When Grapevine News Meets Mass Media: Different Information Sources and Popular Perceptions of Government Corruption in Mainland China

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Abstract: This paper examines factors that shape people's perceptions of government corruption in mainland China. We are particularly interested in how people acquire information on local corruption, given the general lack of pertinent first-hand experience. We combine the data from a national survey in mainland China with a compiled dataset on the number of local corruption cases reported in Chinese local newspapers. The results of Probit and Heckman Selection models both show that indirect formal and indirect informal information sources have diverging effects. While coverage of corruption by newspapers controlled by the authoritarian regime reduces people's perceptions of corruption, exposure to grapevine news significantly increases perceived corruption. Moreover, access to government-controlled media can significantly dilute the negative impact of grapevine news on popular perceptions of corruption.

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Corruption by government officials violates the social contract between ordinary people and the government. Perceived government corruption diminishes the legitimacy of the political system and reduces people's trust in the government. Corruption's erosive effect on government legitimacy and political trust has been a problem for many countries, including the trilateral countries, new democracies in Latin America, and both democratic and authoritarian countries in East Asia (e.g., Anderson & Tverdova, 2003; Chang & Chu, 2006; Della Porta, 2000; Pharr & Putnam, 2000; Seligson, 2002). Moreover, when corruption is perceived to be widespread and common, such popular beliefs may contribute to sustaining corruption in a society (e.g., Manion, 2004).

In reality, however, only a small number of people have personally experienced the corruption of government officials. This is true not only for people in Europe and North America, where corruption is widely acknowledged as limited in its scope, but also for those in societies where corruption is conceded to be common, like many Latin American, East European, and East Asian countries. Research in Mexico (Bailey & Paras, 2006) and Russia (Sharafutdinova, 2010), as well as our own survey conducted in mainland China in 2002, reveals that the large majority of people do not have personal experiences of corruption. Such a situation raises a critical and theoretically important question, that is, if people themselves do not have experiences of corruption, how do they acquire such perceptions? Why do some people perceive their government to be more seriously corrupt than others? Theoretically, understanding how people's perceptions of government corruption are formulated can help us identify cognitive mechanisms that contribute to the regime legitimacy crisis witnessed by numerous societies (e.g., Booth & Seligson, 2009), and further clarify the possible role of this popular belief in the vicious circle of corruption intensification.

We argue that in many cases, people's perceptions of government corruption are based on indirect information from various sources, including formal channels like mass media and informal ones such as rumors. And informal information sources are of particular salience in shaping such perceptions in societies like Russia and mainland China, where the mass media have been controlled to various extents by their respective governments. Living in societies without a guaranteed free flow of information, people tend to seek information from unofficial sources like grapevine rumors and gossip. Moreover, such unofficial sources often provide people with information that their regime does not want to be circulated. Thus, in such societies, the coexistence of controlled mass media, which provide people with information that the government has tailored and intended for political propaganda and/or mobilization, and grapevine news, which provides people with rich but mostly negative information about the government, generates some complex but fascinating dynamics in shaping people's perceptions of government corruption.

In this paper, we use a unique combined data set to test the impacts of a variety of information on Chinese citizens' perceptions of corruption in their local governments. We find that grapevine news, which is often full of speculations and deliberate distortions, can exert a strongly negative influence on people's perceptions of government corruption. But more importantly, information from different sources also interacts with each other: formal coverage of corruption cases in controlled mass media can significantly dilute the negative impact of grapevine news on public perceptions of corruption, presumably by filling in informational gaps and clarifying unfounded speculations. Our findings suggest that authoritarian regimes may still benefit from "propaganda," even in the era of information explosion, through cunning media control and manipulation. In comparison with the situation of fully blocking access to unwanted

information in the mass media, controlled-liberalization of mass media with strategic agenda-setting and issue framing may help authoritarian regimes significantly improve their public image and even contribute to their longevity to some extent.

We start our analyses by presenting the results of questions on perceived corruption in a 2002 mainland China national survey as part of the Asian Barometer Survey I (hereafter ABS I). The results show that in addition to the media controlled by the government, Chinese citizens also rely heavily on grapevine rumors for pertinent information on government corruption. We then review existing literature on the effects of distinct information sources and develop competing hypotheses to explain the impacts of information from different sources on people's perceptions of corruption. Then, using the ABS I data and a data set compiled on the number of corruption cases reported in Chinese local newspapers in 2002, we test those hypotheses. We conclude with a discussion on the implications of the findings in this paper.

Popular Perceptions of Corruption in China

Ordinary Chinese people may use the word corruption, or *fubai*, referring to any form of improper behavior by government officials that they are dissatisfied. It can range from economic crimes such as graft, bribery, and embezzlement, to official malfeasance less relevant to monetary gains, such as shirking and torture, as well as to individual misbehavior indicating moral decay, such as having mistresses (e.g., Guo, 2008; Wedeman, 2005). In ABS I, several questions were used to tap people's perceptions of corruption, as well as their possible information sources.[1] Two of them: "how widespread do you think corruption and bribe-taking are in your local government?" and "How widespread do you think corruption and bribe-taking are in the central government?" were designed to measure people's perceptions of the corruption in local and central governments respectively. Answer categories to both questions were: "Not at

all", "Not many people", "Fairly common", and "Almost everyone is corrupt."

[Figure 1 about Here]

Figure 1a illustrates the weighted frequencies of respondents' answers to both questions. Regarding local governments, 8.29% of the respondents answered "Not at all," 32.12% opted for "Not many people," 33.71% chose "Fairly common," and 3.93% of the respondents said "Almost everyone is corrupt." Meanwhile, 21.95% of the answers were DKs. Regarding the central government, 10.95% of the respondents answered "Not at all," 27.73% opted for "Not many people," 6.72% chose "Fairly common," and 0.30% of the respondents answered "Almost everyone is corrupt." 54.30% of the answers were DKs. It is clear that survey respondents, on average, perceived more corruption in local governments than in their central government. At the same time, many people did not have much information to provide meaningful evaluations of government corruption in China, i.e., around 22% chose DK regarding corruption in their local governments and even more respondents, around 54%, chose DK regarding corruption in the central government. To avoid possible and unpredictable biases in empirical analysis due to too many missing values, we focus on respondents' perceptions of corruption in local governments in the following analyses.

After asking about people's perceptions of corruption in China, interviewers also probed respondents for any personal experiences of corruption: "Have you or your families personally experienced any government corruption in recent years?" 20.05% of the respondents gave positive answers; 77.59% gave negative answers. This finding, combined with the information in Figure 1a, clearly reveals that many people in China in 2002 actually believed that corruption in local governments was a fairly common or even prevalent problem, despite lacking personal experience of corruption. How did such perceptions develop among Chinese people? To answer

this question, interviewers further asked those respondents without personal experiences about their primary sources for pertinent information on corruption in local governments.[2] These results are shown in Figure 1b.

As displayed in Figure 1b, among those without personal experience with corruption, 17.27% learned about corruption from other people; 2.77% learned from colleagues; 56.78% learned from the mass media (controlled by the regime); 1.03% learned from internal documents; and 26.36% did not provide meaningful answers. Given respondents' self-reported information, the mass media seem to be the most common source from which Chinese citizens learn about government corruption. Following this formal but indirect information channel, grapevine news is the second most commonly accessed information source, i.e., almost 20% of the respondents obtained some sort of information about official corruption from other people or their colleagues. These findings beg a serious but rarely addressed question: how do people process possibly conflicting information acquired from different sources? More specifically, what are the impacts of official news coverage about corruption on public perceptions of government corruption? What are the impacts of grapevine rumors? How do different information sources interact with each other in influencing people's perceptions?

Mass Media Exposure, Grapevine Rumors, and Political Attitudes

Mass media's effects on public opinion have been controversial among scholars, partially due to the difficulty in capturing its exact effect on opinion formation (Bartels, 1993). For such a reason, early research of media impacts on people's political attitudes and behavior, especially people's voting behavior, concentrated primarily on the frequency of media exposure. This research found that mass media had "minimal effects" on people's political choices (e.g., Lazarsfeld, Berelson, & Gaudet, 1948).

Later scholars pay more attention to the content and form of media coverage and find that media has strong but primarily malign effects on people's political attitudes. These scholars have even coined the term "videomalaise" for this argument (e.g., Newton, 1999; Norris, 2000). Some scholars blame watching television for reduced civic engagement because of its displacement of other leisure activities and community involvement, as well as the "mean world" syndrome due to its emphasis on violence and crime (Gerbner, Gross, Morgan, Signorielli, & Shanahan, 2002; Putnam, 1995). Others argue that politics is often presented negatively on television, given its excessive emphasis on the "poll-driven horse race" and "strategic game frames" (Hart, 1994; Jamieson, 1992; Schudson, 1995). Moreover, market competition and the search for larger audiences and higher circulation figures have forced the media to dwell on dramatic news, "especially bad news about crime and conflict, death and disaster, political incompetence and corruption, sex and scandal" (Newton, 1999, p. 577). While the mass media are assigned the critical role of government watchdog, they are at the same time blamed for undermining democratic politics because of prevalent negative reporting. Following this logic, it is expected that formal media coverage of corruption in democracies is more likely to exacerbate citizens' perceptions of corruption in their governments.

In contrast, the mass media in authoritarian and other illiberal regimes are always influenced to varying extents by their states so as to forge supportive sentiment. Such regimes not only use media to mobilize political support, but also to shape people's attitudes toward the government. This is even true for post-Mao China, where mass media are still heavily used for mobilization and propaganda (Shirk, 2011a). It is undeniable that over the past several decades, the Chinese government has gradually liberalized its news media through commercialization and marketization. Consequently, the party mouthpieces of the earlier communist regime have been

partially transformed into profit-making ventures financed by sales of advertisements and private investments. Commercial liberalization has dramatically reduced government influence over the selection, framing, and wording of news stories (Esarey, 2005). As a consequence, Chinese mass media have witnessed rising investigative reporting, exposures of environmental degradation, open confrontations between media and government regulatory institutions, and sensational coverage of official malfeasance. As most recent scholarly work on Chinese mass media shows, commercialized Chinese media is more convincing, more sophisticated, and capable of satisfying readers' interest in real-life stories and problems (Stockmann & Gallagher, 2011).

However, it would be going too far to conclude that the authoritarian state has lost its control over the Chinese media, especially its news content. China's media have been characterized as boasting "commercialization without independence", enjoying "bird-caged press freedom", and resembling "watchdogs on the party leashes" (Chen & Chan, 1998; Zhao, 2000). Major newspapers, radio and television stations are still subject to close supervision from the State Publication and Press Administration, the State Administration of Radio, Film, and Television, and the Propaganda Department of the Chinese Communist Party (CCP). These institutions can influence the organization of the media industry, make personnel decisions, and most importantly issue directives for news content. Media practitioners are only free to report issues according to their own standards and decisions so long as they do not overstep certain boundaries set by the CCP. When an issue is seen as being core to social stability, economic growth, and the CCP's survival, the state usually will and is able to exert considerable control over the Chinese news media (Stockmann, 2011). Thus, to most media scholars, commercialization has yet to change the nature of Chinese mass media (e.g., Hassid, 2008).

News coverage on official corruption is no doubt highly politically sensitive as such reports can embarrass government officials, arouse public resentment against the regime and lead to social unrest. Therefore, many investigative reports by journalists on official corruption in China may not appear in the media.[3] Most news coverage of corruption that does appear in the media focuses on local governments and local officials. Instead of being presented as the result of institutional deficiencies and symptoms of a more systematic phenomenon, reported corruption cases are generally treated as isolated incidents and attributed to each convicted official's personal problems and lack of self-discipline. Moreover, when dealing with high-profile cases, such as the former Beijing party secretary and mayor, Chen Xitong and Wang Baosen in 1995, and the former Shanghai party secretary Chen Liangyu in 2006, newspapers are required to use the so called "standard draft" (*tonggao*) provided by the Xinhua News Agency.[4] Pertinent contents, format, and even general tone of news reports were carefully synchronized by the Party (Gang & Bandurski, 2011). And most importantly, the reporting of such issues has been primarily framed as the success of the government's anticorruption efforts.[5] Through such sophisticated media control, the CCP tries to make Chinese citizens believe in the government's sincere and serious efforts against corruption, and that uncovered official corruptions are isolated incidents rather than examples of a systematic and more prevalent problem (Zhao, 2000). As such, media exposure in contemporary China, essentially different from that in democracies, may actually help the regime mobilize the society, shape a more positive public perception regarding the Chinese government's anti-corruption commitment and efforts, and even lower the perceived severity and breadth of official corruption.

Nevertheless, the CCP's tight media control is unable to completely block the free flow of information. When formal sources of information are controlled, people use alternative sources

to acquire pertinent information. Among them, grapevine news is of particular interest and significance. Grapevine news can be simply defined as unofficial information transmitted via a mouth-to-mouth mechanism, which "works through and is animated by story-telling, rumor and gossip" (Ball & Vincent, 1998, p. 379). The impacts of grapevine news have been largely overlooked by political scientists, probably because most research on mass media and public opinion has focused on democratic societies with transparent governance and open information access. However, rumors are at their most rife "in the absence of other, more reliable sources of information. It is a way of filling in missing information or explaining the inexplicable" (Ball, 1987, p. 219). Hence, grapevine news may naturally arise and affect people's cognition of politics and behavior more significantly in societies wherein information is less easily accessible, like mainland China.

An important characteristic of grapevine news is that it tends to exaggerate the reality of an issue, often presenting singular issues as more common problems. Therefore, rumors and gossip have an especially malignant effect, which could be highly seditious and fuel political insecurities. In fact, in many situations, grapevine rumors have been effectively used as "weapons of the weak" to criticize the authority offstage (Scott, 1985). Governments in traditional societies, e.g., England in the late 1500s and early 1600s, with limited information circulation through officially sanctioned channels were also especially concerned about the detrimental impact of wild stories and groundless speculations (Fox, 1997). Even in contemporary Argentina and Haiti, when the military junta in the 1970s and 1990s respectively cracked down on journalists and writers and stopped the free flow of information through the mass media, the public resorted to information transmitted by word of mouth. In these violent and dangerous situations, the throng of frequently repeated rumors could "calcify into accepted

representation of social reality and political life" (Perice, 1997, p. 1).

Furthermore, grapevine news is especially powerful when disseminating information about certain significant topics, particularly negative news that formal authorities are disinclined to discuss in public.[6] To some degree, grapevine news is similar to tabloids news, which tends to cover sensational and negative stories. But unlike tabloid news, grapevine news cannot be effectively regulated and censored by government. The nature of grapevine news thus encourages political dissidents to sometimes intentionally forge negative news, distort facts, and spread rumors about the government to promote their goals. For instance, in 1989 during the Tian'anmen incident, Huang Jing, a then-PhD student at Harvard University, claimed that Li Peng, the then-Premier of China, was shot in the leg during an assassination attempt by his bodyguard and Deng Xiaoping had been sick. Several American TV programs immediately took the two stories for real and reported those stories as developments in the students' democratic movement. However, Huang later confessed under camera that he deliberately spread the rumor to force Li Peng and Deng Xiaoping to appear in public (Manheim, 1991, pp. 155-156).

Finally, as Ball and Vincent argue, grapevine news in many cases has often been seen as reliable and trustworthy, thanks to its nature as "hot knowledge, based on affective responses or direct experiences" (1998, p. 389), and usually thought to be personal and reliable. Therefore, when people learn about corruption from the grapevine, they may tend to believe in the seriousness of government corruption and hold a negative view of the situation.

Nevertheless, arguing that grapevine news tend to be perceived as reliable does not necessarily mean that grapevine news overrides official information once they interact. Grapevine information is not always digested uncritically either. As some recent work recognizes, elite rhetoric transmitted through official channels and interpersonal conversations usually have

competing effects on public opinion formation (e.g., Druckman & Nelson, 2003). Basically, official information might counteract grapevine news and dilute its impact. If the Chinese mass media are effective in mobilizing public opinion, carefully crafted and controlled media coverage of corruption might reduce or even defeat grapevine news' effects on popular perceptions of corruption by clarifying speculations and eliminating ambiguities.

Given the aforementioned theoretical reflections, we can derive the following hypotheses regarding the effects of media exposure and grapevine news on popular perceptions of corruption in Chinese local governments.

H1: *The mobilization effect of controlled mass media: strategic issue framing of official corruption in government controlled media may lower people's perceptions of corruption in local governments*.

H2: *The malignant effect of grapevine news: accessing grapevine news in China contributes to a higher perception of corruption in local governments*.

H3: *The diluting effect of formal media coverage on grapevine news: carefully crafted and controlled mass media coverage on corruption cases in China can weaken grapevine news' impact on people's perceptions of corruption in local governments*.

Statistical Models and Results

To test the above hypotheses, we combine ABS I data with a compiled dataset on the number of local official corruption cases reported in newspapers from different provincial-level administrative units in 2002.[7] Media coverage of such corruption cases is collected from major local newspapers, including daily party newspapers, and some semi-commercialized, and commercialized newspapers.[8]

Our dependent variable is a binary. Basically, we collapse people's responses to the question

“How widespread do you think corruption and bribe-taking are in your local government?” into a dichotomous variable. Answers of “Not at all” and “Not many people” are coded as 0, indicating perceptions of a low degree of corruption. Answers of “Fairly common” and “Almost everyone is corrupt” are coded as 1, indicating perceptions of a high level of corruption.

Three measurements of accessing formal and informal sources of information reported by survey respondents are included as our independent variables. Exposure to the mass media is measured by 1) respondents’ self-reported media exposure frequency: “How often do you read, listen to or watch political news?”[9] And 2) the number of local corruption cases covered in the major local newspapers accessible to respondents.[10] Access to grapevine news is gauged by respondents’ self-reported answers to the following two questions: “Within the last month, did you hear anything through grapevine rumors (*xiaodao xiaoxi*) concerning economics, politics, or society?” and “During the last month, did you discuss any grapevine rumors (*xiaodao xiaoxi*) with other people?” Respondents giving positive answers to either of these two questions are coded as possessing access to grapevine rumors.[11]

The control variables include the level of economic development at both the provincial-level and individual-level, measured respectively by provincial per capita GDP and self-reported economic situation. Self-reported economic situation is measured by four questions: respondents’ employment status,[12] and their current,[13] prospective[14] and retrospective[15] evaluations of their family economic situation. We also control for a series of critical individual demographic and socioeconomic features identified by previous research as pertinent in shaping people’s political attitudes:

Demographic features: Respondents’ age,[16] gender,[17] educational attainment,[18] and residential status.[19]

Personal experience of corruption: It is natural to expect that direct personal experiences of corruption can greatly increase one's perceptions of government corruption.[20]

Sense of relative deprivation: This is measured by perceived fairness between one's income and capability. [21] Respondents who believed that their income did not fairly match their capability are more likely to blame corruption for this mismatch and, thus, perceive more corruption in local governments.

Affiliation with the CCP: According to Anderson and Tverdova (2003), support of the regime attenuates the negative impact of corruption on government trust. We expect people affiliated with the ruling party to be government supporters, and more likely to perceive a lower level of corruption. [22]

Normative orientation toward collectivism: A lot of research has argued that social norms and culture can have certain impacts on popular perceptions of corruption (e.g., Bowser, 2001). The hierarchically structured cultural tradition, as well as the emphasis on order and collective interest, has been blamed of driving the higher tolerance of corruption in East Asian societies (Lipset & Lenz, 2000). If this is the case, it is possible that those who are normatively oriented toward collectivism are less likely to perceive corruption as a serious and prevalent problem in local governments. During the interview, respondents were asked if they strongly disagreed, disagreed, agreed, or strongly agreed with the following statements: 1) "Generally speaking, individual interest should be secondary to family interest;" 2) "For the sake of national interest, individual interest should be sacrificed;" and 3) "Sacrificing individual interest for collective interest is out of date now."[23] Respondents' averaged scores over these three questions are used to measure their collectivistic orientations.

Interpersonal trust: Perception of corruption is also influenced by one's general view of the

world and society.[24] Those who tend to trust others are more likely to trust government officials and perceive less corruption (Canache & Allison, 2005).

Political interest: Persons who are interested in politics are more likely to access pertinent information and more capable of revealing their attitudes.[25]

Before we test our hypotheses, one critical methodological issue has to be addressed: DKs in perceived corruption in local governments. Methodologically, two equally justifiable strategies can be used to address this issue. First, we can follow best practice dealing with missing values by generating multiple complete data sets using model-based imputations. Adopting this strategy, as shown in Rubin's (1987) classical work, we basically take an agnostic view of missing values and use observable associations between missing observations and other revealed information of the same subjects to recover possible values of missing observations.[26]

Second, we can also specifically model the data-generating process of DKs in the dependent variable and take that into consideration for statistical analysis. According to the accumulated wisdom in political psychology and survey methodology (e.g., Groves, Dillman, Eltinge, & Little, 2001; Tourangeau, Rips, & Rasinski, 2000), response to survey questions can be roughly conceptualized as a two-step process: 1) respondents give DKs due to, *inner alia*, cognitive or informational deficiencies; and 2) if pertinent information is available or respondents are willing to guess, they then choose the most appropriate one among provided answer categories. Thus, theoretically, DKs are not simply missing values that need to be recovered, but meaningful and informative cases that merit examination. Most recent scholarship on survey item non-response in mainland China suggest that cognitive and information deficiencies, rather than political fear, are the key driving force for DKs in politically sensitive survey questions (e.g., Ren, 2009; Yan, 2008). In other words, DK-givers differ significantly from those providing meaningful answers

in terms of cognitive sophistication and information access. Thus, it is critical to take these differences into consideration through appropriate statistical modeling when examining on how popular belief on government corruption is sustained in today's China. Empirically, this is a typical sample-selection issue. Following the seminal work of Heckman (1979), we specifically model 1) why some respondents were more likely to refuse to provide their perceptions of corruption in local governments; and 2) controlling this self-selection in providing meaningful answers to our key question, simultaneously estimate the impacts of the aforementioned factors on popular perceptions of government corruption.[27]

Since both strategies can be methodologically justified, we decide to run both models and intentionally use the results from the two models, with different assumptions, theoretical considerations, and estimation approaches, to cross-validate the robustness of our findings.[28] If both models confirm or reject some hypotheses, our confidence on the validity of the findings would be significantly increased. However, if the results from the two models diverge, we should be very cautious making interpretations, given their sensitivity to model specifications. Table 1 presents the results of Probit and Heckman Selection models.

[Table 1 about here]

In the subsequent analyses, we first examine the impacts of different information sources on popular perceptions of corruption in Chinese local governments, i.e., the highlighted section in Table 1. It is evident that despite their distinct nature, the two models provide similar results on the impacts of various information sources on popular perceptions of corruption in Chinese local governments. Thus, our following inferences on the impacts of different information sources on popular perceptions of government corruption are robust to model specifications.

As expected, first-hand information based on personal experiences plays a significant role in

shaping Chinese citizens' perceptions of corruption – those who have personal experiences of government corruption are significantly more likely to hold negative views of corruption in local governments. But as our analyses reveal, second-hand information from different sources also has significant impacts on people's evaluations of government corruption.

First of all, similar to the situation in liberal democracies, the frequency of media exposure does not have a statistically significant influence over popular perceptions of corruption in Chinese local governments. At the first glance, this finding seems to be a little surprising, as Figure 1b shows that more than 50% of the respondents claimed that they learned about government corruption primarily from the mass media. However, the finding should not be interpreted as media *coverage* does not play a role in shaping people's perceptions of corruption in contemporary China. As revealed by both models, the number of corruption cases that covered in major local newspapers does significantly reduce people's perceptions of corruption in their respective local governments. As the news coverage of corruption predominately frames the issue as 1) authorities have both the necessary determination and capability to eliminate corruption and 2) uncovered corruption cases are merely isolated incidents rather than examples of a systematic phenomenon, people may be led to believe that corruption is not prevalent in Chinese local governments, and that the singular cases that have been covered by the media actually demonstrate the intention and efficacy of their government in rooting out all corruption.

Secondly, our analyses confirm that access to grapevine news makes people perceive a higher level of corruption in local governments. The vivid, though sometimes unfounded, content of grapevine news seems to be capable of effectively winning over some people's minds and exacerbating their perceptions of government corruption. Hence, H1 and H2 are both confirmed by our empirical evidence.

Thirdly, it is critical to remind our readers that, given the existence of interaction items, the aforementioned regression coefficients of media exposure frequency, as well as access to grapevine news, can ONLY be interpreted as their respective impacts on popular perceptions of corruption in local governments when there is NO formal coverage of corruption cases in the local newspapers.[29] As shown in Table 1, the two interaction terms are statistically significant in both Probit and Heckman Selection models. Such findings tell us that the formal coverage of corruption not only directly shapes public corruption perceptions, but also significantly moderates how media exposure frequency and access to grapevine news influence this critical public opinion.

To facilitate our readers' understanding of the interaction terms, we have run simulations on the marginal effects (based on the Heckman Selection estimates), i.e., impacts on the log-ratio of the probability of holding a positive view on corruption in Chinese local governments, of media exposure frequency and access to grapevine news respectively, as the number of reported corruption cases increases from 0 to 12 (the respective minimum and maximum value in our data). The marginal effects, as well as their correspondingly 95% confidence intervals, are illustrated in Figure 2.

[Figure 2 about here]

The statistically significant and positive interaction between media exposure frequency and the number of media reported corruption cases seems to suggest that the more corruption cases are covered in newspapers, the less powerful the effect of media exposure frequency in soliciting a favorable view of the corruption in Chinese local governments.[30] Nevertheless, as shown in Figure 2a, when the number of reported corruption cases grows from its minimum to the maximum, the 95% confidence interval of the coefficient of media exposure frequency always

cover zero: the marginal impact is not statistically significant at the 0.05 level. In other words, despite the statistical significance of this *interaction effect,* substantively it is negligible or marginal at best.

In contrast, the interaction between access to grapevine news and the number of media reported corruption cases is negative and statistically significant. Given the positive and significant coefficient of access to grapevine news per se, this significant interaction suggests that when the formal information channel is completely blocked and people are only left with grapevine to form their perceptions of corruption in local governments, they can be easily lead away by the wild and negative speculations transmitted through grapevine news. However, when such corruption cases are covered in a carefully crafted and controlled way in newspapers, e.g., the situation in mainland China, pertinent information from officially sanctioned channels can contain and even suppress wild speculations, clear ambiguities, and even reorient people's attention toward how the Chinese government has been fighting and deterring corruption. This then dramatically weakens the negative impact of grapevine news on popular perceptions of corruption in Chinese local governments. As shown in Figure 2b, when there is no officially reported corruption case in the media, the lower boundary of the 95% confidence interval of the marginal effect of accessing grapevine news is above zero: it is positive and significant at the 0.05 level. When the number of reported corruption cases gradually increases up to the maximum value, the lower boundary of its confidence interval extends below zero; meanwhile, its upper boundary still hovers above zero. In other words, when there is some formal coverage of corruption cases in local newspapers, the substantive impact of accessing grapevine news is weakened, a decrease that rendered the coefficient no longer statistically different from zero at the 0.05 level. Thus, the diluting effect of formal coverage of corruption cases on grapevine news

is also confirmed to some extent by the empirical data.[31]

Most other variables performed as expected in both models. Rural residents on average are less critical and perceive a lower level of corruption in local governments than urban residents.[32] Those who evaluate their current economic situation in a more positive way perceive less corruption in local governments. People who feel their incomes are unfair given their capability are also understandably more critical and perceive significantly more corruption. Besides, as found in existing research, people's normative and psychological features also play roles in their perceptions of government corruption. Chinese citizens who are more inclined to trust other people or normatively oriented toward collectivism are significantly less likely to perceive serious corruption in their local governments.

Conclusion and Suggestion

In this paper, we systematically examined factors that could contribute to the formation of people's perceptions of corruption in the local governments of a non-democratic society with considerable media control. Similar to their counterparts in some Latin American and Eastern European societies, the majority of Chinese citizens have few personal experiences of government corruption. They learn about corruption mainly from the mass media and information related by others, or the so-called "grapevine rumors."

To test the effects of information from different channels on public perceptions of governmental corruption, we combined ABS I survey data from mainland China with a dataset on local media coverage of government corruption cases. Using different modeling strategies, we consistently found that similar to the situation in democratic societies, the frequency of media exposure had a negligible effect on respondents' perceptions of government corruption regardless of how much pertinent information was reported in the mass media. But more importantly, our

analyses show that the carefully and tightly controlled media's coverage of corruption cases in China can actually significantly decrease people's perceptions of corruption in local governments. This is compatible with most recent scholarship on media effects in authoritarian China (e.g., Shirk, 2011a; Stockmann & Gallagher, 2011). Basically, although Chinese mass media has been commercially liberalized over the past several decades, the CCP's propaganda departments are still capable of setting the agenda for and framing the news coverage of issues they believe to have important socio-political implications. More specifically, to a large extent, the party-state can still effectively shape people's perceptions of government corruption through their propaganda and mobilization through the controlled mass media.

However, the seemingly airtight media control still leaves room for information from unofficial sources to affect public perceptions of corruption. Our findings suggest that grapevine news, including rumors and gossip, is particularly influential at delivering information about certain significant topics that the Chinese government has strong incentive to hide from the public, such as official corruption. The speculative nature of grapevine rumors usually has a negative impact on people's attitudes on issues like government corruption. When there is little information revealed in the mass media on government corruption, *ceteris paribus*, Chinese citizens with access to grapevine news, on average, perceive more serious problems of corruption in local governments than those who do not have such access.

But this does not mean the party-controlled mass media is completely powerless against grapevine rumors. Our analyses showed that media coverage on corruption actually diluted or even "defeated" the detrimental effects of grapevine rumors. This finding reveals a mechanism through which authoritarian regimes can subtly influence public opinion through skillful media control. In authoritarian societies, even if the government can keep people completely in the dark,

wild and groundless speculations may still be spread through word of mouth. Under those circumstances, grapevine news beyond government's control can seriously damage its popular image and destabilize the regime. Counteracting those effects, carefully crafted news reports, especially regime-controlled media coverage of sensitive issues and consequential problems like corruption and political incompetence, can help mobilize support, solicit positive views from citizens, and even prolong the life of an authoritarian regime. This actually resonates with some of the findings from Norris and Inglehart's examination on "cosmopolitan communications" with the World Values Survey data: "Democratic values are strongest in open societies that combine affluence with media freedom and borders open to information flows from abroad" (2009, p. 256). In other words, in societies with tight and effective media control and manipulation, authoritarian regimes could successfully indoctrinate their citizens with anti-democratic values. And this facilitates authoritarian regimes' defense against possible pressure for democratic transition.[33]

Different from contemporary research on media effects in authoritarian societies, our research moves beyond the conventional focus on whether controlled mass media in these societies can directly lead to public opinions that favor their governments (e.g., Kern & Hainmueller, 2009; Parta, 2007). Incorporating the information from informal sources, e.g., grapevine news, that conventional pertinent research inclines to ignore, our work sheds light on, at least a small but critical part of the more nuanced and indirect mechanisms through which media control may work in authoritarian societies and favor the rule of authoritarian regimes. Thus, we strongly encourage future research to focus more on possible indirect effects of media control in authoritarian societies.

Last but not least, we do recognize the limits of our data and findings in this paper. For

example, without systematic content analysis of news coverage on government corruption in Chinese mass media, we could not provide direct and systematic evidence on issue framing and agenda setting by the CCP in this regard. Basically, we only inferred that from case studies in second-hand literature and robust correlations revealed by regression analyses. Moreover, due to data limit, we cannot examine the role of Internet news, which shares some similarities with grapevine news due to the nature of cyberspace, though still under serious and systematic control and regulation in contemporary China, in people's perceptions of government corruption. New information technologies' power in defeating information control and manipulation, as well as the CCP's increasing efforts in regulating online discourse and contents, actually provide another promising field for further examination on how different sources of information may interact with each other in shaping public opinion, particularly in authoritarian societies. Also, some dramatic changes in China's mass media over the past decade cannot be captured by the national survey done in 2002. Nevertheless, given the CCP's responses to the news coverage of the Tibet incident and Olympic Torch Relay in 2008, as well as its most recently released "National Image Promotion Advertisement" run in Times Square, it is reasonable to infer that the CCP might have significantly increased its efforts in improving its image among both domestic and international audiences through media campaigns. Moreover, as experienced China scholar Susan Shirk observes, "In addition to outright censorship, the Chinese government has learned to shape news content by using increasingly sophisticated press management methods" (Shirk, 2011b, p. 238). Therefore, we believe the CCP government might have been even more cautious and possibly more sophisticated in manipulating its domestic media for political purposes, like shaping popular perceptions of government corruption. However, whether this is the case or not in today's China can only be answered with future systematic empirical work.

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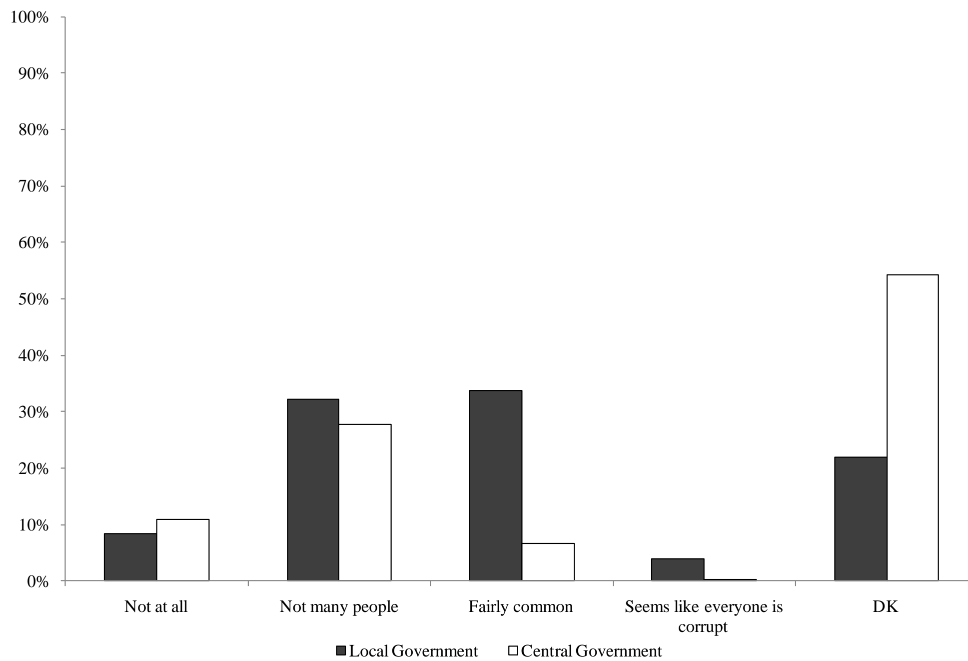

Figure 1a: "How widespread do you think corruption and bribe-taking are in your local government/ the central government?"

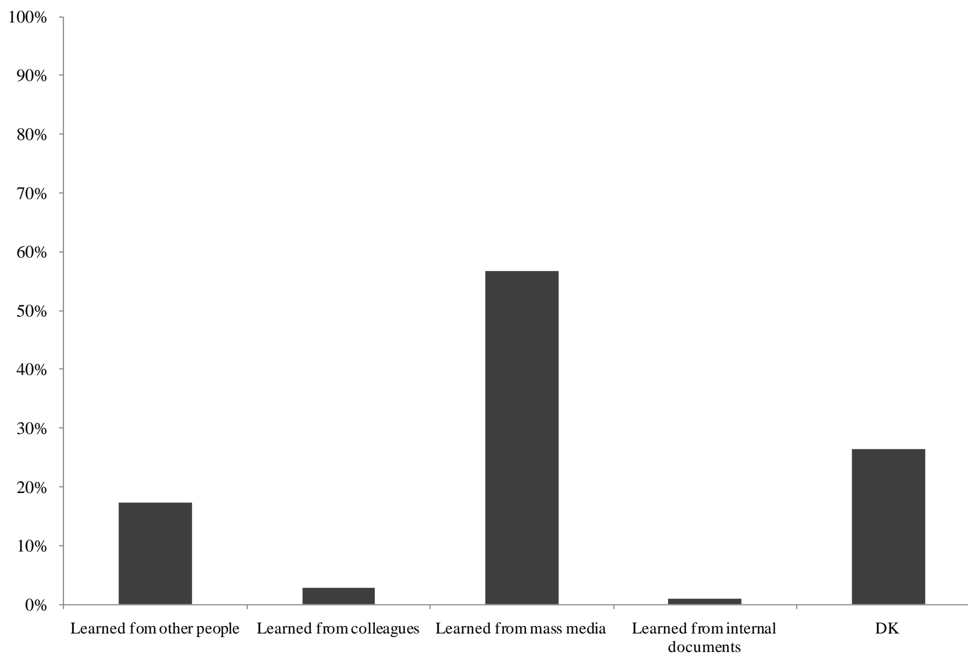

Figure 1b: "How did you acquire the information on corruption?"

Figure 1: Perceived Corruption and Information Sources

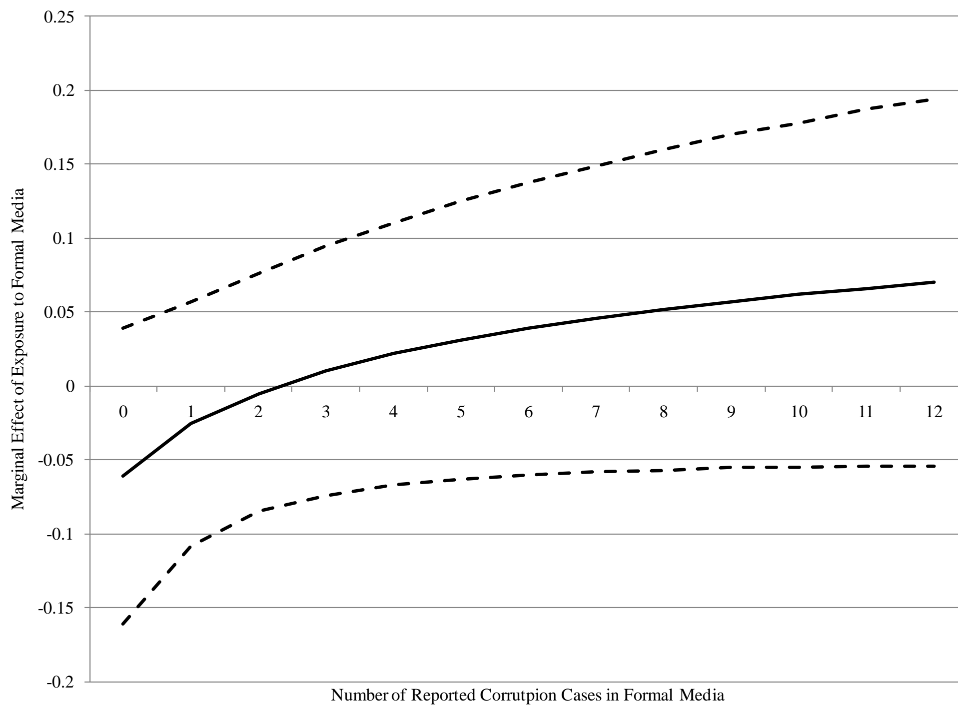

Figure 2a: Simulated Marginal Effect of Exposure to Formal Media

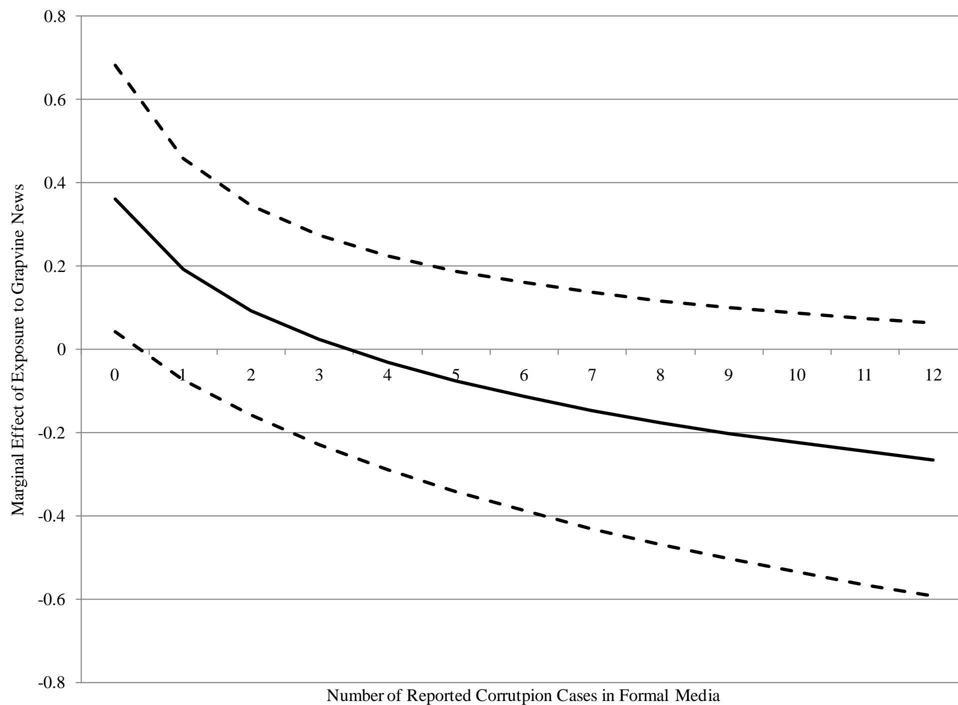

Figure 2b: Simulated Marginal Effects of Exposure to Grapevine News

Figure 2: Marginal Effects of Exposure to Formal Media and Grapevine News

Table 1: Results of Probit and Heckman Selection Models

	Probit Model	Heckman Selection Model	
		Probit (Among Those Giving Meaningful Corruption Perceptions)	Selection (Who Are Likely to Give Meaningful Corruption Perceptions)
Age	0.002 (0.003)	0.002 (0.003)	-0.004 (0.003)
Male	-0.033 (0.068)	-0.088 (0.087)	0.145 (0.066)**
Education	-0.047 (0.031)	-0.052 (0.031)*	0.013 (0.034)
Rural resident	-0.214 (0.088)**	-0.224 (0.098)**	0.080 (0.087)
Employment Status	0.084 (0.107)	0.075 (0.126)	
Current Economic Evaluation	-0.195 (0.045)***	-0.197 (0.051)***	
Retrospective Economic Evaluation	-0.034 (0.042)	-0.029 (0.043)	
Prospective Economic Evaluation	-0.075 (0.043)*	-0.057 (0.042)	
Income NOT matching capability	0.263 (0.078)***	0.225 (0.081)***	
GDP per capita	-0.003 (0.080)	-0.013 (0.093)	
CCP Affiliation	-0.129 (0.067)*	-0.116 (0.079)	0.115 (0.070)*
Political interest	0.013 (0.051)		0.231 (0.043)***
General social trust	-0.434 (0.078)***	-0.451 (0.086)***	
Collectivistic orientation	-0.318 (0.146)*	-0.343 (0.132)**	
Personal live experience of corruption	0.802 (0.086)***	0.704 (0.222)***	0.633 (0.093)***
Media exposure frequency (MEF)	-0.052 (0.047)	-0.061 (0.051)	0.031 (0.030)
Grapevine news access (*Xiaodao Xiaoxi*) (GNA)	0.357 (0.138)**	0.363 (0.162)**	0.239 (0.081)***
Number of reported corruption cases (NRC)	-0.252 (0.119)**	-0.264 (0.126)**	
MEF*NRC	0.050 (0.028)*	0.051 (0.030)*	
GNA*NRC	-0.202 (0.089)**	-0.245 (0.081)***	
Intercept	2.130 (0.438)***	2.460 (0.486)***	0.003 (0.180)
Rho			-0.356 (0.718)

Source: 2002 ABS I Mainland China Survey

Notes:

Entries are averaged results following the Rubin's rule over five imputed data sets

Sampling information incorporated using appropriate SVY commands in STATA 11 for linearized standard errors

* p < 0.1 ** p < 0.05 *** p < 0.01

Notes:

[1] For information on ABS I mainland China survey in 2002, please see our online appendix A.

[2] Question: "[If lacking personal experiences of government corruption] Where do you learn about government corruption primarily?" This only captures respondents' primary information sources for government corruption. In reality, people may learn about government corruption through multiple information sources. And this will be addressed in following sections.

[3] Interviews of journalists and editors in Guangdong, Tianjin, Shanxi, and Jiangxi, 2009.

[4] Interviews of journalist in Guangdong, 2006.

[5] Framing has been generally described as the essence of public opinion formation. Many scholars have shown that political elites and mass media can influence public opinion by picking alternative definitions or emphasizing only a subset of potentially relevant considerations. By these means, they may change the content of individuals' beliefs, affect the importance individuals attach to particular beliefs, or cause individuals to only focus on the considerations favorable to politicians and overlook other considerations when constructing their opinions. See (Druckman & Nelson, 2003; Kinder & Sanders, 1990; Nelson & Oxley, 1999)

[6] For instance, when parents are choosing schools, "the grapevine is perceived as particularly acute at delivering information" relating to the misconduct and demeanor of students (Ball & Vincent, 1998, p. 381).

[7] Professor Guang Zhang at Xiamen University kindly shared with us this valuable dataset collected by him and his students.

[8] For the differences among official, semi-commercialized, commercialized newspapers, see (Stockmann, 2011). Detailed information on the coding of media coverage of corruption cases, as well as the list of local newspapers, is available on our online appendix B.

[9] The answer category is a 5-point ordinal scale: "Less than once a week," "Once or twice a

week," "Several times a week," "Once every day," and "Several times a day." This measure provides a general measure of respondents' exposure to the mass media, including newspaper, radio and TV programs in their daily lives. Internet was not included as mass media in the survey. According to Stockmann (2009), this measure may bias analysis toward insignificant findings. However, it is the best we can find in ABS I data.

[10] This number has been transformed through a natural logarithm function to correct the positive skewness in its distribution. Unlike the other two measures on information sources, this is a variable at the provincial-level, rather than individual-level. It serves as the proxy for the features of respondents' pertinent surrounding media environment. We have also entertained the possibility of a curvilinear impact of this variable in regression analysis by adding its quadratic item. However, the quadratic item was not significant and did not change our results substantively. Such results are available upon request from the authors.

[11] The answer category for both questions is dichotomous: "Yes" vs. "No." Here we measured respondents' access to grapevine news based on either passive or active participation. Though we recognize the difference between active and passive participation in spreading grapevine news, they are not that different from each other when we focus on the nature of acquired information. Moreover, this measure also helps us minimize the possible impact of endogeneity between access to grapevine news and perception of corruption in local governments.

[12] This is a binary with 0 indicating unemployment.

[13] Question: "As for your own family, how do you rate the economic situation of your family today?" The answer category is a 5-point ordinal scale: "Very bad," "Bad," "So so (not good not bad)," "Good," and "Very good."

[14] Question: "What do you think the economic situation of your family will be five years from

now?" The answer category is a 5-point ordinal scale: "Much worse," "A little worse," "About the same," "A little better," and "Much better."

[15] Question: "How would you compare the current economic situation of your family with what it was five years ago?" The answer category is a 5-point ordinal scale: "Much worse," "A little worse," "About the same," "A little better," and "Much better."

[16] This is a continuous variable recording respondents' real ages.

[17] This is a binary with 1 indicating males.

[18] This is an 8-point ordinal scale recording respondents' formal educational attainment, ranging from "Illiteracy" to "Postgraduate."

[19] This is a binary with 1 indicating rural residency.

[20] This is a binary based on respondents' answers to the following question: "Have you or your families personally experienced any government corruption in recent years?" Positive answers are coded as 1.

[21] This is a binary based on respondents' answers to the following question: "Given your capability and performance, do you think that you get a fair income?" Negative answers are coded as 1.

[22] This is a binary with 1 indicating official affiliation with the CCP.

[23] Respondents' answers to the third statement were reversely coded.

[24] This is a binary based on respondents' answers to the following question: "General speaking, would you say that 'Most people can be trusted' or that 'You must be very careful in dealing with people'?" Endorsement of the first statement is coded as 1.

[25] Question: "How interested would you say you are in politics?" Then answer category is a 4-point ordinal scale: "Not at all interested," "Not very interested," "Somewhat interested," and

"Very interested." This variable was selected for the Heckman Selection model to predict which respondents were more likely to provide meaningful answers when probed for their perceptions of corruption in local governments.

[26] Though it is impossible to differentiate between missing at random (MAR) and nonignorable missing (NI), in most cases multiple imputations under the MAR assumption perform very well as confirmed by numerous methodologists (e.g., King, Honaker, Joseph, & Scheve, 2001).

[27] The second approach is not free of problems, and has been increasingly criticized for its problematic distribution assumptions and other statistical issues (e.g., Puhani, 2000).

[28] All missing values in independent variables are filled in through model-based multiple imputations and all results are averaged results of five imputed data sets following the Rubin's rule. Survey sampling information is systematically incorporated through SVY commands in STATA. To systematically incorporate the nested-structure of our combined data, i.e., respondents live in provinces, we also fitted a hierarchical Probit model following the same specification. Results are similar and available upon request from the authors.

[29] On appropriate specification and interpretation of interaction models, see (e.g., Brambor, Clark, & Golder, 2006; Braumoeller, 2004) . We accordingly have included all constitutive terms and interaction terms for valid estimation and inference.

[30] It is important to keep in mind that, given the controlled mass media in China, the coefficient of media exposure frequency is (and also expected to be) negative, indicating its potential in lowering popular perceptions of corruption in local governments.

[31] This negative interaction effect also indicates that the marginal effect of the number of reported corruption cases in the media is more significant among those with access to grapevine news. Simulation shows that when individuals do not have access to grapevine news, the

coefficient of the number of reported corruption cases in the media is -0.264 with a p-value of 0.038. Among those possessing access to grapevine news, the corresponding coefficient is -0.509 with a p-value of 0.001.

[32] This finding may seem surprising, given the widely reported collective protests in rural China (e.g., Li & O'Brien, 2008). However, systematic analysis based on survey data shows that, in rural China, most protests actually target village and township governments and rarely involve higher level governments. Moreover, China rural residents generally have a higher trust in county, city and provincial governments, despite their anger toward village and township governments (Li, 2008, 2011).

[33] Here we focused on people’s perceptions of government corruption, rather than corruption in practice. Controlled media seem to serve the Chinese authoritarian regime by lowering perceived corruption in government; however, it might actually facilitate corruption in practice. For the relationship between media freedom and corruption, see (Brunetti & Weder, 2003).