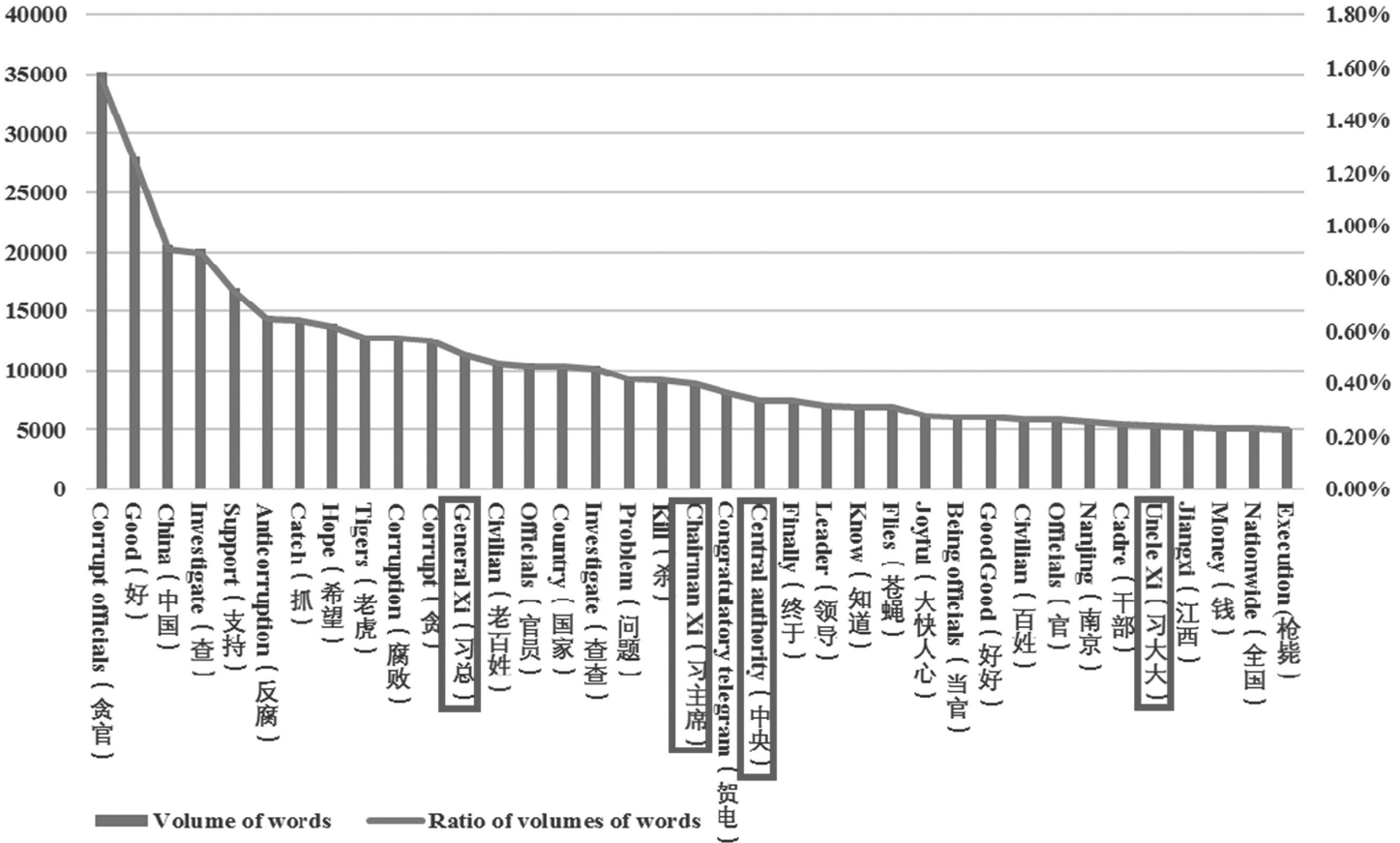


Figure 3.2 Word Frequency

these words, we focus on the top 10 and 20 most frequently appearing concomitant affirmative words. Table 3 lists the top 10 frequent concomitant affirmative words for each political authority under study.

Figure 5 presents the distribution of affirmative words across different political authorities. The bars indicate the absolute count of all the words used to refer to each category of political authorities. The political authorities with higher columns are mentioned more

Table 1 LDA Categorization of Comment Themes, Ranked from Low to High Probability

Types	Keywords	Sample Comments
Type 1: Report local corruption	钱 (money), 工资 (salary), 房子 (house), 查 (check)	云南镇雄这些才是山高皇帝远呢。每个月两千工资的小官工作几年就能修建一百多万的房子。能开二十多万的小车。他们这钱从哪里来呢? Yunnan Zhenxiong is far away from the emperor. Small officials' monthly salary is only RMB2000. However, they can build houses costing RMB1 million in a few years, and drive cars worth more than RMB200,000. Where did they get the money ?
Type 2: Promote institution building	监督 (supervision), 法律 (law), 制度 (institution), 贪官 (corrupt officials), 权力 (power), 反腐 (fighting corruption/ anticorruption)	希望一边反腐, 一边加强制度完善, 特别学习台湾喝新加坡美国等进行权力监督和约束。查出的是九牛一毛。贪官繁殖犹如细胞分裂, 杀也杀不完。 It would be better to improve the institution while fighting corruption , learning from places such as Taiwan, Singapore, and the U.S. to constrain and supervise public power . Those who are investigated are only a drop in the bucket. Corrupt officials are like cell division; that is, there is no way to eliminate all of them by getting rid of a few.
Type 3: Applaud anticorruption	大快人心 (joyful, exhilarating), 老虎 (big tigers), 国家 (country), 希望 (hope), 苍蝇 (flies)	这太大快人心了, 多查一些老虎。苍蝇, 我们国家才有希望。 This is very joyful . There is only hope for our country if more tigers and flies are investigated.
Type 4: Uphold investigations on local officials	查 (investigate), 老百姓 (ordinary people), 地方 (local), 村官 (village officials), 苍蝇 (flies)	我们那的村官也是很富有, 不知怎么来的。该查。让老百姓好过点。 Village officials in our area are also quite wealthy. It is not clear how they get rich. They should be investigated , so that ordinary people can have a better life.
Type 5: Question the campaign and corrupt officials	副职 (deputy position), 正职 (chief position)	又是一个副职贪官, 怎么副职都好贪。正职都清廉? Another corrupt deputy official , how come all officials in deputy positions are corrupt while officials in chief positions are clean?
Type 6: Comments on Ji Jianye	南京 (Nanjing), 扬州 (Yangzhou), 季 (ji)	可怜的老季, 在扬州官民眼里, 老季是个能干的人! 老杨真是市长催命符, 到哪当书记, 市长就倒楣 Poor Old Ji. In the eyes of Yangzhou people and officials, Old Ji is a capable person! Old Yang is nothing but a nail in the mayor's coffin. He brings nothing but trouble to mayors wherever he serves as secretary.
Type 7: Congratulations and invite investigations	贺电 (congratulatory telegram), 查 (check/investigate), 终于 (finally)	终于看到有湖南官员被查了, 身为湖南人, 在广州发去贺电! 习总书记, 湖南该多查查清楚! Finally a Hunan official is investigated . Being a Hunanese, I am sending my congratulatory telegram from Guangzhou! Boss Xi, Hunan should be investigated more thoroughly.
Type 8: Advocate severe penalties	枪毙 (execution by shooting), 死刑 (death penalty), 全部 (all), 贪官 (corrupt officials)	清官少之又少, 原因就是处罚太轻, 贪官贪500万以上全部判处死刑立即执行, 400万以上判处无期徒刑, 300万以上判处20年, 200万以上判处15年, 100万以上判处10年, 中国的官场一下清纯了 The lack of honest officials is because of the light penalty. If a death penalty with immediate execution is imposed on all corrupt officials taking Y5 million or more; life imprisonment is imposed on corrupt officials convicted of graft of Y4 million and above; 20years imprisonment is imposed on those convicted of graft totaling Y3 million or above; sentences of 15years in prison for corrupt officials convicted of graft of Y2 million or above; and sentences of 10years imprisonment for corruption totaling Y1 million and above, the Chinese officialdom will suddenly be clean.
Type 9: Support Xi, Wang, and central government	支持 (support), 拥护 (advocate), 习大大 (Uncle Xi), 习总书记 (Party Secretary General Xi), 王书记 (General Secretary Wang), 万岁 (long live), 老虎 (tiger)	习主席、王书记, 你们是中国的救星, 是人民的救星, 你们反腐败行动深得中国人民的拥护, 现在网上说大老虎们要反扑, 不要怕! 有13亿中国人民支持你们, 一彻大老虎都是纸老虎, 只要您一声号令, 中国人民就是赴汤蹈火也会按你们的指示办! 习主席万岁, 王书记万岁! Chairman Xi, General Secretary Wang , you are China's savior, people's savior, your anticorruption drive has gained people's support and endorsement. There have been rumors on the Internet saying that the big tigers are planning to launch a counterattack in retaliation. Don't be afraid! You have 1.3 billion Chinese people behind you, all the big tigers are just tigre de papier . Your loyal people await your instruction and are willing to do everything that you command! Long live President Xi and Secretary Wang!

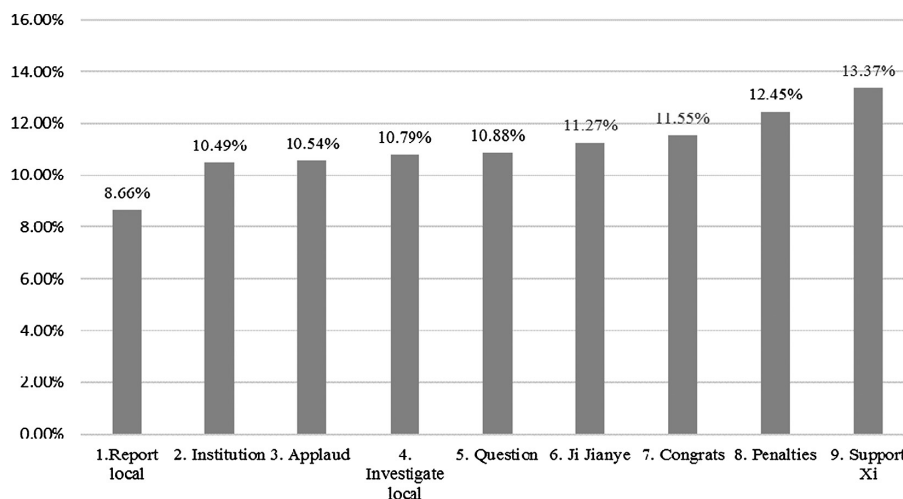


Figure 4 Probability of Comment Themes

Table 2 Grouping Words to Corresponding Political Authorities

Central Authority of the Party-State	Top Party Leaders		Institutions		
	Xi Jinping	Wang Qishan	Anticorruption Agencies	State Law	Party Discipline
中央 Center	习总 Party Secretary General Xi (Boss Xi)	王书记 Secretary Wang	中纪委 CDIC	法律 Legislation	党纪国法 Party discipline and state laws
党中央 Party Center	习主席 Chairman Xi	王岐山 Wang Qishan	巡视组 CDIC Inspection Teams	法 Law	党纪 Party discipline
中央政府 Central Government	习大大 Uncle Xi	岐山书记 Secretary Qishan	中央纪委 CDIC	法治 Rule of law	群众路线 Mass line
中共中央 CCP central committee	习近平 Xi Jinping	王总 Boss Wang	中央巡视组 Central Circuit Inspection Team	法制 Rule by law	党风 Party work style
国务院 State Council	习总书记 Party Secretary General Xi	老王 Old Wang		依法治国 Rule the country by law	党风廉政 Clean party style

Table 3 Top 10 Concomitant Affirmative Words

Central Authority of the Party-State	Top Party Leaders		Institutions		
	Xi Jinping	Wang Qishan	Anticorruption Agencies	State Law	Party Discipline
支持 Support	支持 Support	支持 Support	支持 Support	支持 Support	支持 Support
好 Good	辛苦 Thanks for the hard work	好 Good	好 Good	好 Good	好 Good
万岁 Long live	好 Good	拥护 Advocate	辛苦 Thanks for the hard work	拥护 Advocate	万岁 Long live
好样 Good	好样 Good	坚决拥护 Strongly support	加油 Keep working	坚决拥护 Strongly support	大快人心 Joyful and exhilarating
拥护 Advocate	万岁 Long live	英明 Wise	好好 Very Good	大快人心 Joyful and exhilarating	拥护 Advocate
威武 Powerful	拥护 Advocate	大快人心 Joyful and exhilarating	好样 Good	好好 Very Good	坚决拥护 Strongly support
支持你 Support You	加油 Keep working	感谢 Thanks	感谢 Thanks	万岁 Long live	赞 Praise
大快人心 Joyful and exhilarating	感谢 Thanks	好好 Very Good	赞 Praise	英明 Wise	好样 Good
英明 Wise	威武 Powerful	伟大 Great	贺电 Congratulations	伟大 Great	顶 Big support
伟大 Great	英明 Wise	万岁 Long live	大快人心 Joyful and exhilarating	顶 Big support	伟大 Great

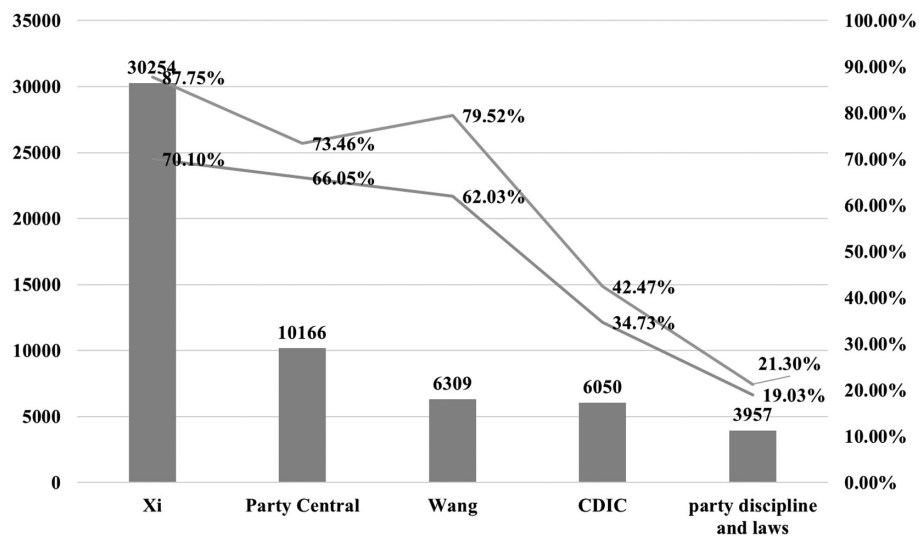


Figure 5 Distribution of Concomitant Affirmative Words across Political Authorities

often in the netizens' comments. As seen in figure 5, Xi Jinping is mentioned most frequently, 30,254 times, among all the political authorities. He is followed by the central authority of the party-state, then Wang Qishan, and the CDIC. Party discipline and laws are mentioned the least often, only 3,957 times, which is barely one-eighth of the comments made about Xi Jinping. In other words, comparing different political authorities, the netizens' attention was concentrated on the topmost leader, whereas the formal rules covering laws and party discipline gained the least attention from the public. This finding is consistent with the theoretical analysis of the potential drawbacks of campaign-style corruption control in which institution building tends to be bypassed and overshadowed by the empowered central authority and its leaders.

The two lines show the probability of affirmative sentiments for each political authority. Take Xi Jinping as an example. The percentage of comments involving the top 10 or 20 concomitant affirmative words among all comments (calculated by the number of words) mentioning Xi Jinping means, intuitively, what percentage of all words referring to Xi are accompanied by affirmative words. This is an indicator of the generally supportive attitude of the public toward Xi. The lower line is based on the top 10 concomitant affirmative words, and the higher line is based on the top 20 concomitant affirmative words. If measured by the top 10 concomitant affirmative words, the percentage of supportive attitudes toward Xi is 70.10 percent, and 87.75 percent if measured by the top 20 concomitant affirmative words. Therefore, Xi not only gained a lot of attention from the public, but also he won a high level of support.

Support for the central authority and Wang Qishan is similarly high, although not as high as for Xi. Hence, although many central-level officials were found to be corrupt during the campaign, the public nevertheless acknowledged the central authority's effort to fight corruption in general. In contrast, the anticorruption agencies such as the CDIC or formal institutions such as law and party discipline attracted much less attention and limited support from the netizens.⁹ CDIC receives around 40 percent of public support; the public shows even less affirmative sentiments, only 20 percent, when discussing laws and discipline, indicating much less confidence in these institutions as a means of controlling corruption.

In figure 6, we further explore how affirmative attitudes toward different political authorities change when different big tigers fell over time. Essentially, we break down the probability of affirmative sentiments obtained in figure 5 for each big tiger to examine how affirmative sentiments for each political authority change along with the tigers and thus compare affirmative sentiments across different political authorities over time. The black line represents affirmative sentiment toward Xi, which is significantly higher than the lines that represent other political authorities. The gray dashed line and black dashed line represent Wang Qishan and the central authority, respectively. They are generally lower than the black line but higher than the gray and dotted lines, which represent the anticorruption agency and law/party discipline, respectively. In addition, the highest three lines tend to fluctuate more wildly over different tigers than the two lower lines, indicating that public support for these three authorities might have depended on the specific tigers. This

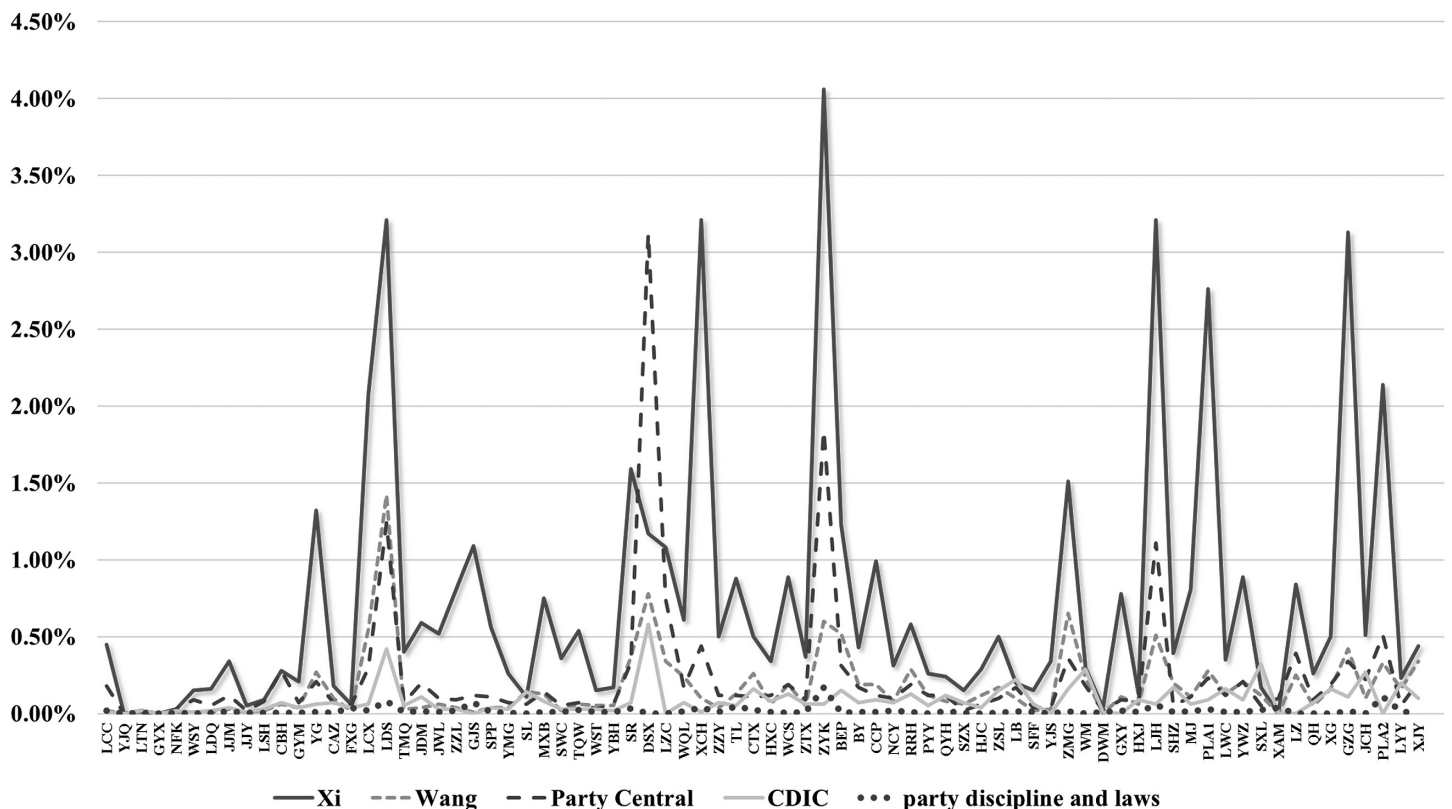


Figure 6 Change in Affirmative Sentiments across Big Tigers over Time

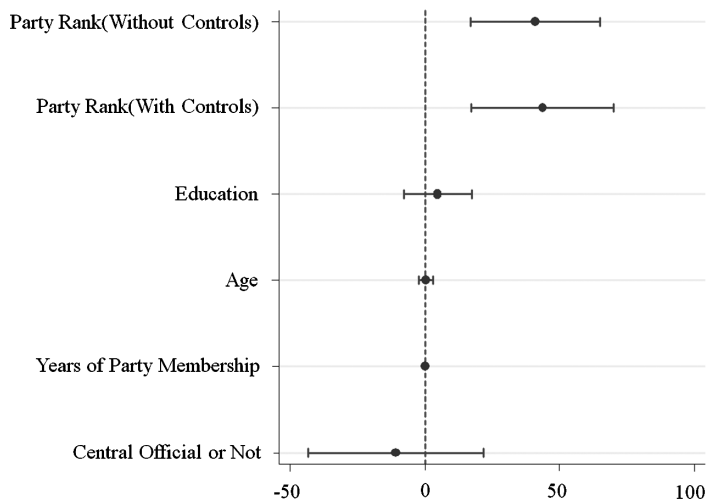


Figure 7 Visualized Regression Results of Big Tigers' Party Rank on Political Support

fluctuating trend is strongest for Xi. Some spikes in Xi's affirmative sentiments are associated with the downfall of mega tigers such as Zhou Yongkang (ZYK), Xu Caihou (XCH), and Ling Jihua (LJH). In contrast, affirmative sentiments experience little change over time for the anticorruption agency and the formal institutions. This finding suggests that cracking down on the "mega tigers" at the national level tended to elicit more public support for the top leaders.

Regression Analysis across Big Tigers

To provide more evidence to support this argument, we conduct a regression analysis to test the effect of the corrupt officials' party rank on the affirmative sentiments toward Xi vis-à-vis formal institutions (i.e., law/party discipline). The dependent variable is the ratio of Xi's support propensity to the formal institutions' propensity. Xi's (or formal institutions') support propensity is calculated as the number of concomitant affirmative words with Xi Jinping (or formal institutions) among the total number of words contained in the comments for each tiger. The key independent variable is the party rank of a corrupt official. It is a dichotomous variable: if a corrupt official was a central committee member or above in the party hierarchy, this variable is coded as 1; otherwise, it is coded as 0. Figure 7 virtualizes the regression results of two model specifications: one is a parsimonious model without control variables, and the other is a saturated model with some plausible confounders, including the level of education, age, years of party membership, bureaucratic level (central or local), and type of position (party, government, military, national, local people's congress or political consultative conference), and time trends. Figure 7 reveals that the party rank in both models with or without control variables is statistically significant, suggesting that the higher the party rank of the big tiger who was caught, the more public support Xi Jinping gained vis-à-vis formal institutions such as the law and party discipline. The results are similar for regressions using the administrative rank of corrupt officials as the independent variable. The coefficients of other control variables are not distinguishable from zero. In the Supporting Information online, figure S1 presents the results with the affirmative sentiments of Xi and institutions analyzed separately; figure S2 presents the results

with the amount of money involved in corruption in each case as an additional control variable.

Conclusion

This article has examined anticorruption campaigns, a less institutionalized anticorruption strategy, to complement previous studies that have focused on institutionalized anticorruption efforts. It broadens studies of campaign governance beyond the policy makers' perspective and mind-set (Liu et al. 2015) to examine broader effects on public opinion. In particular, we unbundle public support into three dimensions and use online comments about China's unprecedented anticorruption campaign. We find that campaign-style enforcement contributes to the centralization of power in the central authority and helps its top leaders consolidate public support, which could boost the short-term efficiency of policy implementation. This observation echoes research that Chinese people's trust in their top national leaders has been highly resilient (Dickson 2016; Li 2004, 2013; Tang 2016). Specific support for the supreme leader could also fuel diffuse support for the regime, especially in an authoritarian regime like China's (Dickson 2016). In this respect, this research bridges the popular top-down and bottom-up perspectives on public policy implementation by studying how the general public, who are the target population of the anticorruption campaign (i.e., the bottom), support different political authorities, who are the top designers of the anticorruption policy (i.e., the top) (deLeon and deLeon 2002). The findings also advance Matland's political implementation model by showing that policy implementation outcomes not only are "decided by [the] power" of major actors (1995, 163) but also can reinforce the power structure of actors and strengthen the power of the major policy initiator. On the downside, the pattern of the online comments seems to confirm scholars' concerns about the drawbacks of campaigns, such as the disruption to routine administrative procedures and the marginalization of legal procedures. Bypassing legal institutions during campaigns may result in even less attention being paid to the rule of law in Chinese society. In addition, Chinese state media propaganda tends to promote the central authority over institutions and may thus further increase the difference in public attention and support between top leaders and institutions.

In contrast, past anticorruption campaigns in Singapore and Hong Kong led to the establishment of successful anticorruption institutions and increased public trust in government. Their experience shows that political leaders' strong commitment to anticorruption is the primary condition for effective anticorruption efforts (Quah 2011). Alongside strong commitment, it is equally important that leaders use adequate and comprehensive strategies to prevent the need and opportunities for corruption (Quah 1999). In addition, Hong Kong's Independent Commission Against Corruption stresses that public trust in the anticorruption agency is a crucial determinant of anticorruption effectiveness, particularly public trust in the agency's integrity and capacity to control corruption in the general environment (Scott 2017). This is an example of "institution-based trust" ensured by laws and regulations (Thomas 1998), integral to trust in the general government.

In light of these successful experiences, the current Chinese administration has shown a rather strong political will for

anticorruption measures. The central authority has also acknowledged the importance of “institution building” as an anticorruption measure. For example, in a 2015 interview with the *Wall Street Journal*, Xi noted the importance of institution building in anticorruption and maintained: “we must keep power in the cage of systemic checks... As we go further in the anti-corruption campaign, we will focus more on institutional building so that officials will not dare and cannot afford to be corrupt and, more importantly, have no desire to take that course.” However, the current anticorruption campaigns have multiple goals. As the current study has shown, this can hinder institution building and the rule of law. Thus, the top leaders should maintain their composure during heated anticorruption campaigns and use the authority garnered from the campaign to push institutionalization measures forward, for instance, by diverting more resources to institution building for long-term prevention and monitoring of corruption. Biddulph, Cooney, and Zhu (2012) discuss the special kind of lawmaking that results from campaigns in China. Anticorruption enforcement could learn from this model to realize institution building through campaigns for long-term desired policy outcomes.

Finally, it is worth noting that data-driven methods using the big-data approach usually place less emphasis on the role of theory and have limited utility for causal inferences (Titunik 2015). Nevertheless, the use of big data in this study is theory driven, intended to provide empirical evidence to support the existing theories on anticorruption campaigns and public support. The data patterns are shown to be consistent with the theoretical predictions and therefore lend more confidence in the proposed theoretical arguments. Future research could use well-designed experiments to further explore the causal mechanisms.

Acknowledgments

This project is sponsored by the HKGRF (project no. 17411814). We thank Norbert Chan, Jordan Gans-Morse, Ting Gong, Robert Klitgaard, Danny Lam, Liang Ma, Alexey Makarin, James Perry, Hongshan Yang, and the three anonymous reviewers, as well as participants of the Interdisciplinary Approaches to the Study of Corruption Workshop at Northwestern University, the HKU-USC-IPPA Conference on Public Policy, and the Third Cross-Straits Public Administration Conference at Renmin University for their valuable comments on this research. We also acknowledge the excellent research assistance of John Chong, Siqin Kang, Sam Lee, Jia Zeng, and Xiaoming Zhong.

Notes

1. China’s administrative system consists of five government levels: central, provincial, prefectural/municipal, county, and township.
2. Although political trust and political support carry slightly different meanings, they are essentially measures of public confidence in a government and can be used interchangeably in most circumstances (Tang 2016).
3. Because other top leaders such as Premier Li Keqiang do not specialize in anticorruption, they are not the focus of this research. We examined people’s support for Premier Li and found that the comments related to him made up only a tiny proportion (approximately 0.2 percent) of the total, indicating that Premier Li was not generally viewed by netizens as the major leader of the campaign.
4. Unlike the four large web portals founded in the late 1990s, Caixin, created in 2010, mainly targets readers of a well-educated middle class, who are fewer in

number but more critical. Caixin’s editor, Hu Shuli, is also reportedly connected to the anticorruption tsar Wang Qishan. The comments from Phoenix and Caixin account for approximately 15 percent of the total. The empirical results are largely unaffected if these two websites are excluded from the analysis.

5. This is a rather strict standard that may have deleted some comments from non-50 Cents Party users, such as those involving passionate debates between netizens. However, following this standard should only lead to an underestimation of support. Moreover, we tried an alternative approach to address the concern of the 50 Cents problem. It was reasonable to suspect that the government commentators were more likely to comment on multiple websites, and even on the same tiger on different platforms, to widely guide public opinion. We therefore identified the comments posted by the same IP addresses on different websites, on different and the same tigers, detecting 8,115 and 2,338 comments, respectively. Even assuming these comments were all devoted to supporting Xi, the original findings still held. Finally, King, Pan, and Roberts (2017) show that the government commentators mainly comment on government and social media websites rather than commercial news portal websites.
6. Stop words are a set of commonly used words that should be filtered out before or after processing of natural language data. We use *jieba*—a Python Chinese word segmentation module—for text segmentation. The source codes can be found at <https://github.com/fxsjy/jieba>. We also add several dictionaries from Sogou Pinyin—a popular Chinese input software—to take into account abbreviations, cyber speak, nicknames, and so forth.
7. See Blei, Ng, and Jordan (2003). LDA serves the current research purpose better than cluster analysis (e.g., K-means). The cluster analysis method categorizes documents into different groups by calculating the distance between different texts, which is mainly based on the keywords included in each text and the frequency of each keyword. However, because short texts (online comments) were used in the database, each text has fewer words and a lower keyword frequency. Therefore, the accuracy of similarity identification using word distances between each text decreases. In addition, cluster analysis does not consider the relationship between the keywords in a text, which can lead to problems of polysemy (e.g., categorizing the text “There is an apple next to my laptop” and “There is an Apple laptop next to me” into one group) and synonymy (e.g., failing to categorize the text “long live Uncle Xi” and “Greetings to General Xi” into one group). However, LDA, the most popular topic model method, can solve these problems. It categorizes polysemous keywords into different themes and synonymous keywords into the same theme. The source codes used for analysis are from GitHub: <https://github.com/a55509432/python-LDA>.
8. We are aware that measuring support by the frequency of certain affirmative words such as “good” could lead to inaccurate results. To gauge the percentage of negative comments with the word “good,” two sets of positive comments related to Xi Jinping, consisting of 2,000 comments in each data set, were randomly selected and manually coded by two research assistants. They find that negative comments only account for 4.5 percent and 4.6 percent of all comments in the two sets, respectively. For the exploratory analysis shown in figure 5, even if 4 percent to 5 percent of misclassified comments were taken into account, the key findings would hold because Xi has an overwhelmingly high level of support.
9. The measurement is based on the total number of words instead of the total number of comments. One comment may include several affirmative words so that this method takes into account the strength of support for each comment

References

- Azfar, Omar, and William Robert Nelson. 2007. Transparency, Wages, and the Separation of Powers: An Experimental Analysis of Corruption. *Public Choice* 130(3–4): 471–93.

- Biddulph, Sarah, Sean Cooney, and Ying Zhu. 2012. Rule of Law with Chinese Characteristics: The Role of Campaigns in Lawmaking. *Law & Policy* 34(4): 373–401.
- Blei, David M., Andrew Y. Ng, and Michael I. Jordan. 2003. Latent Dirichlet Allocation. *Journal of Machine Learning Research* 3(4–5): 993–1022.
- Brunetti, Aymo, and Beatrice Weder. 2003. A Free Press Is Bad News for Corruption. *Journal of Public Economics* 87(7): 1801–24.
- Caprara, Gian Vittorio. 2007. The Personalization of Modern Politics. *European Review* 15(2): 151–64.
- Chan, Hon S. 2003. The Civil Service under One Country, Two Systems: The Cases of Hong Kong and the People's Republic of China. *Public Administration Review* 63(4): 405–17.
- Chan, Hon S., and Jie Gao. 2009. Preventing Corruption through Performance Measurement. In *Preventing Corruption in Asia: Institutional Design and Policy Capacity*, edited by Ting Gong and Stephen Ma, 97–112. New York: Routledge.
- Chanley, Virginia A., Thomas J. Rudolph, and Wendy M. Rahn. 2000. The Origins and Consequences of Public Trust in Government: A Time Series Analysis. *Public Opinion Quarterly* 64(3): 239–56.
- Chen, Jie. 2004. *Popular Political Support in Urban China*. Washington, DC: Woodrow Wilson Center Press.
- Chen, Jie, and Bruce Dickson. 2008. Allies of the State: Democratic Support and Regime Support Among China's Private Entrepreneurs. *China Quarterly* 196: 780–804.
- Cordis, Adriana S., and Patrick L. Warren. 2014. Sunshine as Disinfectant: The Effect of State Freedom of Information Act laws on Public Corruption. *Journal of Public Economics* 115: 18–36.
- Dalton, Russell J. 1999. Political Support in Advanced Industrial Democracies. In *Critical Citizens: Global Support for Democratic Government*, edited by Pippa Norris, 57–77. Oxford: Oxford University Press.
- deLeon, Peter, and Linda deLeon. 2002. What Ever Happened to Policy Implementation? An Alternative Approach. *Journal of Public Administration Research and Theory* 12(4): 467–92.
- Dickson, Bruce. 2016. *The Dictator's Dilemma: The Chinese Communist Party's Strategy for Survival*. Oxford: Oxford University Press.
- Easton, David. 1965. *A Systems Analysis of Political Life*. New York: Wiley.
- . 1975. A Re-assessment of the Concept of Political Support. *British Journal of Political Science* 5(4): 435–57.
- Fu, Huling. 2015. Wielding the Sword: President Xi's New Anti-corruption Campaign. In *Greed, Corruption, and the Modern State: Essays in Political Economy*, edited by Susan Rose-Ackerman and Paul Lagunes, 134–58. Cheltenham: Edward Elgar.
- Furtak, Robert K. 1986. *The Political Systems of the Socialist States: An Introduction to Marxist-Leninist Regimes*. New York: St. Martin's Press.
- Gillespie, Kate, and Gwenn Okruhlik. 1991. The Political Dimensions of Corruption Cleanups: A Framework for Analysis. *Comparative Politics* 24(1): 77–95.
- Goel, Rajeev K., and Michael A. Nelson. 1998. Corruption and Government Size: A Disaggregated Analysis. *Public Choice* 97(1–2): 107–20.
- Gong, Ting. 2002. Dangerous Collusion: Corruption as a Collective Venture in Contemporary China. *Communist and Post-Communist Studies* 35(1): 85–103.
- Gong, Ting, Shiru Wang, and Jianming Ren. 2015. Corruption in the Eye of the Beholder: Survey Evidence from Mainland China and Hong Kong. *International Public Management Journal* 18(3): 458–82.
- Grimmer, Justin. 2015. We're All Social Scientists Now: How Big Data, Machine Learning, and Causal Inference Work Together. *PS: Political Science & Politics* 48(1): 80–83.
- Guo, Li, and Kenneth W. Foster. 2008. Administrative Campaigns and Environmental Governance in Contemporary China. Working Paper 2, China Environmental Science and Sustainability UBC-Research Group.
- Guo, Xuezhong. 2014. Controlling Corruption in the Party: China's Central Discipline Inspection Commission. *China Quarterly* 219: 597–624.
- Han, Rongbin. 2015. Manufacturing Consent in Cyberspace: China's "Fifty-Cent Army." *Journal of Current Chinese Affairs* 44(2): 105–34.
- Jiang, Junyan, and Dali L. Yang. 2016. Lying or Believing? Measuring Preference Falsification from a Political Purge in China. *Comparative Political Studies* 49(5): 600–634.
- Kan, Feng. 2015. Account Book of Anticorruption since the 18th Party Congress, Confiscated RMB 20.1 Billion and Recovered Loss of RMB 38.7 Billion. *China News*, July 30. <http://www.chinanews.com/gn/2015/07-30/7436063.shtml/> [accessed August 12, 2017].
- Kennedy, David. 1999. The International Anti-corruption Campaign. *University of Connecticut Journal of International Law* 14: 455–65.
- King, Gary, Jennifer Pan, and Margaret Roberts. 2013. How Censorship in China Allows Government Criticism but Silences Collective Expression. *American Political Science Review* 107(2): 1–18.
- . 2017. How the Chinese Government Fabricates Social Media Posts for Strategic Distraction, not Engaged Argument. *American Political Science Review* 111(3): 484–501.
- Klitgaard, Robert. 1988. *Controlling Corruption*. Berkeley: University of California Press.
- Li, Hui, Ting Gong, and Hanyu Xiao. 2016. The Perception of Anti-Corruption Efficacy in China: An Empirical Analysis. *Social Indicators Research* 125(3): 885–903.
- Li, Lianjiang. 2004. Political Trust in Rural China. *Modern China* 30(2): 228–58.
- . 2011. Distrust in Government Leaders, Demand for Leadership Change, and Preference for Elections in Rural China. *Political Behavior* 33(2): 291–311.
- . 2013. The Magnitude and Resilience of Trust in the Center: Evidence from Interviews with Petitioners in Beijing and a Local Survey in Rural China. *Modern China* 39(1): 3–36.
- Liu, Cheol, and John L. Mikesell. 2014. The Impact of Public Officials' Corruption on the Size and Allocation of U.S. State Spending. *Public Administration Review* 74(3): 346–59.
- Liu, Cheol, Tima T. Moldogaziev, and John L. Mikesell. 2017. Corruption and State and Local Government Debt Expansion. *Public Administration Review* 77(5): 681–90.
- Liu, Nicole Ning, Carlos W. Lo, Xueyong Zhan, and Wei Wang. 2015. Campaign-Style Enforcement and Regulatory Compliance. *Public Administration Review* 75(1): 85–95.
- Lynch, Marc. 2012. *The Arab Uprising: The Unfinished Revolutions of the New Middle East*. New York: PublicAffairs.
- Manion, Melanie. 2004. *Corruption by Design: Building Clean Government in Mainland China and Hong Kong*. Cambridge, MA: Harvard University Press.
- . 2016. Taking China's Anticorruption Campaign Seriously. *Economic and Political Studies* 4(1): 3–18.
- Matland, Richard E. 1995. Synthesizing the Implementation Literature: The Ambiguity-Conflict Model of Policy Implementation. *Journal of Public Administration Research and Theory* 5(2): 145–74.
- May, Peter J., Samuel Workman, and Bryan D. Jones. 2008. Organizing Attention: Responses of the Bureaucracy to Agenda Disruption. *Journal of Public Administration Research and Theory* 18(4): 517–41.
- Monroe, Burt L., Jennifer Pan, Margaret E. Roberts, Maya Sen and Betsy Sinclair. 2015. No! Formal Theory, Causal Inference, and Big Data Are Not Contradictory Trends in Political Science. *PS: Political Science & Politics* 48(1): 71–74.
- Muller, Edward N., and Thomas O. Jukam. 1977. On the Meaning of Political Support. *American Political Science Review* 71(4): 1561–95.

- Neshkova, Milena I., and Tatiana Kostadinova. 2012. The Effectiveness of Administrative Reform in New Democracies. *Public Administration Review* 72(3): 324–33.
- Norris, Pippa. 1999. *Critical Citizens: Global Support for Democratic Government*. Oxford: Oxford University Press.
- Perry, James L. 1996. Measuring Public Service Motivation: An Assessment of Construct Reliability and Validity. *Journal of Public Administration Research and Theory* 6(1): 5–22.
- Perry, James L., and Annie Hondeghem, eds. 2008. *Motivation in Public Management: The Call of Public Service*. Oxford: Oxford University Press.
- Quade, Elizabeth A. 2007. The Logic of Anticorruption Enforcement Campaigns in Contemporary China. *Journal of Contemporary China* 16(50): 65–77.
- Quah, Jon S. T. 1999. Corruption in Asian Countries: Can It Be Minimized? *Public Administration Review* 59(6): 483–94.
- . 2011. *Curbing Corruption in Asian Countries: An Impossible Dream?* Bingley: Emerald Publishing.
- Rose-Ackerman, Susan. 1999. *Corruption and Government: Causes, Consequences, and Reform*. New York: Cambridge University Press.
- Scott, Ian. 2017. Understanding Perceptions of Effectiveness: Lessons from Hong Kong's Independent Commission Against Corruption. Working Paper, City University of Hong Kong.
- Seligson, Mitchell A. 2002. The Impact of Corruption on Regime Legitimacy: A Comparative Study of Four Latin American Countries. *Journal of Politics* 64(2): 408–33.
- Shi, Tianjian. 1997. *Political Participation in Beijing*. Cambridge, MA: Harvard University Press.
- . 2001. Cultural Values and Political Trust: A Comparison of the People's Republic of China and Taiwan. *Comparative Politics* 33(4): 401–19.
- Shirk, Susan. 1993. *The Political Logic of Economic Reform in China*. Berkeley: University of California Press.
- Song, Xuguang, and Wenhao Cheng. 2012. Perception of Corruption in 36 Major Chinese Cities: Based on Survey of 1,642 Experts. *Social Indicators Research* 109(2): 211–21.
- Stephens, G. Ross, and Nelson Wikstrom. 2007. *American Intergovernmental Relations: A Fragmented Federal Polity*. New York: Oxford University Press.
- Sun, Yan. 2004. *Corruption and Market in Contemporary China*. Ithaca, NY: Cornell University Press.
- Tang, Wenfang. 2016. *Populist Authoritarianism: Chinese Political Culture and Regime Sustainability*. New York: Oxford University Press.
- Tang, Min, and Narisong Huhe. 2014. Alternative Framing: The Effect of the Internet on Political Support in Authoritarian China. *International Political Science Review* 35(5): 559–76.
- Tanner, Murray S. 2005. Campaign-Style Policing in China and Its Critics. In *Crime, Punishment, and Policing in China*, edited by Borge Bakken, 171–88. Lanham, MD: Rowman & Littlefield.
- Tencent. 2016. Dataset of Fallen Officials in the Past 20 Years. <http://news.qq.com/zt2014/20ffdata/index.htm> [accessed August 12, 2017].
- Thomas, Craig W. 1998. Maintaining and Restoring Trust in Government Agencies and Their Employees. *Administration & Society* 30(2): 163–93.
- Titunik, Rocío. 2015. Can Big Data Solve the Fundamental Problem of Causal Inference? *PS: Political Science & Politics* 48(1): 75–79.
- Van Rooij, Benjamin. 2006. *Regulating Land and Pollution in China: Lawmaking, Compliance, and Enforcement; Theory and Cases*. Leiden: Leiden University Press.
- Villoria, Manuel, Gregg Van Ryzin, and Cecilia Lavena. 2013. Social Consequences of Government Corruption: A Study of Institutional Disaffection in Spain. *Public Administration Review* 73(1): 85–94.
- . 2015. Interview with Chinese President Xi Jinping. September 22. <https://www.wsj.com/articles/full-transcript-interview-with-chinese-president-xi-jinping-1442894700> [accessed August 12, 2017].
- Warren, Mark E. 1999. *Democracy and Trust*. New York: Cambridge University Press.
- Wedeman, Andrew H. 2004. The Intensification of Corruption in China. *China Quarterly* 180: 895–921.
- . 2005. Anticorruption Campaigns and the Intensification of Corruption in China. *Journal of Contemporary China* 14(42): 93–116.
- Wedeman, Andrew H. 2009. Enemies of the State: Mass Incidents and Subversion in China. Paper presented at the American Political Science Association Annual Meeting, Toronto, September 3–6.
- Weingast, Barry R. 1997. The Political Foundation of Democracy and Rule of Law. *American Political Science Review* 91(2): 245–63.
- Wooldridge, Jeffrey. 2010. *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press.
- Xinhua News Agency. 2016. Xi Jinping's Speech on Party Control. January 12. http://news.xinhuanet.com/politics/2016-01/12/c_1117753375.htm [accessed August 12, 2017].
- Yang, Qing, and Wenfang Tang. 2010. Exploring the Sources of Institutional Trust in China: Culture, Mobilization, or Performance? *Asian Politics & Policy* 2(3): 415–36.
- Yi, Willy Wo-Lap. 2015. Korea Raises Profile in Anti-graft Campaign. *Korea Times*, March 26. http://www.koreatimes.co.kr/www/news/nation/2016/03/180_175992.html [accessed August 12, 2017].
- Zhan, Xueyong, Carlos Wing-hung Lo, and Shui-Yan Tang. 2014. Contextual Changes and Environmental Policy Implementation: A Longitudinal Study of Street-Level Bureaucrats in Guangzhou, China. *Journal of Public Administration Research and Theory* 24(4): 1005–35.
- Zhao, Yongfei, and B. Guy Peters. 2009. The State of the State: Comparing Governance in China and the United States. Special issue, *Public Administration Review* 69: 122–28.
- Zhou, Xueguang. 2012. The Campaign Strategy: Rethinking about the Institutional Rationale of Chinese State Governance. [In Chinese.] *Open Times* 9: 105–25.

Supporting Information

A supplementary appendix may be found in the online version of this article at <http://onlinelibrary.wiley.com/doi/10.1111/puar.12866/full>.