Incentivizing Corruption: An Unintended Consequence of Bureaucratic Promotions in China

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Abstract

Conventional wisdom holds that in non-democracies, a strong central state can reward and punish local administrations through a merit-based promotion system, which should restrain officials' "grabbing hand". But much evidence shows rampant corruption in countries with a powerful central government. This study argues that merit-based promotions can be compromised by three disincentives: factional politics at upper-level administrations, a lack of serious punishments for wrong-doing, and difficulties in evaluating officials' performance, each of which is common in non-democracies. As a result, promotions could incentivize corruption. Using a fuzzy regression discontinuity design exploiting exogenous variations in officials' promotion incentive from a mandatory age cutoff for promotion, combined with a biographical database of prefecture party secretaries and novel measures of corruption, I find that promotions encourage corruption in China. Moreover, prefecture party secretaries are more corrupt if their provincial superiors are connected to central factions, suggesting that upper-level factionalism is one of the disincentives that breaks down lower-level meritocracy.

Keywords: corruption, promotion, bribe, meritocracy, factionalism.

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1 Introduction

Conventional wisdom holds that a powerful central state in non-democracies reward and punish local administrations through a merit-based promotion system (Shleifer and Vishny 1993; Frye and Shleifer 1997; Blanchard and Shleifer 2001; Li and Zhou 2005). This system creates yardstick competitions for promotion based on precincts' economic performance, which should incentivize officials to restrain corruption because corruption harms economic performance.[1] However, anecdotal evidence around the world paints a different picture regarding promotion and corruption. In fact, massive corruption is deeply entrenched in countries with a powerful central government such as Fujimori's Peru, Suharto's Indonesia, and post-Mao China. Corruption networks and office-selling chains are common in those countries (e.g., McMillan and Zoido 2004; Zhu 2008).

The theory of merit-based promotion fails to capture the positive relationship between corruption and promotion since it assumes a benevolent superior who promotes better-performed subordinates to foster growth (e.g., Blanchard and Shleifer 2001). This assumption, however, does not always hold. In the real world, decisions on official promotions often rest with *self-interested superiors*. As regime leaders must rely on mid-level officials – the immediate "superiors" of local officials – to make lower-level promotion decisions, three factors may decrease incentives for these superiors to choose merit-based promotions. First, superiors' stake in lower-level economic growth may be low, especially when the superiors' (i.e., mid-level officials') own political career depends more on loyalty than performance, when the superiors have a small chance of further promotion, or when the superiors more closely tie their payoffs to the survival of top regime leaders or political factions (Nathan 1973; Quinlivan 1999). Second, the lack of serious punishment for wrong-doing in non-democracies increases superiors' interests in bribe-taking. In non-democracies, institutional checks on officials' accountability are weak. Media watchdogs are largely absent due to state censorship. Thus, the risk of getting caught in bribe-taking is much lower than that in democracies.

[1] Although corruption could be efficiency enhancing under weak market institutions (e.g., Lui 1985), scholars find that the first-best equilibrium is no corruption (Fisman and Svensson 2007).

Third, accurately evaluating lower-level officials' performance is difficult due to vague and manipulatable performance indicators (Wallace 2016). Difficulties in identifying competent subordinates make a merit-based promotion scheme less desirable.

In this paper, I posit that the success of a merit-based promotion system depends on superiors' tradeoffs between *informal bribe revenues* that they can solicit from subordinates and *formal benefits* such as wages, bonuses, careers, and political achievements that come from subordinates' performance. The three disincentives discussed above can influence this tradeoff: if superiors' stake in lower-level economic developments is sufficiently low, punishments for wrongdoing are not sufficiently high, and/or evaluating subordinates' performance is difficult, bribe revenues become more attractive. As bribe revenue increases, superiors turn merit-based competitions into corruption-based tournaments under which subordinates collect corruption revenues to bribe their way to promotions. As a result, promotion practices at lower levels incentivize bureaucratic corruption. In contrast, if the three disincentives are sufficiently weak, promotions should reduce corruption. Thus, by assuming self-interested superiors, my theory captures both a corruption equilibrium and a performance equilibrium. I formalize this argument using a promotion tournament model with bribing opportunities (detailed in Online Appendix A).

I then apply the theory to the context of the Chinese bureaucracy. The Chinese government is currently the largest hierarchical bureaucracy in the world, with over 50 million employees at the local level in 2009. Bell (2016) argues that the China Model is a viable alternative to Western democracy because the Chinese bureaucracy is democratic at lower levels but meritocratic at higher levels. My theory calls into question this argument. Although the Chinese government has been acclaimed for being a "helping hand" behind China's economic success (Frye and Shleifer 1997), its upper-level administration (i.e., provincial level and higher) is notorious for elite struggles (Nathan 1973; Shih, Adolph and Liu 2012). Moreover, at least before Xi Jinping's presidency, some criticized the Chinese government for the lack of serious punishments for government wrongdoing or "corruption by design" (Manion 2004). Scholars also find that rampant fake statistics erode officials' ability to correctly evaluate bureaucratic agents (Wallace 2016). Due to factional politics

at upper levels, the lack of punishment for corruption, and unreliable performance indicators, the Chinese bureaucracy very likely falls into an equilibrium of corruption-based promotions.

To test this argument, I collect a unique and comprehensive biographical dataset on a full sample of 903 prefecture party secretaries (the de facto prefecture leaders) from 2000 to 2010.[2] Using several novel measures of corruption, such as the area of land sold through negotiation between local officials and land developers in each prefecture, which involves back door transactions and grey incomes for the local officials, I identify a causal effect of promotions on corruption using a fuzzy regression discontinuity design based on a mandatory age limit for promoting public officials. Due to this age limit, officials whose ages are below the cutoff when they start their posts as prefecture party secretaries have stronger incentives to obtain promotions than officials whose ages are above the cutoff. Indeed, I find that corruption levels are higher for otherwise identical officials with stronger promotion incentives. I also find that promotions have a negative but insignificant effect on officials' performance as measured by their precincts' GDP – one of the most important criteria for evaluating Chinese local leaders' performance. These findings support my argument and cast doubts on the conventional wisdom that cadre promotions in China are merit-based, at least at the prefecture level.

My theory suggests that factionalism in mid-level officials' career advancement is a disincentive (but not the only one) that erodes merit-based promotions. If this is the case, promotion should encourage more corruption for lower-level officials who report to superiors with connections to central factions than those who report to unconnected superiors. To test this mechanism, I use an indicator for superiors' political connection to test whether these connections increase the effect of promotions on corruption. I find that promotions are associated with higher levels of corruption when prefecture party secretaries report to politically-connected provincial leaders.

[2]I exclude party secretaries after 2010 because on October 18th Vice-President Xi Jinping was given a new job as the vice-chairman of China's Central Military Commission, a position for leaders-in-waiting, and it is well-known that cadre promotions in the Xi era have experienced some chaos, especially during the power transition (e.g., Shirk 2018).

This paper identifies a new source of corruption in non-democracies: promotion incentives in bureaucracies. As Gibbons and Waldman (1999) point out, wage and promotion are the two most important incentive mechanisms for agency control inside hierarchical organizations. While the literature on bureaucratic corruption largely focuses on wages, monitoring, and decentralization (Aidt 2003; Olken 2007; Fan, Lin and Treisman 2009), we know less about how promotions influence bureaucratic corruption.[3] My paper fills this gap by highlighting the conditions under which promotions encourage/discourage bureaucratic corruption.

The literature of political selection in dictatorships mainly focus on the tradeoff between competence and loyalty (e.g., Egorov and Sonin 2011; Zakharov 2016). Previous studies of political selection in China also link promotions to officials' economic performance and factional ties (Nathan 1973; Maskin, Qian and Xu 2000; Shih, Adolph and Liu 2012; Meyer, Shih and Lee 2016; Landry, Lü and Duan 2018). This paper adds to this literature by exploring *the role of corruption* in political selection. I argue that officials may collect corruption revenues to bribe their way to higher-level offices (i.e., office buying) when institutional disincentives facilitate corruption-based promotions. I provide systematic evidence to support this argument. In addition, my theory links factional politics with bureaucratic meritocracy by highlighting that upper-level factionalism is one of the disincentives that compromises lower-level meritocracy and leads to widespread corruption.

This paper provides a plausible explanation for why factionalism is often related to corruption. Factions are vertically organized patron-client networks linked by personal connections (Dittmer 1995; Nathan 1973); and factional patrons provide offices to clients in exchange for political supports (Wedeman 2004). Factional selection of prefecture-level officials may be bribery-based in China insofar as prefecture-level officials must bribe provincial-level superiors to join the superiors' factions to obtain promotion. Bribe exchange is highly secret and exclusive, but it can be

[3]Literature on Weberian meritocracy addresses the relationship between promotion and corruption (Evans, Haggard and Kaufman 1993; Rauch and Evans 2000) and argues that internal promotions sustain a stable, closed bureaucracy and secure careers for bureaucrats to pursue long-term rewards rather than short-term corrupt gains. Promotion incentive itself is not their focus.

facilitated by equally secret and exclusive factional networks. As my theory suggests, promotions in this circumstance incentivize prefecture-level officials to raise corruption revenue to bribe superiors. This prediction is supported by the evidence that promotion incentives of prefecture-level officials causally influence corruption behavior.[4] The positive interaction effect of faction connections and promotions on corruption is also consistent with this bribe-based factional selection argument. Thus, my theory explains why dictatorships, especially personalist dictatorships, are often victims of rampant corruption if they emphasize loyalty more than competence in political selection.

This paper also contributes to a large body of literature on corruption in China (e.g., Guo 2008; Lü 2000; Manion 2004; White 1996). In particular, several descriptive studies have suggested a link between promotion and corruption in China. For example, Sun (2004) documents the office-for-sale phenomenon in Chinese bureaucracy and argues that "promotion while engaging in corruption" stems from the Chinese Communist Party's (CCP) inability to screen out corrupt candidates. Guo (2008) finds that a high proportion of corrupt public officials were promoted between the time when a public official commits fraud for the first time and the time when his corruption is discovered. He attributes this phenomenon to the CCP's ineffective performance evaluation and audition. Unlike previous arguments, my theory and findings suggest that promotion and corruption go hand-in-hand not only because the CCP is unable to screen corrupt officials out of the promotion path, but also because promotions *incentivize* bureaucratic corruption.

2 The Theory of Promotion-Incentivized Corruption

Corruption is the abuse of public office for private gain (Rose-Ackerman 1999). This paper focuses on bureaucratic corruption, which means government officials exploit administrative power

[4]If lower-level factions are formed purely through loyalty ties such as families, friends, and relatives, then promotions should not causally influence corruption, though there might be a spurious correlation between promotion and corruption because faction patrons may tolerate lower-level clients' corruption as long as they provide political support to the faction.

to further personal interests through bribery, embezzlement, extortion, and fraud. Corruption is harmful to economic development because it misallocates resources, lowers investment, distorts the market, and deters firm entry (e.g., Fisman and Svensson 2007).

The literature on institutions and corruption mainly emphasizes two factors to restrain corruption: 1) government accountability; and 2) state strength in regulating local administrations. The government accountability argument holds in democracies, where party competition, elections, information transparency, and freedom of speech enable citizens and interests group to hold public officials accountable for unethical behaviors (Ferraz and Finan 2008; Olken 2007). In the absence of democratic institutions, however, scholars argue that state strength facilitates central leaders' ability to control lower-level officials' "grabbing hands", which, in turn, could reduce corruption (Blanchard and Shleifer 2001; Frye and Shleifer 1997; Shleifer and Vishny 1993).

The state strength argument relies on a crucial assumption: there exists a benevolent superior (e.g., a central leadership) that prefers more economic growth and less corruption (Blanchard and Shleifer 2001). Thus, a merit-based promotion tournament among lower-level officials regulates their behavior despite the absence of democratic accountability (Li and Zhou 2005; Maskin, Qian and Xu 2000; Qian and Xu 1993). This argument is theoretically compelling but assumes a benevolent superior who *directly* promotes subordinates. My theory relaxes this assumption to explain how corruption can prevail in those non-democracies with a strong central state.

In reality, superiors who control promotions are often not benevolent or pro-growth. First, regime leaders could be corrupt too. Famous corruption cases such as Indonesia's Suharto, Philippine's Marcos, and more recently China's Zhou Yongkang and Xu Caihou suggest that a county's central leadership is not immune to corruption. Second, insecure regime leaders may promote loyal but incompetent followers for survival, even at a cost of lower economic growth (Egorov and Sonin 2011; Zakharov 2016). Third, even if a regime leader is benevolent, only in rare cases is she directly responsible for evaluating and promoting local officials. The regime leader needs to delegate power to mid-level officials — the immediate superiors to local officials — to manage promotions. Since those immediate "superiors" are self-interested agents whose interests may not

be in line with the regime leader, agency problem arises upon delegation (Huber and Shipan 2002). In non-democracies, the agency problem is salient when superiors have strong discretionary power due to the lack of credible institutions to hold them accountable. In addition, the more tiers there are in a bureaucratic hierarchy, the worse the agency problem tends to be. Empirical evidence indeed suggests that countries with more administrative tiers and local public employees suffer higher levels of corruption (Fan, Lin and Treisman 2009).

By treating superiors as self-interested agents, I argue that promotions, under some circumstances, incentivize corruption instead of curbing it. In a hierarchical administration, superiors may benefit from subordinates' performance, i.e., superiors' career advancements, political achievements, or some monetary rewards may rely on how well subordinates perform in their precincts. For example, a technocrat may rely on subordinates' economic performance as a signal of her own competence for promotion. However, many factors could reduce superiors' reliance on subordinates' performance. For instance, a faction-connected superior may be promoted on the basis of loyalty or political support instead of economic performance. When superiors have a low stake in lower-level performance, their gains from implementing a merit-based promotion scheme among subordinates diminish.

In addition, the difficulty of measuring governance performance affect superiors' gains from a merit-based promotion scheme. Unlike managers whose performances can be clearly measured by firm outputs, stock market values, etc., government officials have a variety of duties that cannot be easily evaluated, such as environmental regulation, poverty relief, or the provision of education and other public goods. In addition, due to the lack of reliable checks and balances on the leadership from horizontal accountability mechanisms such as independent courts and free media, government officials in non-democracies are well-positioned to manipulate performance indicators to signal competence. When there is large uncertainty in observing performance (e.g., local economic growth), superiors may not be able to distinguish better performing subordinates from poorly performing ones and thus have a higher probability of promoting the wrong person. Anticipating that the outcome of the merit-based promotion is largely determined by luck rather than

effort, subordinates will exert less effort, which, in turn, reduces superiors' gains from subordinates' productivity.

Knowing that they will benefit less from lower-level officials' performance in the merit-based promotion scheme due to their low stake in lower-level performances and noisy performance observation, utility-maximizing superiors should turn to alternative reward structures when promoting lower-level officials. Because institutional checks, media watchdogs, and free speech are largely absent in non-democracies, the risk of bribe-taking is low and thus soliciting bribes from subordinates yields higher returns for those superiors. Thus, they often choose a bribe tournament for subordinates. In response, subordinates raise corruption revenues to bribe their ways to promotions. Under these circumstances, promotions incentivize subordinates' corruption.

A Formal Model

Appendix A presents a formal model that illustrates the argument of promotion-incentivized corruption. Although simple in structure, it shows that with one or more of the three disincentives, promotions can encourage bureaucratic corruption.

Two sets of actors are involved: a superior and two identical subordinates. The superior chooses to let subordinates compete in either a performance tournament or a bribe tournament. If the superior chooses the performance tournament, she can take a share α of two subordinates' performances $2(\theta - c^*)$ – subordinates' innate ability θ deducts economic loss due to equilibrium-level corruption c^*; if she opts for the bribe tournament, she receives one subordinate's maximum bribe b, subject to the probability of being caught in bribe-taking $1 - p$. On the other hand, the subordinates compete with one another in either tournament by choosing a level of corruption c to maximize their expected utility from the corruption revenue and the revenue from the upper-level job if they get promoted. Under a performance tournament, subordinates' performances are observed with a noise ϵ that has a mean 0 and a variance σ^2.

As Appendix A shows, given different values of parameters, there is either a performance equilibrium (i.e., the superior chooses the performance tournament) or a corruption equilibrium (i.e.,

the superior chooses the bribe tournament). Similar to the conventional thesis, promotions discourage corruption in the performance equilibrium. However, in a corruption equilibrium, promotions under the bribe tournament incentivize subordinates to extract a higher level of optimal corruption c^* than that from a non-promotion regime. That is, although subordinates with no promotion incentives will engage in corruption because that is the only strategy to maximize personal benefits, subordinates with promotion incentives need to extract more corruption revenues to maximize personal benefits and, at the same time, bribe the superior to get promoted so that they can also reap personal gains in the higher-level position.[5]

More importantly, Appendix A shows that the superior will choose the bribe tournament over the performance tournament if the following conditions hold (and vice versa): the share α the superior can take from subordinates' performance is sufficiently low, or the probability of being caught in bribe-taking $1 - p$ is sufficiently low, or the variance σ^2 of the noise in performance observation is sufficiently large, or any sufficient combinations of these three factors.

The model leads to the following hypotheses:

H1: Promotions incentivize Corruption – In a non-democratic environment, if mid-level officials' stake in lower-level performance is sufficiently low, observing performance is sufficiently difficult, and/or punishments for wrong-doing is not serious, promotions will incentivize lower-level corruption.

H2: Promotions disincentivize Corruption – In a non-democratic environment, if mid-level officials' stake in lower-level performance is sufficiently high, observing performance is sufficiently easy, and/or punishments for wrong-doing is sufficiently heavy, promotions will discourage lower-level corruption.

Factionalism and Promotion-Incentivized Corruption

As discussed above, the superior's share α of (or stake in) the subordinates' performances influences whether the superior chooses the performance-based or the bribe-based tournament. Several

[5]See the proof of Proposition 3 in Appendix A.

factors determine the value of α. For example, a superior may have little incentive for further promotion because she can reap sufficient monetary revenues from her current position. Thus, her gains from subordinates' performance are relatively unimportant, which can be interpreted as a small α. More importantly, superiors may care little about lower level performances if their own career advancements depend on faction ties instead of performance.

Factionalism is common in non-democracies. As Haber (2006) points out, authoritarian leaders are inherently insecure. They must rely on a ruling coalition to take power and govern the people. Since there is no independent third-party to enforce a "power-sharing" agreement between the leaders and the ruling coalition, they are prone to coups d'ètat or elite-splitting (Svolik 2012). Authoritarian leaders have developed various techniques to minimize the probability of displacement (Quinlivan 1999). An important technique is to select loyalists to their power circle for politic support. Mid-level officials – the superiors of local officials – are central leaders' immediate targets for political support. Thus, when those mid-level officials' own career advancement is faction-based instead of performance-based, they care less about lower-level officials' performance (i.e., the share α is smaller). This logic suggests that a superior with a factional connection to a higher-level superior is more likely to incentivize lower-level corruption. On the contrary, a superior without factional connections is more likely to discourage lower-level corruption because she will need lower-level performance to signal her competence for career advancement.

In addition, top factional leaders may protect corrupt mid-level officials as long as they provide political support. Such protection reduces the probability of being caught in bribe-taking $1-p$. As a result, bribes from lower-level officials become even more attractive to those mid-level officials.

Given this logic, I expect subordinates to be more corrupt if they have a politically connected superior. This argument entails the following testable implication:

H3: The effect of promotion on corruption increases conditional on superiors' factional connections.

Note that factionalism is not the only disincentive that breaks down merit-based promotions, nor is it the only mechanism that reduces α – the superior's stake in subordinates' performance.

Thus, the relationship between promotions and corruption is not *deterministically* conditional on political connections. That is, without political connections, we shall still observe a positive effect of promotions on corruption if other disincentives work.[6]

3 Promotion and Corruption in Chinese Context

In this section, I contextualize the theoretical framework with promotion and corruption practices in China. China's multilevel government is well-suited to examine the promotion-incentivized corruption argument. The Chinese government incorporates nearly fifty thousand townships nested in counties/districts (2862), cities/prefectures (333), and provinces/municipalities (34) under the central government. This multilevel hierarchy consists of fifteen administrative ranks (there are multiple ranks at each level) with about 53.9 million local officials. Few personnel decisions are made directly by the central leadership. Decisions on official promotions rest with mid-level authorities whose power is not sufficiently constrained by the central government (Ren and Du 2008; Whiting 2004), which creates opportunities for office buying and selling.

China's economic reform in the late 1970s further changed mid-level officials' (i.e., superiors) incentives for moving up the administrative ladder. Before the reform, the highly centralized planning economy along with the nomenklatura appointment system forced officials to obey the rules set by the central government, because most of the resources were allocated top-down through a planning system. The economic reform in the late 1970s marked a turning point. Although the central government still holds strong or even stronger personnel power through the nomenklatura system (Edin 2003), economic power is decentralized, along with most of the material resources (Zhan 2009). The localized monetary incentives create many opportunities for misconducts by mid-level and lower-level officials (Gong 2006; White 1996). Economic decentralization not only allows lower-level officials to obtain corruption revenues from local economies but also reduces their superiors' (mid-level officials) stake in merit-based promotions because bribes from lower

[6]I examine factionalism because comparing with noises in performance measures and risks of punishments, political connections are easier to operationalize and measure.

levels become more attractive.

On the other hand, the punishment for wrongdoing in the Chinese bureaucracy is weak, at least before Xi Jinping's presidency. As Manion (2004) demonstrates, anti-corruption efforts in mainland China were superficial because of the "unclear authority and responsibility of anti-corruption agencies that are tangled with party and government bodies at each level, the political-economic institutions that provide incentives for corrupt practices, and the fundamental misconstruction of rule of law and trivialization of civil liberties". Bureaucratic control of corruption was so ineffective that Manion (2004) calls in the system "corruption by design".

In addition, factionalism has always been paramount in Chinese politics, especially at upper levels. As Dittmer (1995) point out, factionalism was especially salient when Mao Zedong was in command, and it remained salient under Deng Xiaoping despite attempts to minimize its impact. Recently, scholars find that factionalism is still one of the key determinants of political selection for Chinese officials at the provincial and above levels (Landry, Lü and Duan 2018; Meyer, Shih and Lee 2016; Shih, Adolph and Liu 2012). The importance of factionalism for provincial officials' promotion further reduces those officials' interests in promoting lower-level performance.

Moreover, Chinese local economic indicators are notoriously noisy due to data manipulation. As Wallace (2016) finds, because economic statistics serve as criteria for evaluating local officials, Chinese subnational governments intentionally manipulate economic statistics during periods of political turnover to signal high performance. The People's Daily News (December 09, 2012) reported that local economic statistical manipulation has been a severe problem for a long time.[7] Li [Keqiang], then-executive vice premier of China, also said GDP figures are "man-made" and therefore unreliable.[8] The difficulty in obtaining accurate performance measures further pushes mid-level officials to employ merit-based promotion.

Self-interested, powerful mid-level officials and a decentralized economy combined with insufficient punishment, unreliable performance measures, and factional politics at the upper level

[7]Reproduced by Sina.com: http://finance.sina.com.cn/china/hgjj/20121208/081813940775.shtml.

[8]Wikileaks, Cable 07BEIJING1760, 15 March 2007.

together create distortions in the promotion race among lower-level officials. Massive corruption is deeply entrenched in the Chinese bureaucracy. In 2015, Transparency International ranked China 83 out of 168 countries in its corruption perception index. The recent anti-corruption campaign launched by President Xi Jinping also publicized many high-ranking government officials and enormous amounts of money involved in corruption cases.

Evidence from news reports and academic research suggests that buying and selling offices are very common in China.[9] In fact, it has become the leading category of corruption cases in the reform era (Sun 2008), and it usually involves a large number of corrupt officials. For example, the investigation of Guizhi Han, the vice chairwoman of the Heilongjiang People's Political Consultative Committee, uncovered more than 28 high-ranking officials in Heilongjiang province. In the corruption case of Li Zhen, the chief of the State Tax Bureau in Hebei province, more than 160 other senior officials were implicated. Bribing for promotion was the most common form of wrongdoing for corruption charges against officials in these cases. In the following section, I present a design that provides systematic evidence for promotion-incentivized corruption in China.

4 Measures and Empirical Strategies

This section discusses corruption measures, the fuzzy regression discontinuity design that examines how promotions influence bureaucratic corruption in China (H1), and a panel data model with an interaction term for testing the mechanism regarding factionalism and promotion-incentivized corruption (H3).

Land Sale as a Measure of Corruption

The key measure of corruption is the area of land sold through negotiation in each prefecture. This measure captures corruption conducted by local leaders. Due to the legacy of Communism public ownership, land in China virtually belongs to local governments. The current land regu-

[9]Office Buying and Selling Become Political Climate. 2015. Xinhua News. Link: http://www.xinhuanet.com/legal/2015-10/25/c_1116931051.htm.

lations stipulate that land-sale income should be managed as local budgetary revenue, which is very difficult for local officials to embezzle after transactions end. However, local officials have opportunities to solicit illegal gains during the process of land transactions.

Land sales in China are well known for the "dual land market" (Xu, Yeh and Wu 2009): sales by bidding, auction, and quotation versus sales through negotiation. Bidding, auction, and quotation are transparent, open-market transactions so that soliciting illegal payments is difficult during the processes. However, during negotiation sales, local officials and developers discuss quantity, price, and other supplements of transactions in private. Given the secret nature of negotiations, local officials have plenty of opportunity to seek personal gains. Although the Central Government kept tightening its hand on land sales through negotiation, the regulations were unsuccessful, and negotiation sales are still a common practice among local governments. For example, data from the Ministry of Land and Resource (2006) reveals that the area of land sold through negotiation constitutes of more than 70 percent of the total area in land transactions in 2003 and 2004, but revenues from this type of sales are less than 50 percent of total land revenues.

It is commonly recognized among scholars that land sales by negotiation generate rents and create opportunities for corruption (Xu, Yeh and Wu 2009). The CCP People's Procuratorate Daily News also noted that "among all the land transaction methods, negotiation is the one with the greatest opportunity for corruption." There are numerous land-related corruption cases. For example, in the notorious "Mu Ma Corruption Case" in Shenyang City, Liaoning Province, Mu Suixin, the then vice party secretary, and Ma Xiangdong, the then vice mayor, could give any amount of land for free to whomever they wanted. For just one case, they freely transferred 350 million RMB (Roughly 59 Million USD) worth of land to Liu Yong, a businessman and land developer in Shenyang. In return, Liu gave Mu and Ma kickbacks.

Chen and Kung (2016) provide evidence that land revenue may be used by local leaders to bribe their way to promotions. They find that land revenue has an additional effect for local leaders with political connections in securing promotions. And this additional effect decreases for local officials who served in the regions where corruption crackdown on higher-level officials occurred.

Chen and Kung (2018) further find that provincial party secretaries who provided discounted land to firms linked to members of CCP Politburo are more likely to be promoted to positions of national leadership in China.

This evidence suggests that the area of land sale through negotiation well captures local corruption. More importantly, this measure directly measures corruption by local leaders instead of street-level bureaucrats, because land transactions are highly centralized and have to be formally approved by the People's Government in each prefecture.[10] That is, prefecture leaders – party secretaries and mayors – hold the final responsibility for land sale approvals, as illustrated in the "Mu Ma" corruption case.[11]

A Fuzzy RD Design for the Main Effect

Promotions, I posit, should incentivize local officials' corruption in China. To test this main effect, I am interested in estimating β in the following equation:

$$C_{ij} = \mu + \beta P_{ij} + f(Age_i) + X_i\Delta + M_j\Psi + \epsilon_{ij}, \tag{1}$$

where C_{ij} denotes the level of corruption during official i's term in prefecture j. P_{ij} denotes the official's promotion status after she finished her term in prefecture j. X_i is a set of baseline individual characteristics. M_j is a set of prefecture-level characteristics. Estimating equation (1) using OLS yields inconsistent estimates of β because unobserved individual and prefecture characteristics could affect both promotion and corruption. A prefectural party secretary's promotion is shaped by individual characteristics, the performance of the prefecture she is governing, and the prospects of the official, each of which may not be entirely captured in X_i and M_j and might also

[10]Notice of the Ministry of Land and Resources on Issuing the Rules on the Assignment of State-owned Land Use Right by Bidding, Auction and Quotation (for Trial Implementation) and the Rules on the Assignment of State-owned Land Use Right by Agreement (For Trial Implementation), 2006.

[11]See Appendix B.1 for more details on this measure.

affect C_{ij}. For example, an official's charisma might affect her chance of promotion and corruption behaviors at the same time. Given that it is not possible to fully control for such factors, the error term ϵ_{ij} will be correlated with the treatment P_{ij}, which in turn will bias the estimate of β. In addition, there may be reverse causality if corruption influences promotion instead of the other way around.

To address the potential endogeneity problem and omitted variable biases, I adopt a fuzzy regression discontinuity (fuzzy RD) design that exploits a policy on age limits for promoting and retiring government officials.

In China, age is a major consideration in cadre appointments. The cadre rejuvenation program, promoted by Deng Xiaoping in the late 1970s, made age one of the most important criteria for cadre retirement (Manion 1993; Zhong 2003). According to the rule, officials at vice-provincial and below levels (e.g., prefecture, county) must retire from their positions when they reach age 60.[12] More importantly, there is a common unwritten rule that the maximum age for promotion to the vice-provincial level is 55.[13] In other words, prefecture-level officials older than 55 will not be promoted to the vice-provincial level and their appointments are terminal at prefecture-level by default. This age limit thus creates a "glass ceiling" effect for local officials (Kostka and Yu 2015). Table 1 shows the age ceilings for major promotions along the administrative ladder.[14]

[12]See also the Rule for the Retirement Ages of Party and Government Officials. Link: http://shebao.southmoney.com/yanglao/zhengce/201409/45277.html.

[13]How Much Does Age Affect Cadre Promotion? reproduced by Phoenix New Media, Link: http://wemedia.ifeng.com/40001457/wemedia.shtml. Another example is this article: "Chinese Cadres' Administrative Rankings, Retire Ages, and Promotion Age Limits", Link: http://wenku.baidu.com/view/847128df7f1922791688e874.html. In addition, the average age for vice-provincial officials is 54. See, for example, Cadre Promotion: Unbreakable Age Ceilings, 163.com. Link: http://data.163.com/14/0829/08/A4Q8LAG800014MTN.html

[14]Interpreting Public Servants' Promotions: Political Careers Terminate after 35 Years Old for Officials below County Level. Fujian Daily, Reproduced by China Economy.cn. Link:

Table 1: Age Ceilings for Major Promotions

Position	Ranking	Age Ceiling
Vice-Provincial Level (副部级)	9-10	55
Vice-Prefecture Level (副厅级)	13-14	45
Vice-County Level (副处级)	17-18	35

Source: Fujian Daily, Reproduced by China Economy.cn

Since prefecture party secretaries' term length is 3.5 years on average,[15] if a party secretary is older than 51.5 when she begins her term, she is less likely to be promoted after the term. This age cutoff imposes an exogenous variation on prefecture party secretaries' promotion *incentives* – officials below the 51.5 cutoff age are eligible for promotions whereas officials above the cutoff age are less or not likely to be promoted in future, which creates different incentives. I thus use 51.5 years old as a cutoff age to assign the treatment status. Officials younger than 51.5 belong to the treatment group – the group of officials with promotion incentives, whereas officials older than 51.5 belong to the control group – the group of officials who lack promotion incentives. I then use this age discontinuity as an instrument for actual promotions to predict corruption, which is a fuzzy regression discontinuity design:[16]

http://www.ce.cn/macro/more/201306/16/t20130616_24482807.shtml.

[15]Eaton and Kostka (2014) find that the average tenure length of prefecture party secretaries is about 3.7 years, but their sample includes those secretaries who held a second term on the same position. Perhaps the most comprehensive data on prefecture party secretaries' tenure length is from Landry, Lü and Duan (2018). They collected all prefecture party secretaries from 1999 – 2007 and document an average length of 3.49 years. In my sample of 593 party secretaries who did not hold two terms on their position, the average length is 3.59 years.

[16]Another way to interpret this fuzzy RD design is that promotion is an expected-value (i.e., probabilistic) function instead of a deterministic function of age cutoff: there is no guarantee that an official will have a promotion if her age is below the cutoff, and in some cases, officials might still get a promotion if their ages are above the cutoff.

$$P_{ij} = \alpha + \rho Agedummy_i + f(Age_i) + X_i\Gamma + M_j\Theta + \eta_{ij}, \tag{2}$$

$$C_{ij} = \mu + \beta P_{ij} + f(Age_i) + X_i\Delta + M_j\Psi + \epsilon_{ij}, \tag{3}$$

where variable $Agedummy_i$ is an indicator that is equal to 1 if the party secretary i is younger than 51.5 at her first year on the post and 0 otherwise. The forcing variable Age_i denotes the age of party secretary i at her first year on the post. Because the treatment assignment is based on individual secretaries' age, I average the prefecture-year units by individual party secretaries' years in office. Thus, the unit of analysis is individual party secretaries. I use a linear form for the control function f.[17] By using this fuzzy RD setup, the second stage (equation 3) coefficient β will be a consistent estimator of the causal effect of promotion on corruption.[18]

In theory, with an RD design I would not have to include any other covariates. I include covariates X_i and $M_j$for two reasons. First, there may be potential factors that may compromise the validity of the fuzzy RD. If the fuzzy RD design is valid, the inclusion of these covariates should not affect the consistency of the estimator of β_1 (Lee and Lemieux 2010). Second, I could obtain more statistical power when I control for the covariates, in case that the measure of corruption might be noisy.[19]

[17]I use a variety of specifications for the control function f, though my preferred specification uses the linear form given that the sample size is relatively small (648 observations) which might not be enough to fit polynomial specifications accurately. The linear function form makes sense in the context since the older a secretary is, the less likely she will be considered promotion in general.

[18]Note that consistency is a property of the estimator. I use consistency instead of unbiasedness as a criterion for estimation because it is relatively rare for an estimator to be unbiased and the property of unbiasedness does not imply that more information is better than less regarding estimation of parameters. The property of consistency improves on unbiasedness in both of these directions (Greene 2011).

[19]I also estimate specifications without controls, the coefficients are similar and statistically sig-

Accessing Sorting and Weak Instrument Problems

The fuzzy regression discontinuity design relies on a critical assumption that the assignment to treatment is not *entirely* manipulable within a neighborhood of the cutoff point.[20] Unless officials can *precisely* sort themselves below or above the cutoff age (i.e., they can precisely manipulate their age of starting the post), the design identifies an exogenous treatment effect.

In Chinese bureaucracy, it is almost impossible for officials to sort themselves around the cutoff age precisely. For example, as Lü and Landry (2014) find, the lack of opening positions at the mid-level government unit is an important constraint in cadre promotions. Anecdotal evidence suggests that lower-level officials often complained that mid-level officials do not want to retire so that there are no openings for them. Consider a 48-year-old official who is waiting for promotion to a prefecture party secretary post. If there is an opening, she shall be promoted before 51.5 years old. However, if there is no opening, she might be well beyond 51.5 before she becomes a party secretary. And whether she will get a promotion before or after 51.5 years old is not perfectly controlled by this individual. Thus, uncertainties along the promotion ladder make the 51.5 age cutoff a plausible randomization device.

In addition, I formally test the validity of this cutoff strategy. First, I investigate whether party secretaries can manipulate their ages precisely around the cutoff age using the density function test developed by McCrary (2008). If there is manipulation in officials' age, we should observe a discontinuity in the age distribution at the cutoff. The result shows that the density function of age does not have any significant discontinuity at the cutoff, indicating no evidence of manipulation (Figure 1).

Second, I conduct a series of balance tests to see if the pre-treatment covariates at the cutoff point have any discontinuity (Lee and Lemieux 2010). The results show that youth league experience, office experience, ethnicity, education level, and gender are all similar between the treatment

nificant. See Appendix Table B.7 for details.

[20]See Lee (2008)'s discussion on vote share as a randomization device for RD design.

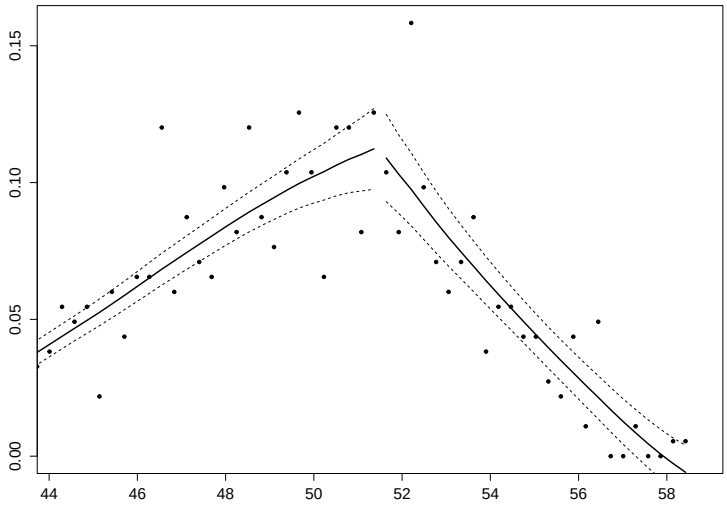

Figure 1: McCrary Sorting Test, P = 0.943

and control groups (Online Appendices: Figure B.3). In addition, the share of secondary industry, the percentage of construction land in the total area of the prefecture, local government budget, GDP per capita and population are also similar between the treatment and control groups (Online Appendices: Figure B.4). Statistical analyses found no significant differences in those covariates between two groups. These results further suggest that the assignment by cutoff age is as-if random.

Since the Fuzzy RD is basically an instrumental variable version of RD, I further conduct tests to address under-identification and weak instrument concerns. In the first-stage regression results, the Kleibergen–Paap under-identification LM test rejects its null hypotheses at $p = 0.01$ level, suggesting that the instrument – age dummy – is adequate to identify the equation. The Kleibergen–Paap Wald test for weak instruments has an F statistic that equals 9.1, slightly smaller than the rule-of-thumb value 10. However, the weak-instrument robust inference based on Anderson–Rubin Wald test and Stock–Wright LM test reject their null hypothesis at $p = 0.01$ level, which suggests that the weak instrument problem is not likely a concern.

Mechanism Testing: Factionalism

As discussed above, factionalism is one of the mechanisms that could break down merit-based promotions and encourage lower-level corruption. To test this mechanism, I add a dummy variable for mid-level officials' political connection to a panel data model and interact it with lower-level officials' promotions. Because prefectures are nested in provinces, a prefecture party secretary may report to different province leaders whose political connection statuses may differ. Given this complication, I cannot use the averaged individual party secretary data. Thus, I use the original panel data with prefecture-year units. In addition, the effect of political connections cannot be causally identified since provincial-level officials' connections are not exogenous. Thus, I resort to a panel data model instead of the above Fuzzy RD model that is based on individual-level data. The specification is the following:

$$C_{jt} = \gamma_0 + \gamma_1 P_{ij} + \gamma_2 G_{gt} + \gamma_3 P_{ij} G_{gt} + X_i \Lambda + M_j \Sigma + \upsilon_{ijgt}, \tag{4}$$

where C_{jt} indicates the corruption level of prefecture j at year t, P_{ij} indicates official i's promotion status, G_{gt} is a dummy variable with value 1 indicating that the provincial leader is connected to central factions at time t, and 0 otherwise. The Panel Data estimate γ_3 is the coefficient of interest that reflects how promotion is associated with corruption conditional on mid-level official's political connection status. I expect γ_3 to be positive and statistically significant.

5 Data

I construct an original panel dataset that links measures of local corruption with political appointments for all the prefecture party secretaries in China's 332 prefectures from 2000 to 2010. I focus on the prefecture level because the land sale data is only available at that level, and prefectures are the immediate lower-level to provinces where scholars have found salient faction-based promotions (Shih, Adolph and Liu 2012; Landry, Lü and Duan 2018). Because the variable of interest – promotion incentives – is assigned using party secretaries' age, I use individual secre-

taries as the unit of analysis and take averages of the prefecture characteristics and the corruption measure during each party secretary's years in office. Due to missing data on land sales for some random cities in random years, the averaged dataset contains 648 party secretaries. (See Table B.1 in the Online Appendices for the summary statistics.)

Data on Corruption

The key measure of corruption, the area of land sold through negotiation in each prefecture, is obtained from the Land and Resource Statistical Yearbooks from 2000 to 2010. Additional measures of corruption are aggregated from the World Bank's Enterprise Survey (WBES) in 2005. See Online Appendix B.2 for more details regarding alternative corruption measures.

Data on Promotion

Prefecture party secretaries' career information was collected from several sources. First, I used local government websites and provincial yearbooks to identify the names of party secretaries. I then collected their bibliographies to identify their political appointments after leaving the current post. I collected a full sample of 903 party secretaries from 2000 to 2010 (a total of 3,270 secretary-year observations). I then coded a dummy variable, *Promotion*, which equals 1 if the official was promoted from the prefecture-level to vice-provincial or provincial level, and 0 otherwise. Note that those who were laterally moved and retired are coded into the non-promoted category. In total, about 33 percent of prefecture party secretaries were promoted to higher level positions.

The fuzzy RD design uses officials' age for treatment assignment. The variable, *Age*, indicates an official's age when starting the party secretary post. In my sample, the average age is 49.57. The instrumental variable for the fuzzy RD specification, *Age Cutoff Dummy*, is equal to 1 if the official is younger than 51.5 years when she took the post and 0 otherwise. In my sample, roughly 72 percent of party secretaries were below the cut-off age when they started their posts.

Data on Provincial Leaders' Faction Connections

The political connection status of provincial party secretaries – the immediate superiors of prefectural party secretaries – is coded based on the "Connected China" database,[21] following Keller (2016). This database is compiled by a team of journalists from a reputable and reliable news source and is publicly available. I code a provincial party secretary as having factional connections if he or she is associated with current or previous members of Politburo standing committee, the Princelings, or the Communist Youth League, following Shih, Adolph and Liu (2012) and Meyer, Shih and Lee (2016).

Other Control Variables

In my empirical specifications, I control for party secretaries' personal characteristics, such as gender, education, and ethnicity. One may question that factionalism at lower levels may confound promotion and corruption. Although the fuzzy regression discontinuity can solve confounding problem, I further include the Youth League membership and office secretary experience variables to control for potential political connections. It is well-known that past positions in the Youth League help an official's career advancement. A famous example is Hu Jintao, the former leader of China, who served the No.1 Secretary of the Central Youth League. Officials who took important Youth League positions are considered within the Youth League faction (Meyer, Shih and Lee 2016). In addition, serving as a secretary for a higher-level official or working closely with him significantly contribute to the lower-level official's career advancement (Meyer, Shih and Lee 2016). If officials are selected into a fast path for promotion due to political connections, they will be more likely to be placed to the party secretary post before 51.5. Controlling for these variables helps rule out such potential biases.

Prefecture-level covariates include local GDP per capita, the share of the second industry, FDI, population, and government budget. It is possible that prefectures with a fast-growing economy and industry will sell more land for development. Thus, I control for GDP per capita, the share

[21] Fathom Information Design and Thomson Reuters, 2013. Link: https://fathom.info/china/.

of the second industry, FDI, and population to account for local demands for land sales. The availability of land in a prefecture also constrains the amount of land that could be sold on the market. Thus, I include the variable Construction Land – the share of urban construction areas to the total area of a prefecture – to control for land resources in a prefecture. I obtain these variables from the Chinese Prefecture Statistical Yearbook.

6 Results

Promotion-Incentivized Corruption

I expect promotions incentivize corruption in China. I use two-stage least square (2SLS) regressions for the fuzzy RD specification.To examine whether the particularly chosen bandwidths around the threshold affect the main results, I ran the linear 2SLS with individual and prefecture-level controls for different bandwidths. For example, the ± 3 year bandwidth includes officials who were older than 48.5 and younger than 54.5 years old. Robust standard errors are clustered at the prefecture level to account for serial correlation among secretaries holding the same prefecture office over time.

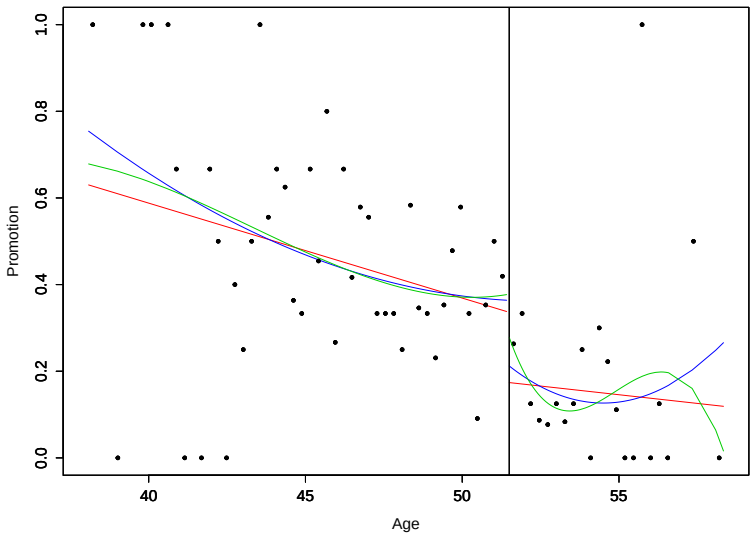

Figure 2: Promotion Probability at the 51.5 years age threshold

Figure 2 plots the effect of age cutoff on promotion with red, blue, and green lines indicating

first-order, second-order, and third-order polynomials respectively. There is a clear discontinuity around the 51.5 age cutoff. Table 2 shows the results from the Fuzzy RD specifications. The coefficients of the age dummy and promotion are consistent across model specifications. Panel 1 in Table 2 reports the first stage results. A party secretary under 51.5 years old will be 15.2 – 19.5 percent more likely to get a promotion. The effects are strongly significant and do not change as the sample size shrinks. These results further suggest that the age cutoff is a valid instrument for promotion incentives and is not subject to weak instrument problem.

Table 2: Linear 2SLS Results for Different Bandwidths

	(1)	(2)	(3)	(4)	(5)
	Full Sample	Optimal BW	±5 years	±4 years	±3 years
Panel 1: First Stage, Age Dummy on Promotion					
Age Dummy	0.167***	0.145**	0.152**	0.195***	0.186**
	(0.0555)	(0.0655)	(0.0676)	(0.0728)	(0.0815)
Age	-0.0194**	-0.0256**	-0.0232*	-0.00724	-0.0106
	(0.00863)	(0.0118)	(0.0134)	(0.0172)	(0.0247)
Indv. Ctrls.	Yes	Yes	Yes	Yes	Yes
Pref. Ctrls.	Yes	Yes	Yes	Yes	Yes
Constant	-0.691	-0.745	-0.989	-1.903*	-1.891
	(0.539)	(0.703)	(0.804)	(1.046)	(1.429)
Panel 2: Second Stage, Promotion on Land Sold Through Negotiation (Log)					
Promotion	2.379**	2.950*	2.968*	2.553*	1.581
	(1.179)	(1.774)	(1.778)	(1.404)	(1.460)
Age	0.0483	0.0831	0.0851	0.0484	-0.0442
	(0.0475)	(0.0890)	(0.0913)	(0.0712)	(0.0965)
Indv. Ctrls.	Yes	Yes	Yes	Yes	Yes
Pref. Ctrls.	Yes	Yes	Yes	Yes	Yes
Constant	-1.983	-1.576	-0.942	0.856	4.904*
	(1.568)	(2.085)	(2.193)	(2.323)	(2.802)
Observations	648	568	512	441	361

Robust standard errors in parentheses, clustered on city
*** p<0.01, ** p<0.05, * p<0.1

Panel 2 in Table 2 shows that an official with promotion incentives sell 5 to 10 times more land area through negotiation, and the effects are statistically signification in model specification using the full sample, and samples with bandwidth ± 5 years and ± 4 years. I also select an optimal bandwidth that minimizes mean-squared-error (MSE). The optimal bandwidth using Imbens' MSE method for bandwidth selection is 6.52 at each side of the cutoff age, which spans from

45 to 58 years old. The results from using the optimal bandwidth remain statistically significant. Given that there are only 648 observations to fit fuzzy RD models, the results are quite impressive. These results suggest that promotion incentives have a positive effect on bureaucratic corruption as measured by land sales through negotiation. Although the results become insignificant when the bandwidth shrinks to ± 3 years, this is likely due to a loss of statistic power in 2SLS estimation given the largely reduced sample size. Nevertheless, even if the coefficients become insignificant in smaller samples, the signs remain positive.[22]

The above results are from the Fuzzy RD specification using a linear control function $f(Age)$. I also test specifications using quadratic and cubic control functions. The results are consistent with the above results, and the effects are statistically significant in all specifications with different functional forms (Online Appendix B.5).

My results provide evidence that promotions incentivize bureaucratic corruption. This evidence is consistent with my theoretical argument and cannot be explained by other theories. For example, one might be concerned that it is the change of incentive structure from planning economy to market economy and the decentralization of economic power that made local officials corrupt. This argument is certainly true, but if it is the only cause of corruption, then local officials would be corrupt regardless of promotions. That is, promotions would not incentivize them to be more corrupt. Another concern is that a party secretary could have an increased supply of bribes if he has a high incentive for promotion because companies are more likely to bribe "promotable" officials. However, my empirical strategy mitigates this concern because the corruption measure – the area of land sales through negotiation – is determined by officials instead of companies. In other words, local officials are actively seeking corruption opportunities when they determine the amount of land area for negotiation sales.

[22]The results are robust when I control for additional covariates (Online Appendix B.4). I also use a local linear regression method suggested by Skovron and Titiunik (2015) for the non-parametric estimation of regression discontinuity method. The results are similar to the parametric estimates. See Online Appendix B.6 for details.

I use alternative measures of corruption derived from World Bank Enterprise Survey dataset to further examine the relationship between promotion and corruption. Consistent with the above results, promotion is positively correlated with corruption as measured by the perceived obstacles from tax administrations and obstacles due to unstable economic and administration policies. The results are statistically significant even if the sample size is only 103. The results are reported and discussed in Online Appendix B.7. I also examine whether promotions increase officials' economic performance using measures of local economic development, and find insignificant results (Online Appendix B.8).

Mechanism: Superiors' Political Connections

One mechanism of promotion-incentivized corruption is that factionalism at mid- and upper-level administrations reduces the importance of merit-based promotion at lower levels so that mid-level officials are more likely to solicit lower-level officials' bribes in exchange for promotions. To test this mechanism, I fit Specification (4) using prefecture-year panel data. Robust standard errors are clustered at the provincial level to account for serial correlation among secretaries who report to same provincial leaders.[23]

Column (1) in Table 3 reports the results from fitting a model without the interaction term. Provincial officials' political connection positively affects prefectural party secretaries' corruption level. The model in Column (2) includes the interaction term, which is positive and statistically significant. In model (3) and model (4), I further include individual characteristics. In total, the effect of promotion on corruption conditional on superior's political connection is about 50 percentage point higher. Hypothesis testing of this linear additive effect is significant at the 0.01 level (based on Model 4). Figure 3 plots the marginal effect of promotion on corruption conditional on mid-level officials' political connection status (with 95% Confidence Interval). These results provide evidence for the factionalism mechanism and further support the promotion-incentivized corruption theory.

[23]The results are robust when clustering standard errors at the prefecture level.

Table 3: Effect of Promotion on Corruption Conditional on Mid-Level Factionalism

	(1) w/o Interaction	(2) w/ Interaction	(3) w/o Interaction	(4) w/ Interaction
Promotion x Connected		0.295**		0.275**
		(0.126)		(0.137)
Promotion	0.310***	0.174*	0.261***	0.135
	(0.0862)	(0.0996)	(0.0964)	(0.103)
Politically Connected Superior	0.575*	0.488	0.595*	0.510
	(0.337)	(0.357)	(0.343)	(0.366)
Local Characteristics	Yes	Yes	Yes	Yes
Politician Characteristics	No	No	Yes	Yes
Province Fixed Effect	Yes	Yes	Yes	Yes
Constant	-2.591	-2.407	-1.603	-1.402
	(1.997)	(1.993)	(2.296)	(2.312)
Observations	2,056	2,056	1,965	1,965
Number of Prefecture	277	277	276	276

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

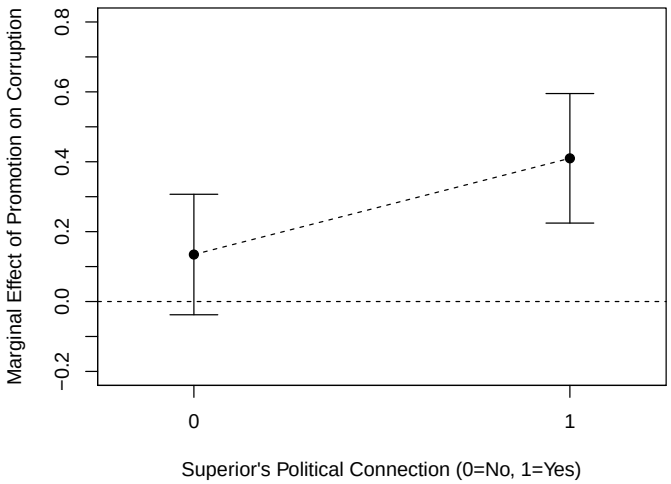

Figure 3: Marginal Effect of Promotion on Corruption Conditional on Superior's Political Connections

7 Conclusion

Bureaucratic corruption in developing countries has been widely condemned by both domestic and foreign observers. Numerous studies have explored the effects of wage, monitoring, or decentralization on corruption. In this article, I focus on the role of promotion in bureaucratic corruption

in China. I argue that promotion may encourage corruption when punishments of wrongdoing are sufficiently low, observing performance is difficult, and/or mid-level officials' career advancements depend little on lower-level officials' performance, especially in the presence of factionalism at upper levels of administration – a common situation in non-democratic regimes. The theory of promotion-incentivized corruption provides a new explanation for the existence of persistent and widespread corruption in developing countries. It especially explains why Chinese officials are so corrupt even if the promotion system is designed as merit-based. I apply a fuzzy RD design using the mandatory age cutoff for promotion on a unique dataset of Chinese prefecture party secretaries' career information to identify the causal impact of promotions on corruption and find that promotions causally increase corruption. I further find that the effect of promotion on corruption increases conditional on superiors' factional connections, which provides additional evidence to my argument. This finding also suggests that factionalism at upper levels have disastrous consequences on lower-level administration and society.

The theory developed in this paper highlights three disincentives that could lead to a corruption equilibrium: faction politics at upper levels, lack of serious punishment for wrong-doing, and difficulties in evaluating officials' performance. Accordingly, institutions on these aspects can be designed to control corruption and restore merit-based promotions. Thus, this paper has generalizable implications for combating corruption in non-democratic or partially democratic countries, especially in countries with single-party or dominant-party system in which government positions are tangled with hierarchical party organizations, such as North Korea, Russia, Syria, or even Iran.

This article also contributes to the debate on the nature of political selection in China and sheds light on the understanding of incentives of local politicians in non-democracies. My finding that the effect of promotion on corruption level increases conditional on mid-level officials' political connections is consistent with the factionalism argument. In addition, the evidence that promotion prospects do not encourage prefectural-level economic performance is consistent with the findings from the recent advancement of factionalism studies in China (Landry, Lü and Duan 2018; Shih, Adolph and Liu 2012; Meyer, Shih and Lee 2016). Because corruption data is not available at the

county level, I am not able to examine whether promotions curb or encourage county government officials' corruption. It is possible that performance plays a more important role than bribes in county officials' career advancement, as suggested by Landry, Lü and Duan (2018). It is also possible that the bribe-based promotion at prefecture level will trigger chain reactions of corruption at lower levels: to pay bribes for their career advancement, prefectural officials solicit bribes from lower-level officials, which encourages lower-level officials to be more corrupt and then bribe for promotion. The results from the WBES data that focuses on street-level corruption suggests the possibility of the latter. Further empirical studies along this line will be helpful.

Except for upper-level factionalism, other conditions may also reduce or reinforce promotion-based corruption. For example, monitoring and punishing mid-level officials who solicit bribes from lower-level can reduce promotion-based corruption. This is not only because mid-level officials' costs of encouraging bribe tournament increase, but also because lower-level officials' incentives to get promoted to mid-level decrease given the existence of punishment. In addition, as discussed in the theoretical part, noises in performance indicators may encourage promotion-based corruption. Empirical studies on these directions worth further exploring.

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